

# New Bedford Harbor Long-Term Monitoring Survey VI: Final Summary Report

## New Bedford Harbor Superfund Site Long-Term Monitoring VI New Bedford, Massachusetts

Contract Number: W912WJ-12-D-0004

Delivery Order Number: 19

A photograph showing a boat on the water. In the background, there is a large crane and industrial buildings. The sky is blue with white clouds. The water is dark green.

Prepared for  
U.S. Army Corps of Engineers  
New England District  
696 Virginia Road  
Concord, Massachusetts 01742-2751

Prepared by  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, Massachusetts 02061

September 2015



US ARMY CORPS  
OF ENGINEERS  
NEW ENGLAND DISTRICT

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## Acronyms and Abbreviations

|        |  |
|--------|--|
| AED    | Atlantic Ecology Division  |
| cm     | centimeter   |
| dGPS   | differential global positioning system   |
| DO     | dissolved oxygen   |
| DUP    | matrix duplicate   |
| EMAP   | Environmental Monitoring and Assessment Program  |
| EPA    | United States Environmental Protection Agency  |
| ER-L   | effects range-low  |
| ER-M   | effects range-medium   |
| FSP    | field sampling plan  |
| ft     | feet   |
| GC/ECD | gas chromatography/electron capture detection  |
| GPS    | global positioning system  |
| GTX    | GeoTesting Express   |
| ID     | identification   |
| LCS    | laboratory control sample  |
| LCSD   | laboratory control sample duplicate  |
| LTM    | long-term monitoring   |
| m      | meter  |
| max    | maximum  |
| mm     | millimeter   |
| mg     | milligram  |
| mg/L   | milligram per liter  |
| min    | minimum  |
| MPC    | measurement performance criteria   |
| MS     | matrix spike   |
| MSD    | matrix spike duplicate   |
| ng/g   | nanograms per gram (equivalent to micrograms per kilogram [ $\mu\text{g}/\text{kg}$ ]) |
| NOAA   | National Oceanic and Atmospheric Administration  |
| PCB    | polychlorinated biphenyl   |
| ppm    | parts per million (equivalent to milligrams per kilogram [ $\text{mg}/\text{kg}$ ])    |
| QAPP   | Quality Assurance Project Plan   |
| QA     | quality assurance  |
| QC     | quality control  |
| RIS    | recovery internal standard   |
| RL     | Reporting Limit  |
| RPD    | relative percent difference  |
| R/V    | Research Vessel  |
| SIS    | surrogate internal standard  |
| SOP    | standard operating procedure   |

|           |  |
|-----------|--|
| SRM       | standard reference material                        |
| TOC       | total organic carbon                               |
| µg/g      | micrograms per gram                                |
| µm        | micrometer   |
| USACE NAE | U.S. Army Corps of Engineers, New England District |



## Executive Summary

The United States Environmental Protection Agency (EPA) Region 1 and United States Army Corps of Engineers New England District (USACE NAE) have been collecting long-term monitoring (LTM) data at the New Bedford Harbor Superfund Site (site) since 1993 to quantify the long-term environmental effects and effectiveness of remediation efforts in the harbor. This report presents data collected for the sixth round of the LTM (LTM VI) performed at the site in 2014. Sediment grabs were collected for chemical and physical testing as well as benthic community analysis to assess sediment conditions. Surficial sediment (top 2 centimeter [cm]) was analyzed for polychlorinated biphenyls (PCBs), total organic carbon (TOC) content and grain size distribution. Sediments from the biologically-active zone (top 10 cm) were analyzed for benthic infauna and grain size. These data will be evaluated by EPA in the context of the broader LTM program (1993 to 2014) to assess spatial and temporal trends in the data and the effects and/or effectiveness of the remedial activities.

The LTM VI sampling was conducted between September 20, 2014 and September 30, 2014. Samples were collected from 79 stations in three main areas in New Bedford Harbor designated as the Upper Harbor (Area 1), Lower Harbor (Area 2), and Outer Harbor (Area 3). Overall, the results were comparable with past LTM years. Total PCB concentrations in sediment were highest in the Upper Harbor and decreased from north to south. The average total PCB concentration was one order of magnitude higher in the Upper Harbor (83.1 parts per million [ppm]) compared to the Lower Harbor (2.82 ppm) and two orders of magnitude higher in the Upper Harbor compared to the Outer Harbor (0.166 ppm). Additionally, total PCB concentrations were more variable in the Upper Harbor (from 0.502 to 934 ppm) compared to the Lower Harbor (from 0.226 to 8.7 ppm) and Outer Harbor (from 0.003 to 0.766 ppm) areas. The Lower Harbor has shown a notable consistently decreasing trend in average PCB concentrations, particularly between the 2009 event and the 2014 event (from 5.1 ppm to 2.8 ppm) and for the Outer Harbor, a slighter decreasing overall trend since the program started in 1993. For benthic infauna, the dominant species in the Upper Harbor were consistent with previous LTM years (*Gemma gemma*, *Mulinia lateralis*, *Streblospio benedicti*, and *Tharyx acutus*) and the diversity continued to increase from north to south with highest diversity observed in the Outer Harbor. The benthic infauna data showed higher species count in all three areas of the harbor than previous years, which has been the trend over the last few LTM surveys (Nelson and Bergen, 2012).

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## Chapter 1. Introduction

This report presents the results of sampling activities performed at the New Bedford Harbor Superfund Site in 2014 in support of the long-term monitoring (LTM) program. Sediment grabs were collected to characterize physical, chemical, and biological conditions in the surface sediment. Sediment data were provided to the United States Army Corps of Engineers New England District (USACE NAE), and the United States Environmental Protection Agency Region 1 (EPA), to assess effects and effectiveness of the New Bedford Harbor Superfund remediation efforts.

The remedial action at the site addresses the removal of approximately 900,000 cubic yards of PCB-contaminated sediment. In order to assess the effectiveness of the New Bedford Harbor Superfund remediation efforts, a long-term environmental monitoring plan has been developed by the EPA's Research Laboratory, Atlantic Ecology Division (AED) in Narragansett, Rhode Island. This plan incorporates an intensive sampling and analysis effort for the purpose of quantifying the long-term environmental effects of reduced PCB levels in the sediments and water column of the New Bedford Harbor estuary as a result of remediation efforts. The five previous sampling rounds for this program include: the "baseline" sampling event conducted in October 1993 (LTM I), a second event (LTM II) conducted immediately after removal of the "hot spot" sediments in October of 1995, a third event conducted in 1999 (LTM III), the fourth round of sampling and analysis conducted in 2004 (LTM IV), a fifth round conducted in 2009 (LTM V) and the sixth round in 2014 (LTM VI). This Summary Report describes the results of the sampling activities conducted under LTM VI sampling and analysis conducted in 2014. This work was performed by Battelle for the USACE NAE. CR Environmental participated in the collection activities as a subcontractor to Battelle.

### 1.1 SITE DESCRIPTION

The New Bedford Harbor Superfund Site (site), located in Bristol County, Massachusetts, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial harbors of New Bedford and Fairhaven and into 17,000 adjacent acres of Buzzards Bay (Figure 1-1).

Industrial and urban development surrounding the harbor has resulted in sediments becoming contaminated with high concentrations of many pollutants, notably polychlorinated biphenyls (PCBs) and heavy metals. PCB concentration gradients within harbor sediments generally decrease from north to south. The source of the PCB contamination has been attributed to two electrical capacitor manufacturing facilities that operated between the 1940s and 1970s. One facility, Aerovox Corporation, is located near the northern boundary of the site, and the other, Cornell-Dubilier Electronics, Inc., is located just south of the New Bedford Harbor hurricane barrier. The two facilities are known to have discharged PCB-laden wastes either directly into the harbor or indirectly via discharges to the City's sewerage system. EPA added New Bedford Harbor to the National Priorities List in 1983 as a designated Superfund Site. USACE NAE is responsible for carrying out the design and implementation of remedial measures at the site through an Interagency Agreement with EPA. The remedy for the site includes the removal of approximately 900,000 cubic yards of PCB-contaminated sediment, followed by offsite and onsite disposal of dredged and excavated sediments.

The site has been divided into three geographic areas: the Upper, Lower and Outer harbors, consistent with geographic features, basin morphology and gradients of contamination (Figure 1-1). The Upper Harbor comprises approximately 187 acres, with current sediment PCB levels ranging from below detection to approximately over 1,000 parts per million (ppm). The boundary between the Upper and Lower Harbor is the Coggeshall Street Bridge; at this point the harbor is constricted to a width of approximately 100 feet. The Lower Harbor comprises approximately 750 acres, with current sediment PCB levels ranging from below detection to over 100 ppm. The boundary between the Lower and Outer Harbor is the 150-foot wide opening in the New Bedford hurricane barrier.



## 1.2 PROJECT OBJECTIVES

The objectives of this study were to collect and analyze the sixth round of samples for the LTM project (LTM VI). The data will be evaluated by EPA in context of the broader LTM program (1993-2014) to assess spatial and temporal chemical and biological trends in sediment and biota and the effects and/or effectiveness of the remedial activities.

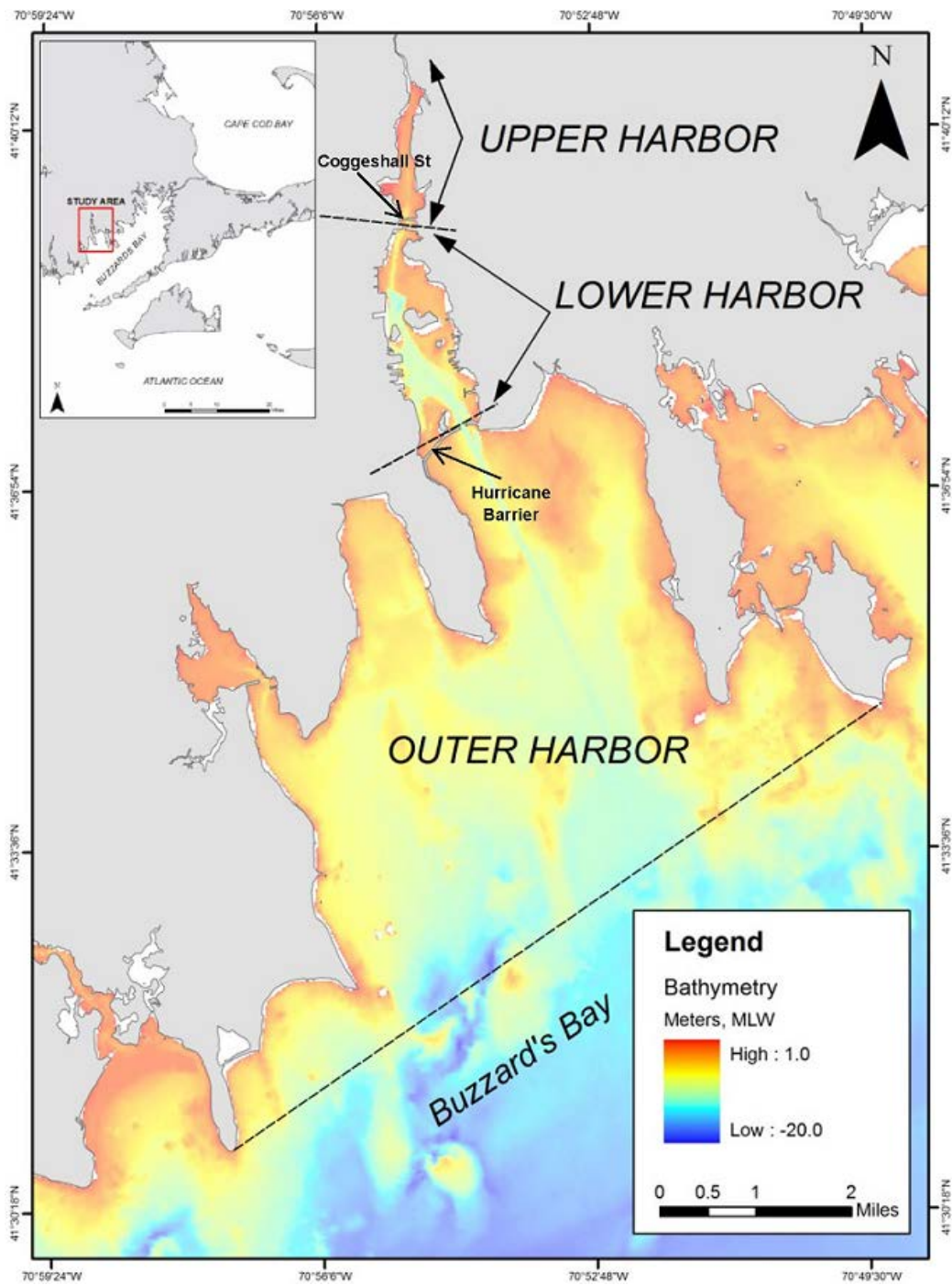


Figure 1-1. Location of the Site in Southeastern Massachusetts

## Chapter 2. Methods

This section describes the methods used to collect and analyze the LTM VI sediment samples for physical, chemical and biological analysis. These methods are described in detail in the approved project Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) (Battelle, 2014a and 2014b).

### 2.1 LTM VI SAMPLING APPROACH

The sampling approach for the LTM VI study included collection, processing and analysis of sediment grabs to determine the physical, chemical and benthic infauna composition of the sediment at each monitoring location. Sediment samples were collected at each of the 79 stations for physical and chemical (grain size, total organic carbon [TOC] content, and PCBs) analyses, as well as biological analysis (i.e., benthic community analysis). In situ water quality measurements (temperature, salinity, turbidity, and dissolved oxygen [DO]) were also collected at each station.

#### 2.1.1 SEDIMENT AND WATER QUALITY SAMPLING

The sampling locations were provided by USACE NAE, and were selected using a systematic, probabilistic sampling design developed by EPA/AED in Narragansett, Rhode Island. This unbiased design allows the three segments of the harbor to be compared spatially and temporally to quantify changes resulting from dredging the contaminated sediments. Sampling was conducted at 79 separate stations located in the three distinct geographical areas of New Bedford Harbor:

- Upper Harbor (Area 1) – Wood Street to the Coggeshall Street Bridge (27 stations)
- Lower Harbor (Area 2)– Coggeshall Street Bridge to Hurricane Barrier (29 stations)
- Outer Harbor (Area 3)– Hurricane Barrier to edge of Fishing Closure Area III (23 stations)

Within each of the three areas a hexagonal sampling grid was established by EPA AED. The sampling grid and station locations are shown in Figure 2-1. Because the areas in each of the three areas become progressively larger, the hexagonal sampling grid is proportionally adjusted to obtain approximately the same number of stations in each area. The hexagons in the Upper Harbor have a radius (center to side mid-point) of 88 meters; in the Lower Harbor the radius of each hexagon is 175 meters, and the hexagons in Outer Harbor have a radius of 793 meters.

The sampling effort followed the methodology detailed in EPA's Environmental Monitoring and Assessment Program (EMAP) (Versar, 1991). Sample collection procedures and grab acceptability were in accordance with Section 6 (Sediments Collection) of the Coastal 2000 Northeast Component: Field Operations Manual (Appendix A). All samples were collected from Battelle's Research Vessel (R/V) *Gale Force*, a 20-foot pontoon boat or from CR Environmental's R/V *Cynthia Lee*, a 42-foot provincial lobster boat.

Navigation was performed using hand-held differential global positioning system (dGPS) units. Samples were taken as close to the center of the hexagon station as possible. In general, these targets were achieved. However, where obstacles, underwater debris, or unacceptable sampling material was present, the sampling was moved to the nearest acceptable location. All sample locations were within the station hexagon.

At each station, water quality measurements of salinity, temperature, turbidity, and DO were taken using a YSI EXO2 multi-parameter water quality sonde. The sonde was manually lowered to a depth of approximately 0.5 to 1 meters from the bottom, where the depth and in situ water quality measurements were recorded by hand on the station log sheets. Sediment samples at each station were collected for the analysis of grain, size, TOC, and PCB congeners. Three benthic biology samples were collected at each station: two for analysis and one for archival purposes.

## CHAPTER 2. METHODS

Grab samples for chemistry analysis were collected at all of the stations using a 0.04-m<sup>2</sup> Van Veen grab sampler. Each grab was inspected for acceptability (i.e., penetration  $\geq$  7 cm, and level, intact sediment). If the grab was deemed unacceptable it was discarded over the opposite side of the vessel to avoid contaminating subsequent samples and the equipment was washed with site water. Once the grab was deemed acceptable, it was visually characterized for sediment type, color, and organisms present on the surface. Appendix B includes photographs of representative grabs collected during the LTM VI study. The top 2 cm were then transferred to a pre-cleaned stainless steel 2-gallon mixing bowl using a pre-cleaned stainless steel spoon avoiding sediment in contact with the sides of the grab. In some cases, multiple grabs were taken to ensure sufficient material was collected for all physical and chemical analyses. The sample was thoroughly homogenized and then subdivided into the sample analysis containers.

The grab samples for benthic community and associated grain size analysis were collected using a 0.04-m<sup>2</sup> Van Veen grab sampler. Triplicate grabs of the top 10 cm were taken at each of the stations for benthic infauna analysis. Once the grab was deemed acceptable, a grain size sample was collected (from the infauna grab) by inserting an open-ended syringe through the entire depth of the core and drawing the sediment out, thereby capturing a small sediment core representing the entire thickness of the grab. The remaining material was transferred to a sieving station and passed through a 0.5 millimeter (mm) sieve. All of material remaining in the sieve was transferred to a clean labeled plastic jar, preserved with 10% formaldehyde, borax, and site water.

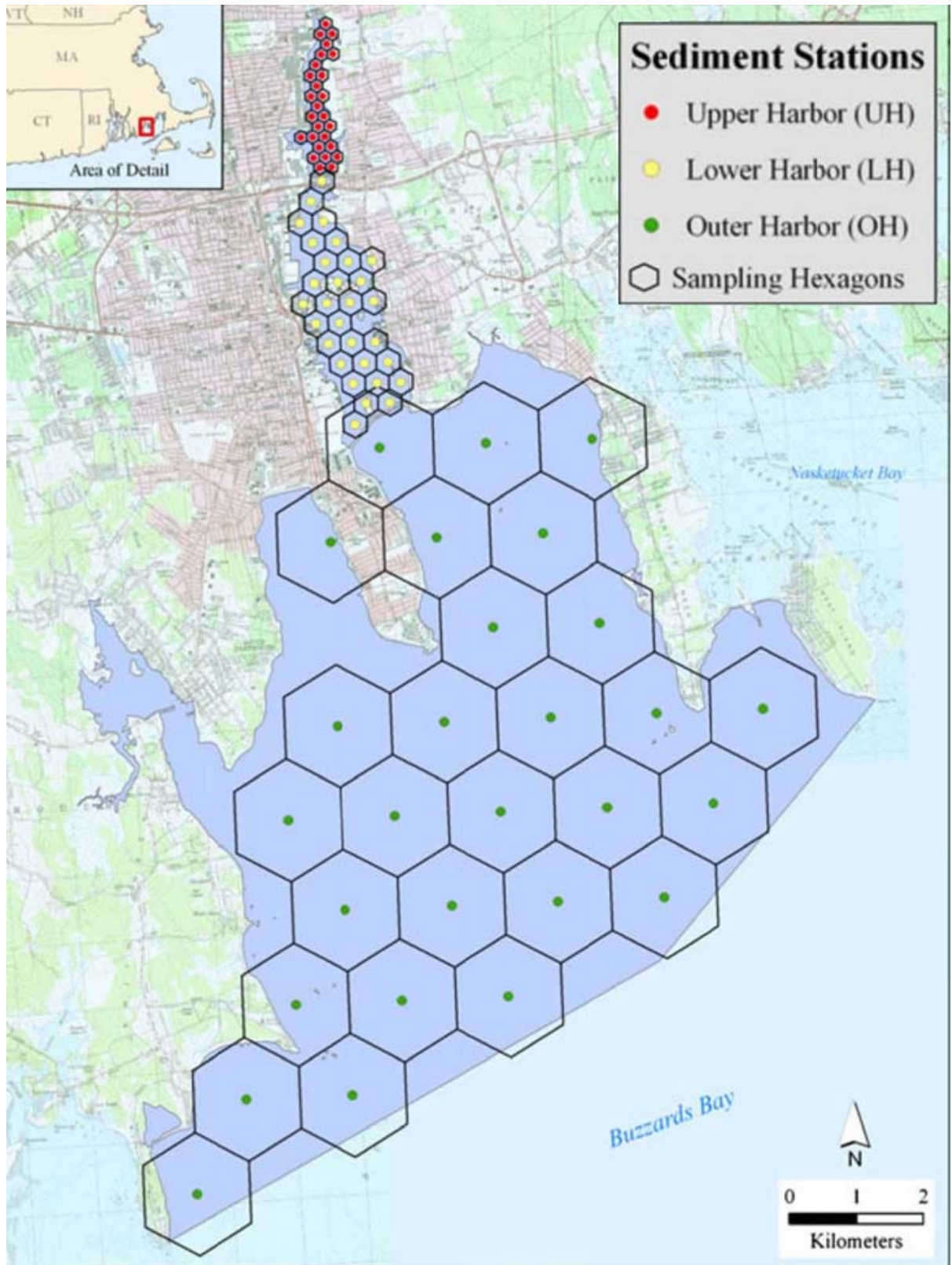
For both the sediment and infauna grab samples, the vessel was moved slightly while on station to avoid resampling the same location. After each station was completed, the grab samplers were decontaminated with soap and water and rinsed with site water. If an oily sheen was present, the grab samplers were wiped with an acetone wipe.

### 2.1.2 FIELD QUALITY CONTROL

The dGPS units (Garmin GPS Map 76CSx) were checked at the beginning and end of each sampling day against an established benchmark at the Sawyer Street facility. The calibration check was recorded on the differential GPS calibration field log, and maintained in the project files (Appendix A). The instrument measures displacement from the benchmark; displacements ranged from 0 to 3 meters with a majority of the checks being less than 1 meter.

Field-based quality control (QC) samples were collected during the sediment sampling event, and included field replicates (i.e., duplicates). Field replicates were collected at the same time, from the same location, using the same techniques. Field replicates were handled, containerized, stored and transported in the same manner as field samples. For sediment grabs, the field replicate represented a second (different) grab collected from co-located locations (i.e., the same location as the parent grab sample). Field replicates (duplicates) were collected at a frequency of approximately one per 20 samples for chemistry samples.





(Hexagons with center dot represent station locations [Nelson & Bergen, 2012].)

Figure 2-1. Map of the New Bedford Harbor LTM IV Sampling Area

## 2.2 LABORATORY TESTING

Laboratory testing was performed to characterize sediment grain size, TOC and PCB concentrations in the sediment surface (top 2 cm) and benthic infauna and associated grain size in the biological active zone (surface, up to 10 cm). Laboratory data generated by the participating laboratories were submitted to the project database.

### 2.2.1 PHYSICAL AND CHEMICAL ANALYSIS

#### 2.2.1.1 GRAIN SIZE

Grain size analysis was performed by GeoTesting Express (GTX; Acton, Massachusetts) following ASTM D422-63. Sediment grain size was determined with phi-classes for sands using wet sieve and silt and clay fractions using a hydrometer. Wet sieving yielded the following phi-classes: gravel (>2.00 mm), very coarse sand (1.00-2.00 mm), coarse sand (0.50-1.00 mm), medium sand (0.25-0.50 mm), fine sand (0.125-0.25 mm) and very fine sand (0.063-0.125 mm). Hydrometer analysis was performed on the portion passing through the #200 sieve to determine silt (1.95 to 62.5 micrometer [ $\mu\text{m}$ ]) and clay (<1.95  $\mu\text{m}$ ) content. Results were reported as percent retained within each fraction.

#### 2.2.1.2 TOTAL ORGANIC CARBON

TOC analysis was performed by Alpha Analytical (Mansfield, Massachusetts) following EPA 9060, and each sample was analyzed in duplicate. An aliquot of sample was homogenized, pre-treated with phosphoric acid and heated to 103-105°C to convert the inorganic carbon prior to analysis. Organic carbon was measured using combustion and a carbonaceous analyzer. The sample, of approximately 2 to 5 mg, was oxidized in a pure oxygen environment, introduced into a furnace by a 60-slot Autosampler, and then combusted. The carrier gas (Ox) was combined with the carbon content of the combusted sample to form CO<sub>2</sub>. Elements, such as halogens and sulfur, were removed by scrubbing reagents in the combustion zone. A thermal conductivity detector then measured the CO<sub>2</sub> content. The amount of CO<sub>2</sub> derived from a sample is directly proportional to the concentration of organic carbonaceous material in the sample. Results were reported in units of percent dry weight.

#### 2.2.1.3 NOAA 18 PCB CONGENERS BY GC/ECD

PCB analysis for the 18 National Oceanic and Atmospheric Administration (NOAA) congeners analyzed for the National Status and Trends program was performed by Battelle (Norwell, Massachusetts). Prior to extraction, samples were air dried for approximately one to three days (depending on moisture content) and a percent moisture determination was performed on the air-dried sediment to verify that percent solids in the samples were >50% and to report data on a dry weight basis.

For extraction and analysis, approximately 1 to 10 grams of the well mixed, air-dried sample was spiked with surrogate internal standards (SIS) and extracted three times with methylene chloride. The combined sample extract was dried over anhydrous sodium sulfate, concentrated and cleaned using florisil to isolate the PCBs and activated copper to remove sulfur. The final extracts were concentrated, fortified with recovery internal standards (RIS), and submitted for analysis.

PCB analysis was performed by gas chromatography/electron capture detection (GC/ECD) using dual column confirmation. An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed before and after every 10 samples or at the beginning and end of every 24-hour period in which samples were analyzed, whichever was shorter. Concentrations of target congeners were calculated versus RIS using the average response factors generated from the initial calibration. Positive congener results were confirmed by a secondary column confirmation analysis with the higher of the two results reported, unless analyst discretion required otherwise (e.g., the result without an interference signal was reported). Congener results that were greater than 40% different between the first and second column analysis were 'p' qualified.

## CHAPTER 2. METHODS

Sample results were reported by the laboratory in nanograms per gram (ng/g) dry weight to three significant figures. All data were reported as surrogate corrected to correct for extraction efficiency. Total PCB was calculated as the sum of the detected NOAA 18 congeners (a value of ½ the reporting limit [RL] was used for non-detects). Total PCB results were converted to ppm basis (ppm = ng/g result divided by 1,000).

### 2.2.2 BIOLOGICAL ANALYSIS

Benthic biology sorting, enumeration, and identification were performed by Barry Vittor & Associates in Mobile, Alabama. Biological laboratory procedures were carried out according to protocols established in EMAP Laboratory Methods Manual – Estuaries Volume 1 – *Biological and Physical Analyses* (EPA, 1995) Section 5. Two of three replicate grab samples collected at each station were analyzed taxonomically. The third sample was archived.

### 2.2.3 LABORATORY QUALITY CONTROL

A routine set of laboratory-based QC samples was prepared with the LTM VI sediment samples to monitor accuracy and precision. For PCB congener analysis, QC samples included a procedural blank, laboratory control sample (LCS), LCS duplicate (LCSD), a matrix spike (MS), a matrix spike duplicate (MSD), and a standard reference material (SRM) with each batch of 20 or fewer samples. For TOC, each sample was analyzed in duplicate and each set of 20 or fewer samples included a SRM. For sediment grain size, one laboratory duplicate was analyzed with each set of 20 or fewer samples. For benthic infauna, QC measures followed the EMAP protocols and included re-sorting and re-identification of randomly selected samples, and validation of taxonomic/enumeration data entries.

QC sample results were evaluated against the project measurement performance criteria (MPC). Data that did not meet the MPC were evaluated to determine the impact(s) on data quality, and corrective action was taken as appropriate.

### 2.2.4 DATA VALIDATION

Data validation was performed by Battelle. PCB congener results for the LTM VI sediment samples received data validation at the Tier 1 Stage 2A level and sediment grain size and TOC data received Tier I Stage 1 level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

Benthic infauna data did not receive external data validation.

## Chapter 3. Results

This section summarizes results from the sampling and physical, chemical and biological testing of the LTM VI sediment samples.

### 3.1 FIELD MONITORING SUMMARY

Sediment samples were collected at each of the 79 stations for physical (grain size and TOC) and chemical (PCBs) analyses as well as for benthic community analysis. In situ field measurements (temperature, salinity, turbidity, and DO) were also collected at each station (see Appendix A). The field survey report which summarizes the field sampling activities and provides a copy of all field logs is provided in Appendix A.

#### 3.1.1 WATER QUALITY

The *in situ* water quality measurements were taken prior to the collection of each sediment sample. The parameters collected included salinity, temperature, turbidity, and DO, and are summarized in Table 3 of Appendix A (Field Report). The sampling water depth ranged from the shallow stations (0.1 to 12.8 ft) in the Upper Harbor, to moderate depths in the Lower and Outer Harbors (0.3 to 37.9 ft). As expected, salinity and DO followed trends along a north/south gradient. In the upper reaches of the harbor, where the Acushnet river enters the system, salinities were lower than in other areas (mean = 30.2 parts per thousand [‰]). Upper Harbor salinities ranged from 29.3 to 30.7‰. The range of salinities in the Lower Harbor was 30.5 to 33.3‰ with a mean of 32.8‰. Outer Harbor salinity measurements were uniform, with a mean of 33.5‰. In the Upper Harbor, DO values ranged from 5.0 to 7.54 milligrams per liter (mg/L), with a mean of 5.9 mg/L. DO ranged from 5.59 to 6.88 mg/L in the Lower Harbor, with a mean of 6.18 mg/L. In the Outer Harbor, DO ranged from 6.16 to 8.43 mg/L with a mean of 7.08 mg/L. Temperature was consistent throughout the study area with a mean of 19.56 °C.

### 3.2 LABORATORY TESTING

Statistical summaries of the LTM VI sediment data are provided in Table 3-1. The statistical summaries include the following information for each test parameter by geographic region of the harbor: number of samples, detection frequency, minimum concentration, central tendency (arithmetic average and median), standard deviation, and location of the maximum detected value. Complete test results, along with results from the analysis of field- and laboratory-based QC samples, are provided in Appendices C, D, and E.

#### 3.2.1 GRAIN SIZE DISTRIBUTION OF THE SEDIMENT SURFACE

Sediment grain size distribution was measured in four samples from each station. One sample was associated with the grab samples analyzed for chemistry, while the remaining three were associated with the grab samples collected for benthic infauna analyses. The grain size results reported in Table 3-1 are from the samples associated with the chemistry grab (top 2 cm). Complete grain size results for chemistry and benthic grabs are provided in Appendix C. Grain size data for the chemistry grab sample are presented here.

Surface sediments collected from the three regions of New Bedford Harbor had variable grain size distributions, ranging from sand to silt. Surface sediments from the Upper Harbor were generally more fine-grained (Figure 3-1), with mean values of 61.3% fines (silt + clay), 32.7% sand, and 6.67% gravel (Table 3-1). The Lower Harbor was more evenly distributed with mean values of 50.7% fines, 42% sand and 7.2% gravel. The Outer Harbor was characterized more as a sandy environment with the mean values of 50.0% fines, 43.1% sand, and 6.96% gravel.



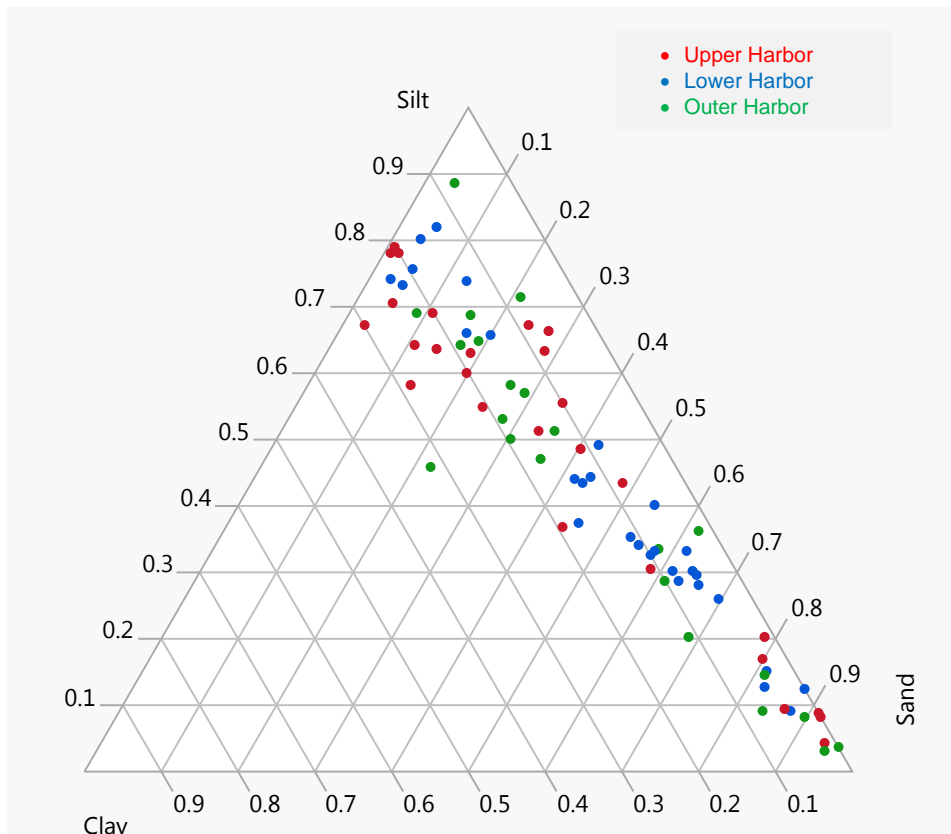


Figure 3-1. Grain Size Distribution of Chemistry Samples Collected during LTM VI in New Bedford Harbor (top 2 cm).

### 3.2.2 TOTAL ORGANIC CARBON OF THE SEDIMENT SURFACE

TOC levels ranged from 0.07% to 8.4% in surface (top 2 cm) sediment at New Bedford Harbor (Table 3-1). TOC levels were higher on average in the Upper Harbor (mean = 4.76%), and decreased in a north-to-south direction (means of 2.69% and 1.41% in the Lower and Outer Harbors, respectively) (Table 3-1). The highest TOC level was measured at Station 108 located in the northern region of the Upper Harbor and the lowest level was measured at Station 318, located in the Outer Harbor.

### 3.2.3 PCB CHARACTERIZATION OF THE SEDIMENT SURFACE

Total PCB concentrations ranged from 0.003 to 934 ppm in surface sediment (top 2 cm) throughout New Bedford Harbor (Table 3-1). Table 3-2 presents the total PCB values for all stations sampled during LTM VI. Consistent with past LTM studies (Nelson and Bergen, 2012), the highest concentrations were measured in the Upper Harbor, and concentrations decreased in a north-to-south direction (Lower to Outer Harbor). The average total PCB concentration in the Upper Harbor (arithmetic average of total PCB measured in all 27 Upper Harbor stations) was 83.1 ppm, which is one order of magnitude higher than the Lower Harbor average concentration (2.82 ppm) and two orders of magnitude higher than the Outer Harbor average concentration (0.166 ppm) (Table 3-1). The highest concentration of total PCB was measured at Station 115, located in the northeast region of the Upper Harbor and directly across from the former Aerovox facility (Figure 3-3).

Within each region of the harbor, the widest range of total PCB concentrations was observed in the Upper Harbor (0.502 to 934 ppm; Table 3-1, Figure 3-3). The Lower Harbor had a more narrow range of total

## CHAPTER 3. RESULTS

PCBs concentrations (0.226 to 8.70 ppm; Table 3-1, Figure 3-4) and the Outer Harbor had the smallest range (0.003 to 0.766 ppm; Table 3-1). The lowest concentrations of total PCBs were measured in Outer Harbor sediments (Figure 3-5).

Total PCB concentrations were compared with published sediment data quality guidelines, effects range-low (ER-L, 0.0227 ppm) and effects range-medium (ER-M, 0.18 ppm) (Long et al., 1995). All samples in the Upper and Lower Harbors had total PCB concentrations greater than the ER-M. Of the 23 sampling locations in the Outer Harbor, nine stations had total PCB concentrations less than the ER-L and seven were below the ER-M but above the ER-L. The remaining seven Outer Harbor stations were above the ER-M. Table 3-2 shows the total PCB values for all stations sampled during LTM VI. The samples that were below the ER-L are bolded and the stations that were between the ER-L and ER-M level are italicized.

**Table 3-1. Total Organic Carbon, Grain Size, and PCB Summary Results for New Bedford Harbor LTM VI Survey**

| Area         | Parameter              | Units | No. Obs. | % Detected | MIN   | Mean  | Std. Dev. | Median | MAX   | Location of MAX (Station ID) |
|--------------|------------------------|-------|----------|------------|-------|-------|-----------|--------|-------|------------------------------|
| Upper Harbor | Gravel                 | %     | 27       | 100        | 0.00  | 6.67  | 9.04      | 3.00   | 30.0  | 154-14LTM                    |
|              | Sand <sup>1</sup>      | %     | 27       | 100        | 1.00  | 32.7  | 26.4      | 26.0   | 84.0  | 151-14LTM                    |
|              | Fines <sup>2</sup>     | %     | 27       | 100        | 4.00  | 61.3  | 31.8      | 68.0   | 99.0  | 111-14LTM;<br>138-14LTM      |
| Lower Harbor | Gravel                 | %     | 29       | 100        | 0.00  | 7.2   | 11.1      | 3.00   | 44.0  | 218-14LTM;<br>333-14LTM      |
|              | Sand <sup>1</sup>      | %     | 29       | 100        | 3.00  | 42.0  | 23.4      | 46.0   | 86.0  | 208-14LTM                    |
|              | Fines <sup>2</sup>     | %     | 29       | 100        | 7.00  | 50.7  | 28.2      | 42.0   | 97.0  | 235-14LTM                    |
| Outer Harbor | Gravel                 | %     | 23       | 100        | 0.00  | 6.96  | 11.8      | 2.00   | 44.0  | 333-14LTM                    |
|              | Sand <sup>1</sup>      | %     | 23       | 100        | 4.00  | 43.1  | 28.5      | 35.0   | 92.0  | 306-14LTM;<br>311-14LTM      |
|              | Fines <sup>2</sup>     | %     | 23       | 100        | 3.00  | 50.0  | 30.9      | 63.0   | 92.0  | 323-14LTM                    |
| Upper Harbor | TOC                    | %     | 27       | 100        | 0.26  | 4.76  | 2.49      | 5.14   | 8.38  | 108-14LTM                    |
| Lower Harbor |                        | %     | 29       | 100        | 0.38  | 2.69  | 1.49      | 2.35   | 5.71  | 230-14LTM                    |
| Outer Harbor |                        | %     | 23       | 100        | 0.07  | 1.41  | 0.98      | 1.38   | 3.49  | 334-14LTM                    |
| Upper Harbor | Total PCB <sup>3</sup> | ppm   | 27       | NA         | 0.502 | 83.1  | 184       | 24.6   | 934   | 115-14LTM                    |
| Lower Harbor |                        | ppm   | 29       | NA         | 0.226 | 2.82  | 2.34      | 1.98   | 8.70  | 230-14LTM                    |
| Outer Harbor |                        | ppm   | 23       | NA         | 0.003 | 0.166 | 0.222     | 0.055  | 0.766 | 304-14LTM                    |

<sup>1</sup> Sand is a sum of all sand fractions (very coarse, coarse, medium, fine, very fine).

<sup>2</sup> Fines is a sum of the silts and clays.

<sup>3</sup> Total PCB is the sum of 18 NS&T congeners using surrogate corrected data and ½ the RL for non-detects.

**Table 3-2. Total PCB Values for All Stations with Values below the ER-L and ER-M Denoted**

| Upper Harbor |                  | Lower Harbor |                  | Outer Harbor     |                  |
|--------------|------------------|--------------|------------------|------------------|------------------|
| Station ID   | Total PCBs (ppm) | Station ID   | Total PCBs (ppm) | Station ID       | Total PCBs (ppm) |
| 105-14LTM    | 69.7             | 202-14LTM    | 2.55             | 304-14LTM        | 0.766            |
| 108-14LTM    | 11.4             | 204-14LTM    | 5.79             | <b>306-14LTM</b> | <b>0.003</b>     |
| 109-14LTM    | 139.3            | 207-14LTM    | 3.76             | 309-14LTM        | 0.384            |
| 111-14LTM    | 113.5            | 208-14LTM    | 1.02             | 310-14LTM        | 0.441            |
| 114-14LTM    | 87.4             | 211-14LTM    | 2.33             | <b>311-14LTM</b> | <b>0.015</b>     |
| 115-14LTM    | 934              | 212-14LTM    | 4.34             | 317-14LTM        | 0.644            |
| 117-14LTM    | 333              | 216-14LTM    | 1.02             | <b>318-14LTM</b> | <b>0.012</b>     |
| 120-14LTM    | 28.1             | 217-14LTM    | 7.27             | 323-14LTM        | 0.187            |
| 121-14LTM    | 74.3             | 218-14LTM    | 0.474            | 324-14LTM        | 0.457            |
| 123-14LTM    | 48.7             | 220-14LTM    | 2.77             | 325-14LTM        | 0.270            |
| 125-14LTM    | 40.9             | 221-14LTM    | 1.52             | <i>331-14LTM</i> | <i>0.120</i>     |
| 126-14LTM    | 2.88             | 222-14LTM    | 5.90             | <b>332-14LTM</b> | <b>0.022</b>     |
| 128-14LTM    | 126              | 224-14LTM    | 3.99             | <b>333-14LTM</b> | <b>0.019</b>     |
| 130-14LTM    | 47.6             | 225-14LTM    | 2.03             | <i>334-14LTM</i> | <i>0.096</i>     |
| 131-14LTM    | 23.5             | 226-14LTM    | 5.93             | <i>335-14LTM</i> | <i>0.125</i>     |
| 134-14LTM    | 59.1             | 227-14LTM    | 1.98             | <i>338-14LTM</i> | <i>0.071</i>     |
| 135-14LTM    | 0.498            | 230-14LTM    | 8.70             | <i>339-14LTM</i> | <i>0.055</i>     |
| 139-14LTM    | 17.7             | 231-14LTM    | 1.56             | <b>340-14LTM</b> | <b>0.019</b>     |
| 138-14LTM    | 24.6             | 235-14LTM    | 1.21             | <i>341-14LTM</i> | <i>0.024</i>     |
| 140-14LTM    | 22.0             | 236-14LTM    | 3.53             | <i>345-14LTM</i> | <i>0.052</i>     |
| 146-14LTM    | 7.84             | 237-14LTM    | 0.915            | <b>346-14LTM</b> | <b>0.004</b>     |
| 147-14LTM    | 3.05             | 240-14LTM    | 6.76             | <b>349-14LTM</b> | <b>0.010</b>     |
| 150-14LTM    | 11.4             | 241-14LTM    | 0.993            | <b>352-14LTM</b> | <b>0.018</b>     |
| 151-14LTM    | 2.64             | 242-14LTM    | 1.12             |                  |                  |
| 152-14LTM    | 12.7             | 245-14LTM    | 1.13             |                  |                  |
| 154-14LTM    | 0.574            | 247-14LTM    | 1.74             |                  |                  |
| 155-14LTM    | 0.793            | 249-14LTM    | 0.923            |                  |                  |
|              |                  | 250-14LTM    | 0.355            |                  |                  |
|              |                  | 253-14LTM    | 0.226            |                  |                  |

**Bolded** values have values below the ER-L (0.0227 ppm); *Italicized* items are between the ER-L (0.0227 ppm) and ER-M (0.18 ppm).



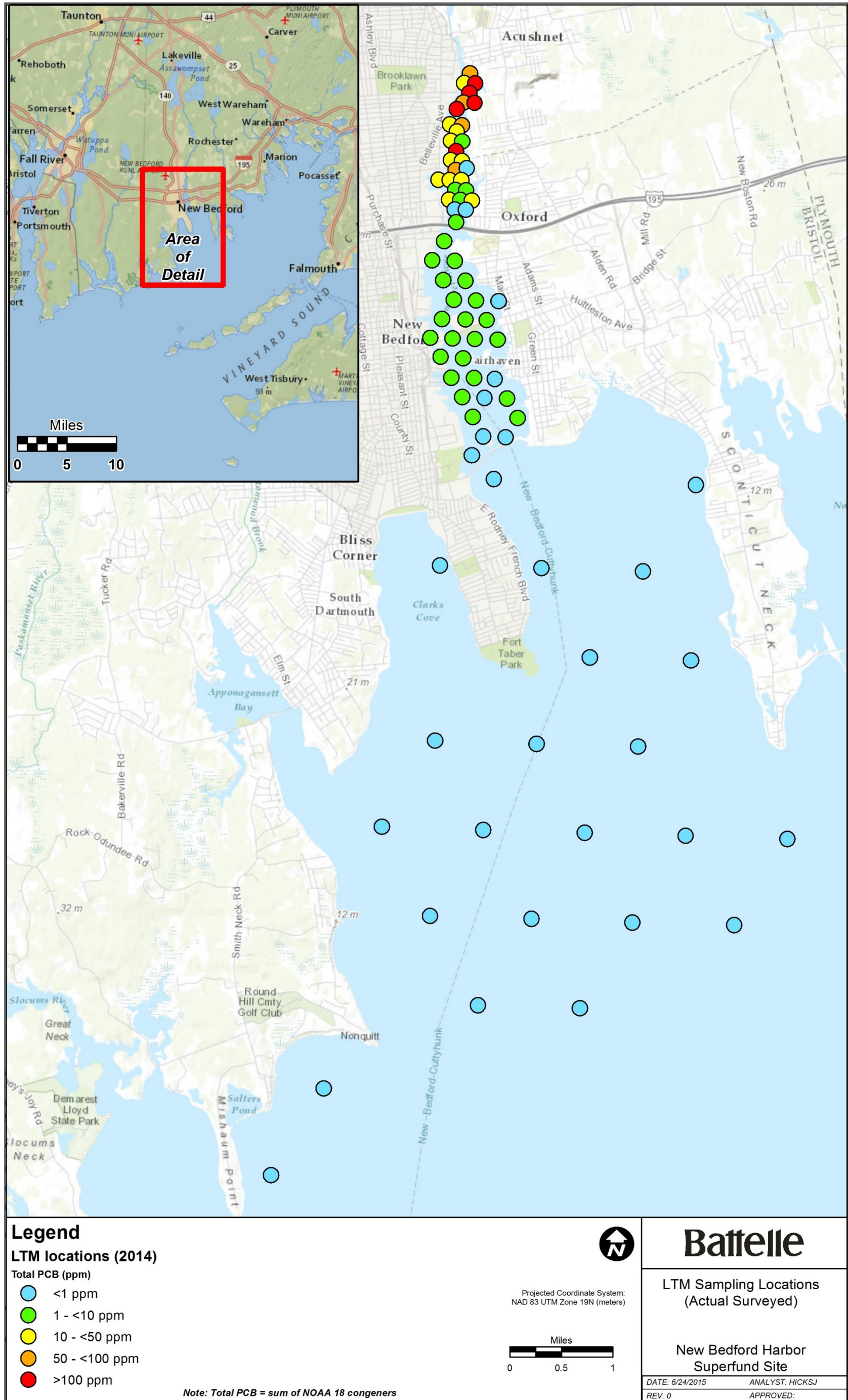


Figure 3-2. Total PCB Concentrations (ppm) in LTM VI Surface (top 2 cm) Sediment Samples at New Bedford Harbor



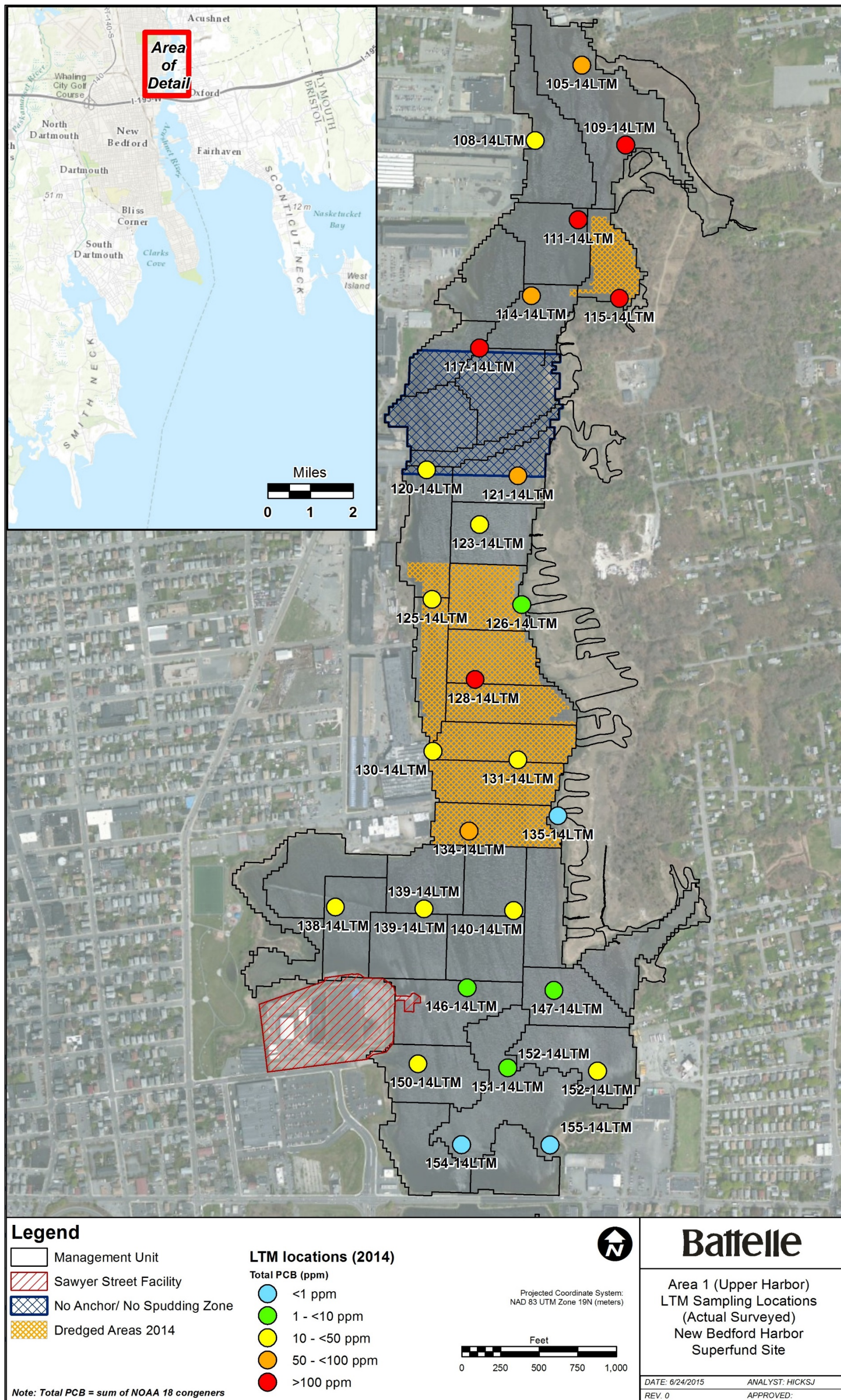


Figure 3-3. Total PCB Concentrations (ppm) in LTM VI Surface (top 2 cm) Sediment Samples in the Upper Harbor



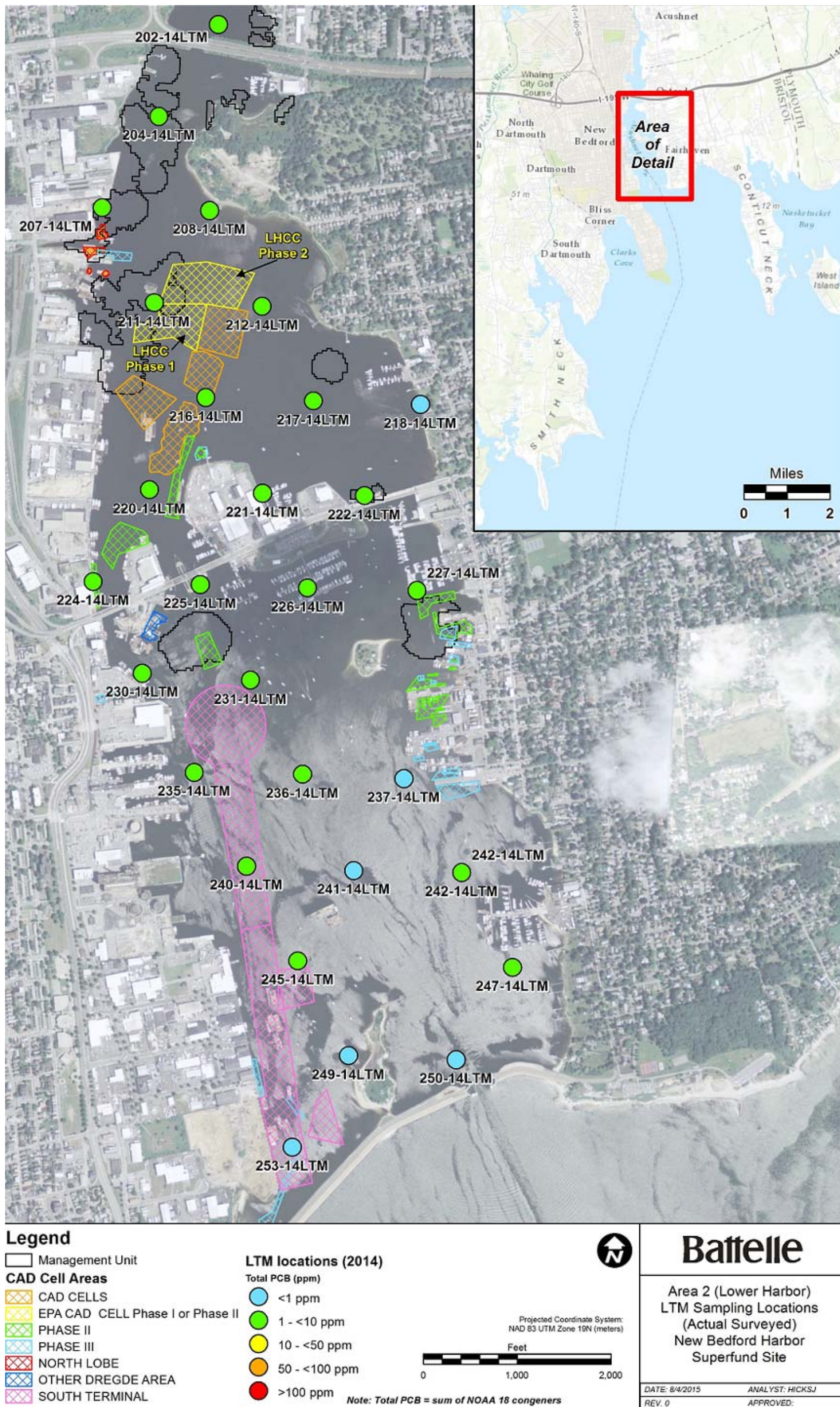


Figure 3-4. Total PCB Concentrations (ppm) in LTM VI Surface (top 2 cm) Sediment Samples collected in the Lower Harbor



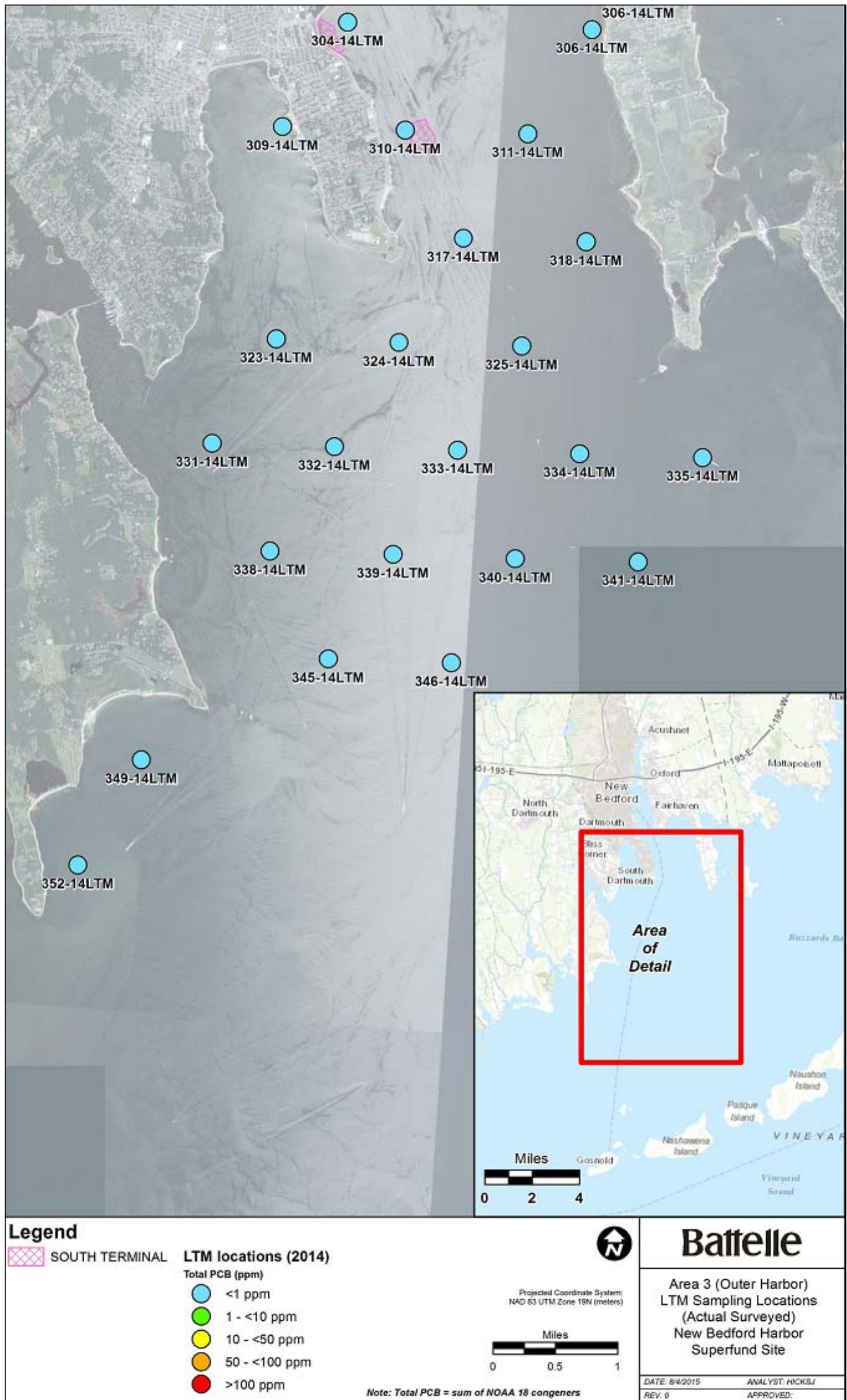


Figure 3-5. Total PCB Concentrations (ppm) in LTM VI Surface (top 2 cm) Sediment Samples in the Outer Harbor

### 3.2.4 BENTHIC INFAUNA OF THE SEDIMENT SURFACE

Laboratory analysis of the benthic samples included identification of all species collected. Following EMAP protocols, oligochaetes were not identified to the species level. Oligochaetes are included in both density and species richness totals. In addition, when juvenile or damaged specimens could not be identified to species, the category “sp.” was used. If no species were identified in the genus to which these specimens belong within any given Harbor area, then the taxon is included in discussions of both density and species richness for that area and is included in the species list. If species were identified (and especially if more than one species was identified) in the genus in a given Harbor area, then the taxon was considered as contributing to the total density of infaunal organisms, but was not included in discussions of species richness nor in the species list.

Table 3-3 shows the number of taxa and total count (sum of organisms collected in all replicates) in each of the three areas sampled. There were clear gradients of increasing species richness and decreasing counts from the Upper to the Outer Harbor. Although the number of stations sampled differed slightly among the areas, the differences in species richness and number of individuals (count) were large enough to dismiss the sampling effort as a major factor. Overall, the Lower Harbor had only 20% of the individuals but nearly 30% more species than the Upper Harbor and the Outer Harbor had only 16% of the individuals but almost twice as many species as the Lower Harbor.

**Table 3-3. Species Richness and Total Density in the Three Areas of New Bedford Harbor**

|  | Area  |       |       |
|--|-------|-------|-------|
|  | Upper | Lower | Outer |
| Mean Number of Taxa per station        | 23.8  | 22.1  | 40.6  |
| Mean Number of Individuals per Station | 3197  | 956   | 916   |
| Species Richness                       | 139   | 175   | 273   |
| Total Count                            | 86318 | 27715 | 21497 |

#### 3.2.4.1 UPPER HARBOR (AREA 1)

Stations in the Upper Harbor were characterized by intermediate species richness (as measured by number of taxa; ranging from 17 to 46 unique taxa per station and averaging 23.8) and high densities, particularly of the dominant organisms (Appendix F). Table 3-4 shows the top dominant species (those contributing  $\geq 1\%$  of total infaunal count), their total count in all Upper Harbor replicates combined, and the number of stations within the Upper Harbor where they occurred.

Three species had greater than 10% dominance in the Upper Harbor, including *Gemma gemma* followed by *Mulinia lateralis* and *Streblospio benedicti*. *Gemma gemma* was the most abundant species (40.0%), and was found at 24 of the 27 Upper Harbor locations. The highest station count (17,925), 51.8% of the individuals, was found at Station 117. *Mulinia lateralis*, a small opportunistic bivalve, was the second most dominant organism (14.4%) and found at 21 of the 27 Upper Harbor stations. The third most abundant species in the Upper Harbor (12.8%) was *Streblospio benedicti*, a small polychaete relatively tolerant to elevated levels of sediment organics (Reish, 1979), a trait that contributes to its success as a pioneering, opportunistic species. It was found in 26 of the 27 Upper Harbor locations. Of the 11,062 individuals found in the Upper Harbor, 36.5% were found at three stations (Stations 111, 130 and 138).

**Table 3-4. Dominant Species in NBH Area 1 (Upper Harbor)**

| Species                           | Total Count | Percent Dominance | Number of Stations |
|-----------------------------------|-------------|-------------------|--------------------|
| <i>Podarke obscura</i>            | 885         | 1.0%              | 24                 |
| <i>Pectinaria gouldi</i>          | 1024        | 1.2%              | 25                 |
| <i>Polydora cornuta</i>           | 1310        | 1.5%              | 23                 |
| <i>Hypereteone fauchaldi</i>      | 1701        | 2.0%              | 26                 |
| <i>Capitella capitata complex</i> | 1720        | 2.0%              | 16                 |
| <i>Leitoscoloplos sp.</i>         | 2182        | 2.5%              | 26                 |
| <i>Hydrobia sp.</i>               | 2269        | 2.6%              | 8                  |
| <i>Hydrobia totteni</i>           | 2876        | 3.3%              | 8                  |
| <i>Tubificidae spp.</i>           | 3207        | 3.7%              | 26                 |
| <i>Tharyx acutus</i>              | 6158        | 7.1%              | 21                 |
| <i>Streblospio benedicti</i>      | 11062       | 12.8%             | 26                 |
| <i>Mulinia lateralis</i>          | 12447       | 14.4%             | 21                 |
| <i>Gemma gemma</i>                | 34564       | 40.0%             | 24                 |

### 3.2.4.2 LOWER HARBOR (AREA 2)

Stations in the Lower Harbor were characterized by intermediate species richness (ranging from 6 to 59 taxa per station, averaging 22.1) and intermediate counts. Table 3-5 shows the top dominant species, their total count in all Lower Harbor replicates combined, and the number of stations within the Lower Harbor where they occurred.

Three species had greater than 10% dominance in the Lower Harbor, including *Tharyx acutus*, *Tubificidae spp.* and *Streblospio benedicti*. *Tharyx acutus* was the most abundant species (15.0%) in the Lower Harbor, occurring at a higher percentage but with lower numbers than in Upper Harbor. It was found at 19 of the 29 Lower Harbor Stations with 96.7% of the individuals present in just six stations (Stations 207, 216, 218, 230, 237, 250) with the highest count (1159) at Station 218. The clitellate oligochaete *Tubificidae spp.* was the second most dominant organism (13.8%) and found in 24 of the 29 stations. The highest count (1,786), which is 46.8% of the total individuals in the Lower Harbor, was found at Station 224. The third most abundant species in the Lower Harbor, as well as the Upper Harbor, was *Streblospio benedicti*. It was found in 26 of the 29 stations at a similar percentage, 12.6%, but a much smaller number of individuals relative to the Upper Harbor.

**Table 3-5. Dominant Species in NBH Area 2 (Lower Harbor)**

| <b>Species</b>                     | <b>Total Count</b> | <b>Percent Dominance</b> | <b>Number of Stations</b> |
|------------------------------------|--------------------|--------------------------|---------------------------|
| <i>Gemma gemma</i>                 | 323                | 1.2%                     | 5                         |
| <i>Cylichna oryza</i>              | 366                | 1.3%                     | 3                         |
| <i>Ampelisca abdita</i>            | 513                | 1.9%                     | 12                        |
| <i>Polydora cornuta</i>            | 527                | 1.9%                     | 18                        |
| <i>Leitoscoloplos robustus</i>     | 628                | 2.3%                     | 8                         |
| <i>Hypereteone fauchaldi</i>       | 654                | 2.4%                     | 25                        |
| <i>Macoma tenta</i>                | 707                | 2.6%                     | 17                        |
| <i>Ampelisca sp.</i>               | 739                | 2.7%                     | 16                        |
| <i>Pectinaria gouldi</i>           | 905                | 3.3%                     | 21                        |
| <i>Leitoscoloplos sp.</i>          | 1218               | 4.4%                     | 24                        |
| <i>Mediomastus ambiseta</i>        | 1293               | 4.7%                     | 21                        |
| <i>Capitella capitata complex</i>  | 1352               | 4.9%                     | 21                        |
| <i>Grandidierella bonnieroides</i> | 1482               | 5.3%                     | 20                        |
| <i>Mulinia lateralis</i>           | 1843               | 6.6%                     | 23                        |
| <i>Streblospio benedicti</i>       | 3503               | 12.6%                    | 26                        |
| <i>Tubificidae spp.</i>            | 3814               | 13.8%                    | 24                        |
| <i>Tharyx acutus</i>               | 4167               | 15.0%                    | 19                        |

### 3.2.4.3 OUTER HARBOR (AREA 3)

Stations in the Outer Harbor were characterized by the highest species richness (ranging from 17 to 104 taxa per station and averaging 40.6) and the lowest counts of all three areas. The relatively low number of widespread taxa exemplifies the greater complexity of the infaunal community in the Outer Harbor. Table 3-6 shows the top dominant species and their total count in all Area 3 replicates combined.

*Macoma tenta* and *Tharyx acutus* were the top two most abundant taxa, each comprising 10% or 11%, respectively, of the total abundance. *Macoma tenta* was found at 14 of the 23 stations and at four of these stations (334, 338, 339, 340) the counts were between 333 and 378 individuals per station. The cirratulid *Tharyx acutus* also reached its highest abundance at this station (11.2%) and 2,407 individuals were counted. It was present in 16 of the 23 Outer Harbor stations with 94% of the individuals found at just four stations (304, 333, 335, and 352). It was most abundant at Station 352 with a count of 896 individuals, which is 37.2% of the total individuals counted in the Outer Harbor.



**Table 3-6. Dominant Species in NBH Area 3 (Outer Harbor)**

| Species                               | Total Count | Percent Domiance | Number of Stations |
|---------------------------------------|-------------|------------------|--------------------|
| <i>Mediomastus</i> spp.               | 232         | 1.1%             | 4                  |
| <i>Scolelepis texana</i>              | 242         | 1.1%             | 11                 |
| <i>Nemertinea</i>                     | 250         | 1.2%             | 21                 |
| <i>Crepidula plana</i>                | 251         | 1.2%             | 9                  |
| <i>Nucula proxima</i>                 | 276         | 1.3%             | 17                 |
| <i>Anadara transversa</i>             | 280         | 1.3%             | 12                 |
| <i>Prionospio (minuspio) perkinsi</i> | 296         | 1.4%             | 14                 |
| <i>Globosolembos smithi</i>           | 311         | 1.4%             | 8                  |
| <i>Nephtys incisa</i>                 | 368         | 1.7%             | 12                 |
| <i>Mitrella lunata</i>                | 385         | 1.8%             | 18                 |
| <i>Boonea seminuda</i>                | 688         | 3.2%             | 11                 |
| <i>Acteocina canaliculata</i>         | 828         | 3.9%             | 15                 |
| <i>Myodocopa</i>                      | 871         | 4.1%             | 17                 |
| <i>Mediomastus ambiseta</i>           | 987         | 4.6%             | 18                 |
| <i>Cylichna oryza</i>                 | 1007        | 4.7%             | 12                 |
| <i>Polygordius</i> sp. a              | 1078        | 5.0%             | 5                  |
| <i>Tubificidae</i> spp.               | 1116        | 5.2%             | 20                 |
| <i>Crepidula fornicata</i>            | 1467        | 6.8%             | 9                  |
| <i>Macoma tenta</i>                   | 2159        | 10.0%            | 14                 |
| <i>Tharyx acutus</i>                  | 2407        | 11.2%            | 16                 |

### 3.3 QUALITY CONTROL

Grain size, TOC, total PCB, and benthic infauna results from the field- and laboratory-based QC samples are reported with the laboratory data packages provided in Appendices C through F. Results from the analysis of the field- and laboratory-based QC samples were evaluated against the MPC as described in Worksheet #28 of the QAPP (Battelle, 2014b) to assess accuracy and precision.

#### 3.3.1 FIELD REPLICATES

Four field replicates (a second grab collected at a given station) were collected, resulting in four field replicates for the LTM VI sampling event. The relative percent difference (RPD) between PCB and TOC data met MPC criteria (<50% RPD) (Table 3-7). Field replicates of the chemistry grab were not subsampled for grain size distribution because benthic infauna grabs were sampled in triplicate and each was subsampled for grain size distribution analysis.

**Table 3-7. Total PCB and TOC in Field Replicates Results (Surface top 2 cm)**

| Station | Total PCB<br>(ppm dry weight) |                 | RPD  | TOC (%)  |                 | RPD  |
|---------|-------------------------------|-----------------|------|----------|-----------------|------|
|         | Original                      | Field Replicate |      | Original | Field Replicate |      |
| 139     | 24.6                          | 26.0            | 2.63 | 5.76     | 6.37            | 6.82 |
| 152     | 12.8                          | 11.0            | 10.8 | 4.72     | 3.98            | 11.0 |
| 242     | 1.12                          | 1.10            | 0.00 | 1.54     | 2.26            | 27.0 |
| 306     | 0.003                         | 0.002           | 4.00 | 0.076    | 0.068           | 7.27 |

### 3.3.2 LABORATORY QUALITY CONTROL SAMPLES

The review of the laboratory QC data for the grain size, TOC, and total PCB analyses is documented in quality assurance (QA)/QC narratives, which are provided with the sample data in Appendices C through F.

The grain size fractions reported were gravel, very coarse sand, coarse sand, medium sand, fine sand, very fine sand, silt, and clay. The precision between grain size fraction results, for laboratory duplicates and field replicates, frequently met the QAPP MPC for the fine grained fractions (i.e., silt, clay and fine sand) but was more variable for the coarser fractions (e.g., gravel, very coarse sand) that were measured at levels closer to the detection limits.

For TOC, the laboratory QC data met the MPC, indicating that the analytical methods were in control and data quality is acceptable. For example, the method blanks had no detects. The RPD for the lab duplicates ranged from 0 to 49%; all met the MPC (25%) with the exception of one replicate in one batch. The SRM recoveries were between 84% and 119%, which were within the MPC of 75 to 125%.

For PCB analyses, laboratory-based QC samples met the MPC, indicating that the quality of the PCB data is acceptable and the analytical methods are in control. For example, target PCB congeners were undetected in the procedural blanks, indicating that the methods were free of contamination. In addition, recovery and precision results for LCS and LCS duplicate (LCSD) QC samples were acceptable for all target compounds, indicating that the methods were in control. Recovery and precision results for the MS and MSD were good with no exceedances noted in any of the batches. PCB surrogate recoveries also generally met the project data quality objectives. Two exceedances occurred at Station 115 for the undiluted sample which exhibited high levels of target analytes that interfered with SIS and internal standards. The primary dilution is used as the primary file for this sample, where the SIS was diluted out. SIS are appropriately H qualified.

During review of the PCB data it was revealed that each batch of samples included all required QC samples, except for the SRM. Rather, the laboratory analyzed a matrix duplicate, which was not required according to the project QAPP.

Results from the Tier I validation of the grain size, TOC, and PCB congener data indicate that these data are useable. The data validation reports are provided in Appendix G.

The benthic infauna analysis laboratory QC consisted of a review of accuracy rates for sorting and identification. Results indicated that the sorting and identification accuract rates were well above standard levels for taxonomy. All taxonomic data were entered into EXCEL spreadhseets. The data was checked for accuracy against original taxonomic data sheets. The sorting QC results were 100% for all 17 QC samples analyzed. The taxonomy QC results ranged from 96 to 100% for all 35 samples/taxa reviewed. The laboratory data were found to be acceptable.

## Chapter 4. Discussion

This section includes a brief discussion of the LTM (1993-2014) data for total PCB and benthic infauna; a more detailed evaluation of spatial and temporal trends in the LTM data (1993 to 2014) will be performed by EPA.

As has been the case since 1993, levels of total PCBs are generally highest in the Upper Harbor and decrease along a gradient to the Outer Harbor (Table 4-1). The table also shows that in 2014, average concentrations of total PCBs are comparable to 2009 in the Upper Harbor, show a notable decrease in the Lower Harbor between 2009 and 2014 and a smaller overall decrease in the Outer Harbor since the program started in 1993.

**Table 4-1. Average Total PCB Concentrations in Surface (top 2 cm) Sediment at New Bedford Harbor, LTM 1993 to 2014**

| Area         | Total PCB (ppm) |                   |                   |                   |                   |                   |
|--------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              | 2014            | 2009 <sup>1</sup> | 2004 <sup>1</sup> | 1999 <sup>1</sup> | 1995 <sup>1</sup> | 1993 <sup>1</sup> |
| Upper Harbor | 83              | 75                | 61                | 109               | 139               | 109               |
| Lower Harbor | 2.8             | 5.1               | 4.8               | 7.2               | 7.2               | 74                |
| Outer Harbor | 0.2             | 0.2               | 0.2               | 0.4               | 0.4               | 0.8               |

<sup>1</sup> Total PCB values taken from Nelson and Bergen (2012) which are surface weighted values; 2014 values are the arithmetic mean.

Species richness of the New Bedford Harbor benthic community is lowest in the Upper Harbor and increases from north to south through the Harbor with the highest species richness found in the Outer Harbor (Table 3-3). In the Upper Harbor in 2014, the top three dominant species were *Streblospio benedicti*, *Mulinia lateralis*, and *Gemma gemma*. The polychaete *Streblospio benedicti* and the bivalve *Gemma gemma* have consistently been among the dominant taxa throughout the first four LTM surveys that took place (ENSR, 2001). Stations in the Lower Harbor were characterized by intermediate species richness and intermediate counts. Table 3-5 shows the top dominant species in 2014. Three species had greater than 10% dominance in the Lower Harbor, including *Tharyx acutus*, *Tubificidae spp.* and *Streblospio benedicti*. *Tharyx acutus* was the most abundant species (15.0%) in the Lower Harbor, occurring at a higher percentage but with lower numbers than in Upper Harbor. Stations in the Outer Harbor were characterized by the highest species richness and the lowest counts of all three areas. The relatively low number of widespread taxa exemplifies the greater complexity of the infaunal community in the Outer Harbor.

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**Appendix A**  
Final Field Survey Report

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**FINAL SURVEY REPORT**

**for**

**Field Sampling in Support of New Bedford Harbor  
Long-Term Monitoring VI  
New Bedford Harbor, Massachusetts**

**Submitted to**

**Department of the Army  
U.S. Army Corps of Engineers  
North Atlantic Division  
New England District**

**Contract Number: W912WJ-12-D-0004  
Delivery Order Number: DO#19**

**January 12, 2015**

**Prepared by:**

**Battelle**  
*The Business of Innovation*

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## ATTACHMENTS

- Attachment A. Field Data Sheets**
- Attachment B. Chain of Custody Logs**
- Attachment C. GPS Calibration Forms**
- Attachment D. Daily Tailgate Safety Meeting Record Forms**

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## ACROYNMS

|           |   |
|-----------|---|
| AED       | Atlantic Ecology Division                         |
| dGPS      | differential global positioning system            |
| EPA       | U.S. Environmental Protection Agency              |
| LTM       | long-term monitoring                              |
| PCB       | polychlorinated biphenyl                          |
| QAPP      | Quality Assurance Project Plan                    |
| ROD       | Record of Decision                                |
| TOC       | total organic carbon                              |
| USACE NAE | U.S. Army Corps of Engineers New England District |

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## 1. Introduction

In order to assess the effectiveness of the New Bedford Harbor Superfund remediation efforts, a long-term environmental monitoring plan has been developed by the U.S. Environmental Protection Agency's Research Laboratory, Atlantic Ecology Division (EPA AED) in Narragansett, Rhode Island. This plan incorporates an intensive sampling and analysis effort for the purpose of quantifying the long-term environmental effects of reduced polychlorinated biphenyl (PCB) levels in the sediments and water column of the New Bedford Harbor estuary as a result of remediation efforts. The five previous sampling rounds for this program include the "baseline" sampling event conducted in October 1993 (long-term monitoring [LTM] I), a second event (LTM II) conducted immediately after removal of the "hot spot" sediments in October of 1995 and three subsequent events conducted in 1999, 2004, and 2009 (LTM III, IV, and V). This Survey Report describes the sampling activities conducted under the sixth round of sampling and analysis (LTM VI). This work was performed by Battelle for the U.S. Army Corps of Engineers New England District (USACE NAE). CR Environmental participated in the collection activities as a subcontractor to Battelle.

The overall objective of LTM VI was to gather chemical, biological, and physical data for sediments currently in place after multiple years of dredging. Sampling was conducted at 79 separate stations located in three distinct geographical areas of New Bedford Harbor (Figure 1):

- Area 1 – Wood Street to the Coggeshall Street Bridge (27 stations, Figure 2)
- Area 2 – Coggeshall Street Bridge to Hurricane Barrier (29 stations, Figure 3)
- Area 3 – Hurricane Barrier to edge of Fishing Closure Area 3 (23 stations, Figure 4)

Sediment samples were collected at each of the 79 stations for chemical (PCBs and total organic carbon [TOC] content), physical (grain size), and biological (benthic species enumeration) analyses. An additional sample from 20 locations identified by EPA was collected for research purposes being conducted under a separate effort. In situ field measurements (temperature, salinity, turbidity, and dissolved oxygen) were also collected. The actual sampling locations in each of the areas are shown in Figures 2, 3 and 4.

This survey report describes the activities conducted during sampling and provides a synopsis of some preliminary observations from the survey. A description of survey methods is provided in Section 2. A chronological summary of survey activities for grab sampling and in situ data collection is provided in Section 3. Preliminary survey results are provided in Section 4. A description of survey problems and corrective actions, as well as recommendations for future surveys, can be found in Section 5.



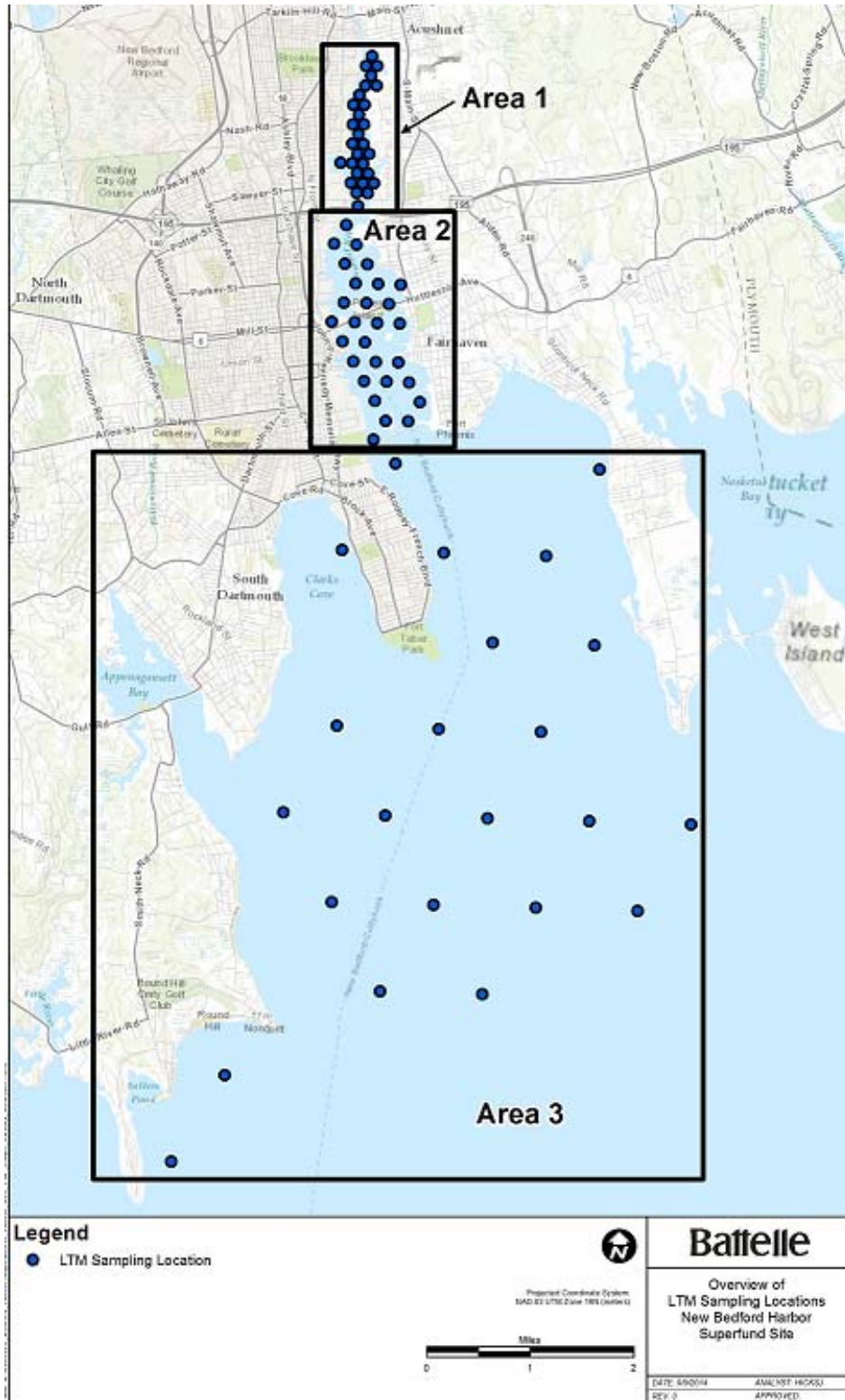


Figure 1. Overview of New Bedford Harbor LTM Sampling Locations

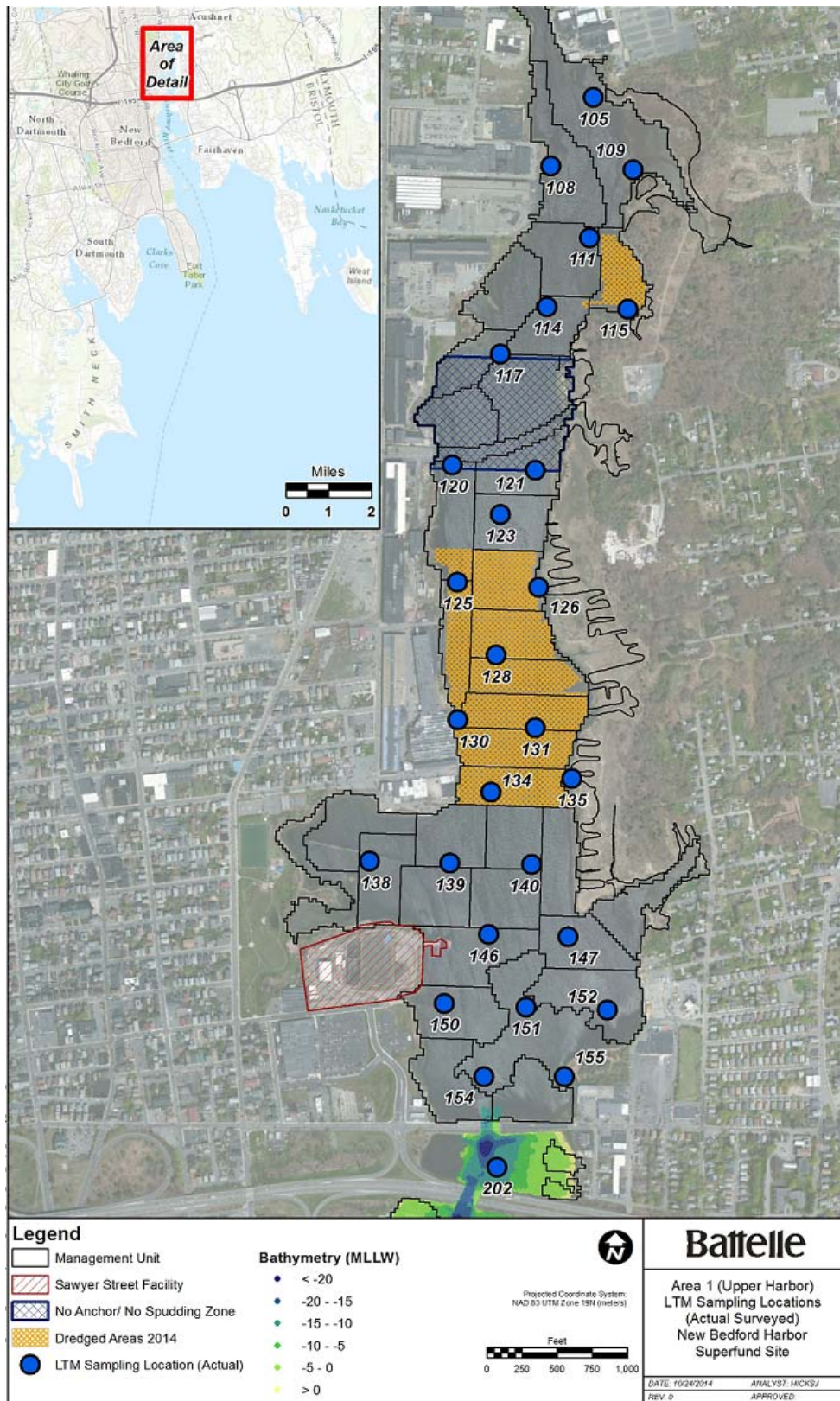


Figure 2. Area 1 (Upper Harbor) LTM Sampling Locations



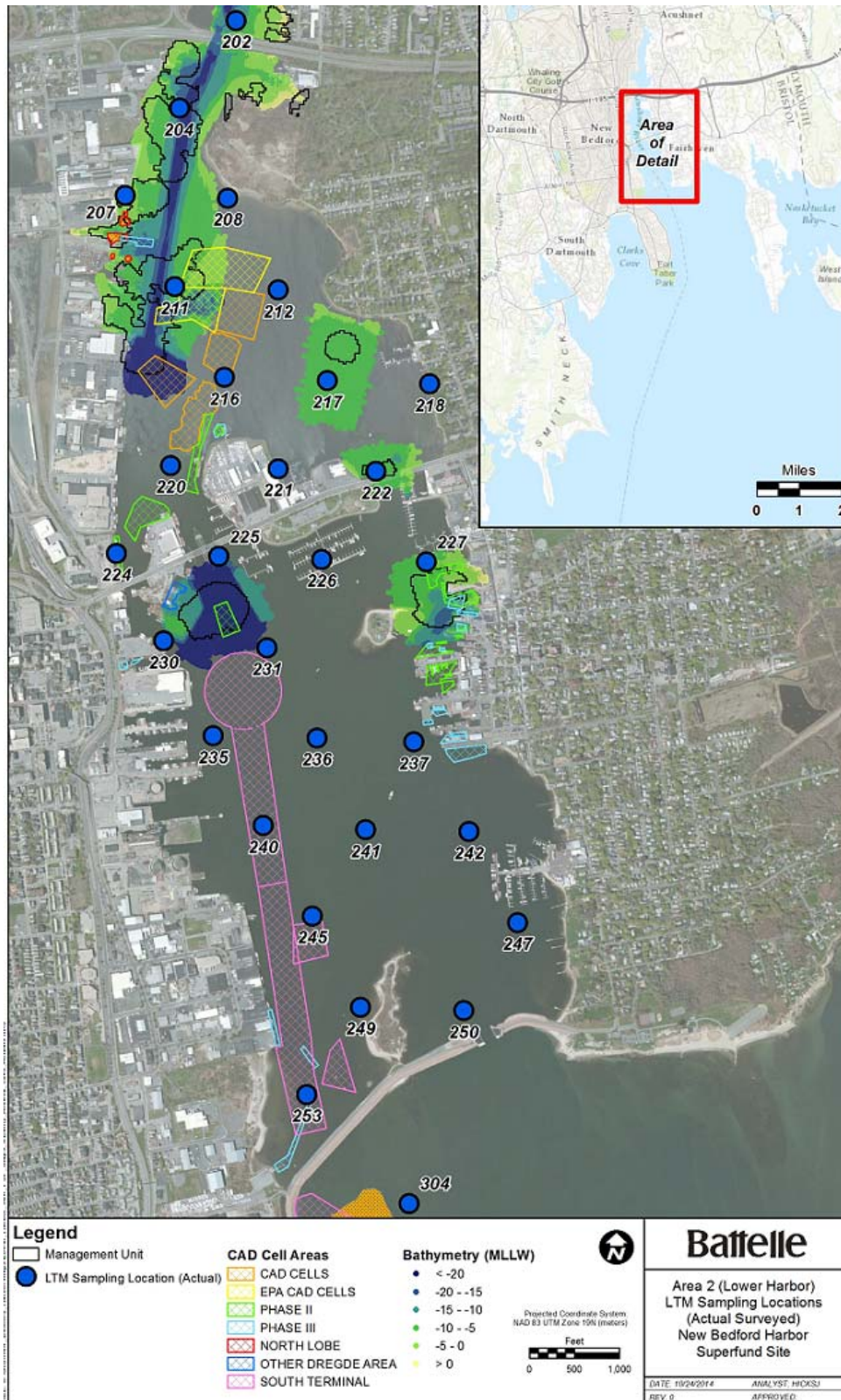
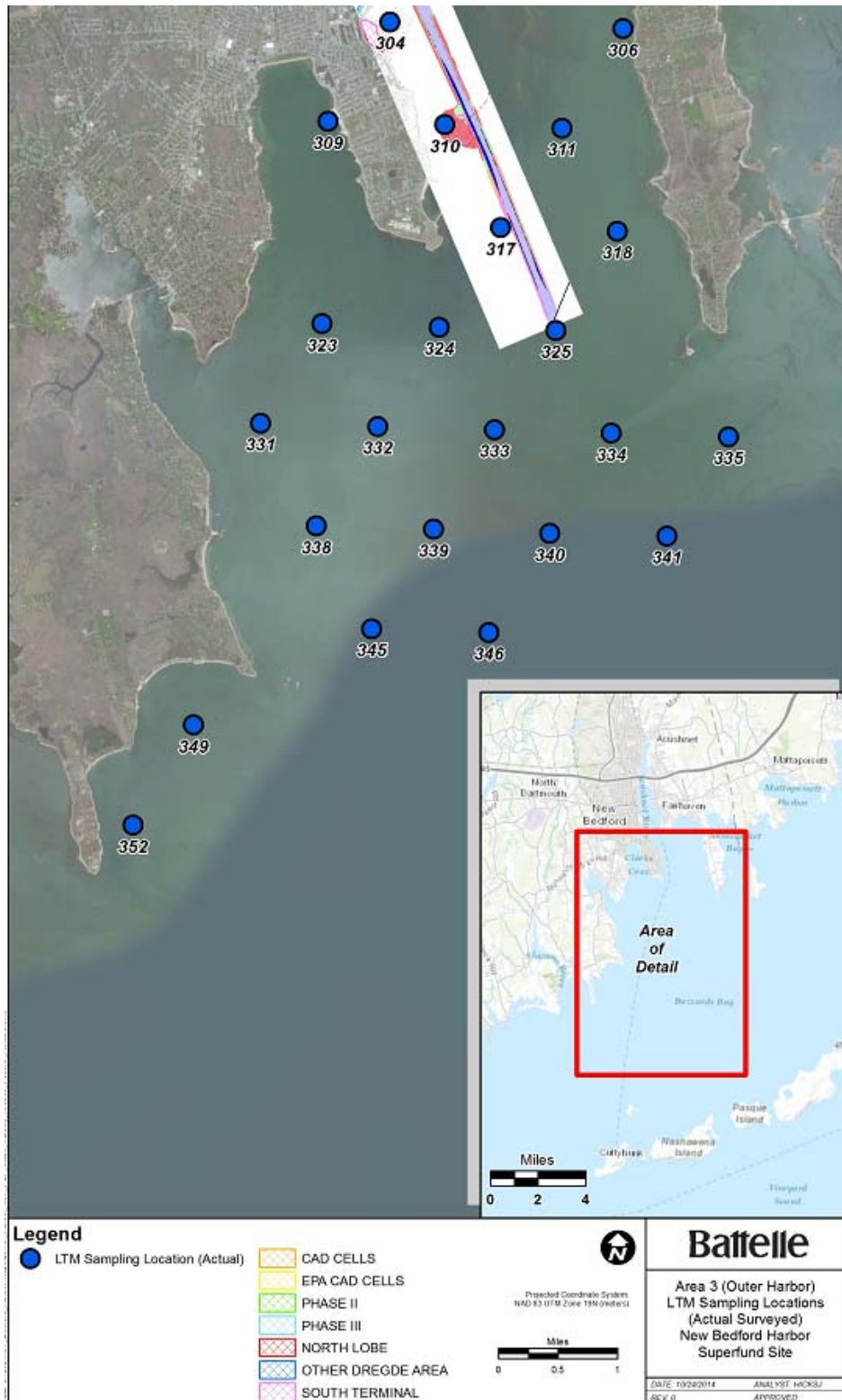


Figure 3. Area 2 (Lower Harbor) LTM Sampling Locations



**Figure 4. Area 3 (Outer Harbor) LTM Sampling Locations**

## 2. Methods

Details on the survey/sampling methods can be found in the Draft Final New Bedford Harbor Long-Term Monitoring VI Field Sampling Plan which is included as Appendix B to the Final New Bedford Harbor Long-Term Monitoring VI Quality Assurance Project Plan (QAPP; Battelle, 2014).

Field collections were performed using two separate field teams each equipped with its own vessel, chief scientist, crews, and full set of sampling equipment. The two vessels were the *R/V Gale Force*, a 20-ft pontoon boat, and the *R/V Cynthia Lee*, a 42-foot provincial lobster boat. Mobilization occurred on September 19 and the morning of September 22, 2014. Demobilization occurred over two days, October 1 and 2, 2014. Survey personnel and roles are listed below in Tables 1 and 2.

**Table 1. Survey Personnel for Gale Force New Bedford Harbor LTM VI**

| Date       | Gale Force     |                 |                  | Land Member                         | Visitor(s)   |
|------------|----------------|-----------------|------------------|-------------------------------------|--|
|            | Captain        | Chief Scientist | Field Technician | Sample Custodian                    |  |
| 9/19/2014  | NA             | NA              | NA               | NA                                  | NA   |
| 9/22/2014  | Mike Walsh     | Paul Sokoloff   | Sam Guimeras     | NA                                  | NA   |
| 9/23/2014  | Alex Mansfield | Paul Sokoloff   | Sam Guimeras     | Jessica Tenzar and Amanda Maxemchuk | NA   |
| 9/24/2014* | NA             | NA              | NA               | Amanda Maxemchuk                    | NA   |
| 9/25/2014  | Alex Mansfield | Paul Sokoloff   | Sam Guimeras     | Jessica Tenzar                      | NA   |
| 9/26/2014  | Mike Walsh     | Paul Sokoloff   | Sam Guimeras     | Amanda Maxemchuk                    | NA   |
| 9/29/2014  | Alex Mansfield | Paul Sokoloff   | Sam Guimeras     | Jessica Tenzar                      | Betsy Cutie<br>(Project Quality Assurance Officer) |
| 9/30/2014  | Mike Walsh     | Paul Sokoloff   | NA               | Jessica Tenzar                      | NA   |
| 10/1/2014* | NA             | NA              | NA               | Matt Fitzpatrick                    | NA   |
| 10/2/2014* | NA             | NA              | NA               | Matt Fitzpatrick                    | NA   |

\* Sample collection was not conducted but sample processing and shipping did occur; NA: not applicable

**Table 2. Survey Personnel for Cynthia Lee New Bedford Harbor LTM VI**

| Date      | Cynthia Lee   |                  |                            |                           | Land Member                         | Visitor(s)                    |
|-----------|---------------|------------------|----------------------------|---------------------------|-------------------------------------|-------------------------------|
|           | Captain       | Chief Scientist  | Field Technician (Sieving) | Field Technician (Hypack) | Sample Custodian                    |                               |
| 9/22/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Ken Thompson              | NA                                  | NA                            |
| 9/23/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Ken Thompson              | Jessica Tenzar/<br>Amanda Maxemchuk | NA                            |
| 9/24/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Ken Thompson              | Amanda Maxemchuk                    | NA                            |
| 9/25/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Ben Mahar                 | Jessica Tenzar                      | NA                            |
| 9/26/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Ben Mahar                 | Amanda Maxemchuk                    | NA                            |
| 9/29/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Adrianna Ortiz            | Jessica Tenzar                      | NA                            |
| 9/30/2014 | Jarrett Drake | Matt Fitzpatrick | Patrick Curran             | Adrianna Ortiz            | Jessica Tenzar                      | Todd Randall<br>and Jay McKay |

|  |  |  |  |  |  |             |
|--|--|--|--|--|--|-------------|
|  |  |  |  |  |  | (USACE NAE) |
|--|--|--|--|--|--|-------------|

NA: not applicable

### 2.1. In Situ Sensor Data Collection

At each station in situ water quality measurements were taken prior to the collection of sediment samples. Measurements included salinity, temperature, turbidity, and dissolved oxygen, and are summarized in Table 3. The measurements were taken using a YSI EXO2 multi-parameter water quality sonde. The sonde was manually lowered to a depth of approximately 0.5 to 1 meter from the bottom, where the depth and in situ data were recorded by hand on the station log sheets.

While on the Gale Force, navigation data were stored electronically in a hand-held differential global positioning system (dGPS) unit and also recorded on the station log sheets. Electronic data were downloaded to a personal computer once the survey was completed. Onboard the Cynthia Lee, navigation data were stored electronically in Hypack<sup>®</sup> software.

**Table 3. In Situ Data Water Quality Data from New Bedford Harbor LTM IV Collections**

| Station ID | Northing <sup>1</sup> | Easting <sup>1</sup> | Sampling Date | Reading Depth (ft) <sup>2</sup> | Temperature (°C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------------|----------------------|---------------|---------------------------------|------------------|----------------|-----------------|-------------------------|
| 105        | 2707639.028           | 815948.507           | 25-Sep-2014   | 2                               | 19.2             | 29.7           | 2.7             | 5.2                     |
| 108        | 2707141.46            | 815659.588           | 26-Sep-2014   | 0.53                            | 18.9             | 29.3           | 2.8             | 5.6                     |
| 109        | 2707130.912           | 816247.055           | 25-Sep-2014   | 2.3                             | 19.1             | 29.7           | 1.8             | 5.6                     |
| 111        | 2706636.948           | 815952.646           | 26-Sep-2014   | 3.3                             | 19.8             | 29.9           | 2.4             | 6.5                     |
| 114        | 2706135.736           | 815663.74            | 26-Sep-2014   | 2.1                             | 19.7             | 29.6           | 3.2             | 7.2                     |
| 115        | 2706136.026           | 816237.496           | 25-Sep-2014   | 0.3                             | 18.9             | 29.7           | 1.6             | 5                       |
| 117        | 2705787.328           | 815338.258           | 26-Sep-2014   | 0.53                            | 19.8             | 29.4           | 2.9             | 7.4                     |
| 120        | 2704987.104           | 815018.578           | 22-Sep-2014   | 1.08                            | 21.16            | 30.46          | 3.82            | 6.57                    |
| 121        | 2704965.646           | 815611.637           | 29-Sep-2014   | 2                               | 20.5             | 30.2           | 5.2             | 5.4                     |
| 123        | 2704643.324           | 815370.663           | 29-Sep-2014   | 2.8                             | 20.5             | 30.3           | 5.2             | 5.6                     |
| 125        | 2704149.389           | 815078.936           | 22-Sep-2014   | 5.07                            | 20.95            | 30.47          | 4.14            | 6.29                    |
| 126        | 2704131.501           | 815661.063           | 26-Sep-2014   | 0.52                            | 18.8             | 30.3           | 7.7             | 5.4                     |
| 128        | 2703637.581           | 815372.068           | 29-Sep-2014   | 6.8                             | 20.4             | 30.6           | 4.9             | 5.3                     |
| 130        | 2703165.733           | 815112.969           | 22-Sep-2014   | 3.88                            | 20.67            | 30.57          | 2.49            | 5.42                    |
| 131        | 2703125.777           | 815665.213           | 25-Sep-2014   | 1.9                             | 19               | 30.1           | 3.9             | 5.9                     |
| 134        | 2702657.271           | 815362.37            | 22-Sep-2014   | 4.63                            | 20.81            | 30.3           | 2.87            | 7.54                    |
| 135        | 2702770.513           | 815935.437           | 23-Sep-2014   | 0.2                             | 18.4             | 30.2           | 2               | 6.2                     |
| 138        | 2702137.66            | 814510.599           | 26-Sep-2014   | 3                               | 18.7             | 30.5           | 3               | 5.5                     |
| 139        | 2702141.566           | 815084.429           | 25-Sep-2014   | 0.1                             | 18.9             | 29.7           | 20.1            | 6                       |
| 140        | 2702149.185           | 815666.431           | 23-Sep-2014   | 3.4                             | 20.6             | 30.2           | 8.2             | 7.5                     |
| 146        | 2701640.69            | 815377.511           | 23-Sep-2014   | 6.1                             | 20.1             | 30.4           | 7.4             | 5.6                     |

<sup>1</sup> NAD 83 State Plane Massachusetts FIPS 2001

<sup>2</sup> depth of YSI within the water column at time of collection

| <b>Station ID</b> | <b>Northing<sup>1</sup></b> | <b>Easting<sup>1</sup></b> | <b>Sampling Date</b> | <b>Reading Depth (ft)<sup>2</sup></b> | <b>Temperature (°C)</b> | <b>Salinity (PSU)</b> | <b>Turbidity (NTU)</b> | <b>Dissolved Oxygen (mg/L)</b> |
|-------------------|-----------------------------|----------------------------|----------------------|---------------------------------------|-------------------------|-----------------------|------------------------|--------------------------------|
| 147               | 2701640.916                 | 815943.181                 | 23-Sep-2014          | 1.5                                   | 19.6                    | 30.7                  | 2.7                    | 5.7                            |
| 150               | 2701139.392                 | 815074.866                 | 22-Sep-2014          | 7.44                                  | 20.35                   | 30.56                 | 2.57                   | 5.24                           |

**Table 3. In Situ Data Water Quality Data from New Bedford Harbor LTM IV Collections (continued)**

| Station ID | Northing <sup>1</sup> | Easting <sup>1</sup> | Sampling Date            | Reading Depth (ft) <sup>2</sup> | Temperature (°C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------------|----------------------|--------------------------|---------------------------------|------------------|----------------|-----------------|-------------------------|
| 151        | 2701128.792           | 815657.018           | 23-Sep-2014 <sup>3</sup> | 2.3                             | 19.6             | 30.4           | 6.2             | 6.1                     |
| 152        | 2701125.495           | 816239.12            | 26-Sep-2014              | 1.83                            | 18.5             | 30.4           | 2.96            | 5.57                    |
| 154        | 2700623.959           | 815370.792           | 25-Sep-2014              | 12.8                            | 18.9             | 30.5           | 3.3             | 5.4                     |
| 155        | 2700638.818           | 815944.584           | 23-Sep-2014 <sup>3</sup> | 0.1                             | 17.9             | 30.1           | 2.3             | 5.6                     |
| 202        | 2699979.743           | 815484.509           | 23-Sep-2014              | 11.8                            | 19.8             | 30.52          | 4.3             | 5.6                     |
| 204        | 2698984.073           | 814879.117           | 30-Sep-2014              | 13.2                            | 19.72            | 32.97          | 6.02            | 5.97                    |
| 207        | 2697993.014           | 814306.441           | 29-Sep-2014              | 0.3                             | 20.5             | 30.8           | 11.1            | 6.7                     |
| 208        | 2697997.147           | 815448.863           | 29-Sep-2014              | 0.7                             | 20.4             | 30.9           | 2.7             | 6.8                     |
| 211        | 2696994.853           | 814887.195           | 30-Sep-2014              | 10.67                           | 19.76            | 33.11          | 2.61            | 6.28                    |
| 212        | 2696991.423           | 816038.465           | 30-Sep-2014              | 8.01                            | 19.72            | 33.03          | 3.96            | 6.1                     |
| 216        | 2696000.711           | 815467.424           | 22-Sep-2014              | 9.41                            | 20.29            | 32.9           | 1.16            | 5.83                    |
| 217        | 2695997.272           | 816613.277           | 30-Sep-2014              | 9.2                             | 19.57            | 32.99          | 3.25            | 5.89                    |
| 218        | 2695994.231           | 817755.848           | 29-Sep-2014              | 0.5                             | 20.6             | 30.9           | 2.5             | 6.6                     |
| 220        | 2695000.531           | 814895.306           | 22-Sep-2014              | 31.45                           | 20.3             | 33.14          | 3.72            | 5.73                    |
| 221        | 2694999.278           | 816098.322           | 25-Sep-2014              | 6.8                             | 19.03            | 32.99          | 3.12            | 5.61                    |
| 222        | 2695003.482           | 817185.675           | 29-Sep-2014              | 9.1                             | 20.02            | 33.06          | 6.2             | 5.61                    |
| 224        | 2694005.113           | 814324.746           | 29-Sep-2014              | 29.7                            | 19.63            | 33.13          | 4.89            | 5.59                    |
| 225        | 2694006.303           | 815463.01            | 30-Sep-2014              | 28.16                           | 19.84            | 33.25          | 1.5             | 6.88                    |
| 226        | 2694004.324           | 816609.224           | 30-Sep-2014              | 7.6                             | 19.67            | 33.05          | 2.92            | 6.18                    |
| 227        | 2694010.559           | 817775.884           | 30-Sep-2014              | 5.59                            | 19.67            | 33.18          | 0.8             | 6.84                    |
| 230        | 2693044.278           | 814875               | 26-Sep-2014              | 22.1                            | 18.97            | 33.19          | 8.64            | 5.88                    |
| 231        | 2693002.61            | 816030.007           | 26-Sep-2014              | 25.8                            | 18.93            | 33.21          | 9.11            | 6.12                    |
| 235        | 2692004.24            | 815458.099           | 22-Sep-2014              | 24.72                           | 20.41            | 33.19          | 6.62            | 5.97                    |
| 236        | 2692014.713           | 816613.62            | 26-Sep-2014              | 29.01                           | 18.91            | 33.23          | 2.26            | 6.54                    |
| 237        | 2692001.761           | 817693.304           | 26-Sep-2014              | 20.01                           | 18.84            | 33.25          | 0.61            | 6.69                    |
| 240        | 2691020.351           | 816043.598           | 22-Sep-2014              | 30.7                            | 20.45            | 33.16          | 11.84           | 5.99                    |
| 241        | 2691006.728           | 817188.399           | 26-Sep-2014              | 33.27                           | 18.88            | 33.21          | 1.97            | 6.5                     |
| 242        | 2691018.342           | 818338.495           | 26-Sep-2014              | 18.01                           | 18.87            | 33.22          | 2.11            | 6.57                    |
| 245        | 2690027.3             | 816619.64            | 22-Sep-2014              | 8.8                             | 20.5             | 33.17          | 6.06            | 6.01                    |
| 247        | 2690023.115           | 818907.816           | 26-Sep-2014              | 9.05                            | 18.92            | 33.19          | 1.85            | 6.43                    |
| 249        | 2689029.847           | 817189.2             | 25-Sep-2014              | 8.51                            | 19.17            | 33.21          | 8.13            | 6.23                    |
| 250        | 2689022.131           | 818337.067           | 25-Sep-2014              | 30.45                           | 19.18            | 33.26          | 0.75            | 6.7                     |
| 253        | 2688037.645           | 816617.472           | 22-Sep-2014              | 24.39                           | 20.29            | 31.7           | 11.17           | 5.65                    |
| 304        | 2686858.546           | 817794.285           | 25-Sep-2014              | 8.74                            | 18.94            | 33.28          | 0.42            | 7.06                    |
| 306        | 2686854.31            | 828156.256           | 24-Sep-2014              | 7.34                            | 19.55            | 33.45          | 0.79            | 8.43                    |
| 309        | 2682350.306           | 815165.768           | 25-Sep-2014              | 16                              | 19.09            | 33.46          | 0.53            | 6.92                    |

<sup>3</sup> Chemistry sample was re-collected on 30 September 2014.



**Table 3. In Situ Data Water Quality Data from New Bedford Harbor LTM IV Collections (continued)**

| Station ID | Northing <sup>1</sup> | Easting <sup>1</sup> | Sampling Date | Reading Depth (ft) <sup>2</sup> | Temperature (°C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------------|----------------------|---------------|---------------------------------|------------------|----------------|-----------------|-------------------------|
| 310        | 2682352.405           | 820360.836           | 25-Sep-2014   | 17.42                           | 19.05            | 33.31          | 4.67            | 7.09                    |
| 311        | 2682355.393           | 825569.314           | 24-Sep-2014   | 14.52                           | 19.5             | 33.39          | 1.17            | 7.34                    |
| 317        | 2677845.395           | 822971.323           | 25-Sep-2014   | 29.4                            | 19.43            | 33.44          | 1.44            | 7.15                    |
| 318        | 2677841.182           | 828162.815           | 24-Sep-2014   | 17.9                            | 19.37            | 33.38          | 1.09            | 7.06                    |
| 323        | 2673344.092           | 815166.415           | 29-Sep-2014   | 26.7                            | 19.34            | 33.5           | 2.18            | 6.17                    |
| 324        | 2673342.588           | 820369.259           | 29-Sep-2014   | 31.1                            | 19.35            | 33.5           | 2.07            | 6.16                    |
| 325        | 2673345.121           | 825566.893           | 29-Sep-2014   | 33.3                            | 19.41            | 33.5           | 2               | 7.36                    |
| 331        | 2668842.924           | 812568.352           | 29-Sep-2014   | 24.8                            | 19.29            | 33.46          | 2.91            | 7.11                    |
| 332        | 2668848.071           | 817763.937           | 29-Sep-2014   | 25.9                            | 19.32            | 33.5           | 0.2             | 7.18                    |
| 333        | 2668853.002           | 822971.303           | 23-Sep-2014   | 18.7                            | 19.7             | 33.47          | 1.31            | 7.14                    |
| 334        | 2668845.735           | 828145.935           | 23-Sep-2014   | 36.69                           | 19.58            | 33.48          | 5.32            | 6.9                     |
| 335        | 2668838.535           | 833370.393           | 23-Sep-2014   | 27                              | 19.66            | 33.47          | 1.41            | 6.9                     |
| 338        | 2664339.322           | 815165.363           | 29-Sep-2014   | 26.2                            | 19.3             | 33.57          | 1.78            | 7.22                    |
| 339        | 2664348.061           | 820375.891           | 23-Sep-2014   | 35.11                           | 19.56            | 33.53          | 5.43            | 7                       |
| 340        | 2664313.232           | 825548.702           | 23-Sep-2014   | 35.01                           | 19.54            | 33.52          | 4.65            | 6.95                    |
| 341        | 2664341.797           | 830761.58            | 23-Sep-2014   | 36.27                           | 19.53            | 33.53          | 3.37            | 7.03                    |
| 345        | 2659836.363           | 817761.995           | 24-Sep-2014   | 37.9                            | 19.4             | 33.56          | 1.94            | 7.21                    |
| 346        | 2659826.733           | 822973.666           | 23-Sep-2014   | 34.45                           | 19.45            | 33.57          | 1.7             | 7.04                    |
| 349        | 2655330.368           | 809969.505           | 24-Sep-2014   | 25.51                           | 19.42            | 33.55          | 0.76            | 7.17                    |
| 352        | 2650800.51            | 807407.471           | 24-Sep-2014   | 21.05                           | 19.27            | 33.61          | 1.38            | 7.16                    |

### **2.2. Sediment Grab Sample Collection and Processing**

Grab samples for chemistry analysis were collected at all of the stations using a 0.04-m<sup>2</sup> Van Veen grab sampler. Each grab was inspected for acceptability. If the grab was deemed unacceptable, it was discarded over the side of the vessel in an area that would avoid contaminating subsequent samples and the equipment was rinsed with site water. Once the grab was deemed acceptable by the Chief Scientist, the top 2 cm was transferred to a decontaminated stainless steel or glass mixing bowl and the material was homogenized using a decontaminated stainless steel or a dedicated spoon. Care was taken to avoid taking sediment which had contacted the sides of the grab to reduce potential cross contamination. Sufficient material was collected for grain size, PCB, and TOC analysis. The sample containers were then labeled and stored on ice until being transferred to the field sample custodian at the shoreside facility.

Grab samples for infauna analysis, and associated grain size, were collected concurrently with the grabs for compositing described above. The infauna grab samples were collected using a 0.04-m<sup>2</sup> Van Veen grab sampler. Triplicate grabs were taken at each station. Once the grab was deemed acceptable, a grain size sample was collected by inserting an open ended syringe through the entire depth of the grab and drawing the sediment out, thereby capturing a small sediment core representing the entire depth of the grab. This was repeated until 250 mL of sediment was

removed for the grain size sample. The remaining material was transferred to a sieving station and passed through a 0.5 mm sieve. All material remaining in the sieve was transferred to clean plastic jar, preserved with 10% formaldehyde, borax, and site water, and then labeled. Grain size samples were stored on ice until being transferred to the field sample custodian.

For both the sediment and infauna grabs, the vessel was moved slightly while on station to avoid resampling the same location. After each station was completed, the grab samplers were decontaminated with soap and water and rinsed with site water. If an oily sheen was present, the grab samplers were wiped with an acetone wipe.

### 3. Survey Chronology

Mobilization occurred on Friday, September 19, 2014. Supplies and equipment were transferred to the USACE field site in New Bedford Harbor, MA. The Gale Force was mobilized that day and the R/V Cynthia Lee was mobilized on the morning of September 22, 2014. Table 4 summarizes the chronology of sampling days for each survey vessel (i.e., Gale Force and Cynthia Lee). On September 29, 2014 an internal QA audit was conducted by Battelle to ensure all sampling procedures followed the procedures outlined in the QAPP (Battelle, 2014). Demobilization occurred on October 1 and 2, 2014 along with shipping of the remaining samples. Note: All times are recorded as Eastern Daylight Time.

**Table 4. Chronology of Sampling Days**

| Station ID                              | Time of First Grab | Time of Last Grab | # of Unsuccessful Grabs | Station Comments  |
|---|--------------------|-------------------|-------------------------|---|
| <b>Cynthia Lee – September 22, 2014</b> |                    |                   |                         |   |
| 216                                     | 0914               | 1053              | 2                       |   |
| 220                                     | 1020               | 1040              | 1                       |   |
| 253                                     | 1128               | 1204              | 0                       |   |
| 245                                     | 1240               | 1306              | 0                       |   |
| 240                                     | 1321               | 1403              | 3                       |   |
| 235                                     | 1440               | 1525              | 8                       | Very soft sediment; over penetrations discarded and several pre-tripped grabs |
| <b>Gale Force – September 22, 2014</b>  |                    |                   |                         |   |
| 150                                     | 0813               | 0956              | 1                       | Spotty sheen on benthic sample collections                                    |
| 130                                     | 1116               | 1140              | 2                       | Moved station; target coordinates onshore; slight sheen                       |
| 134                                     | 1208               | 1233              | 0                       | Slight sheen on overlying water   |
| 125                                     | 1425               | 1454              | 4                       | Sheen on overlying water  |
| 120                                     | 1524               | 1545              | 0                       | Slight sheen on overlying water   |
| <b>Cynthia Lee – September 23, 2014</b> |                    |                   |                         |   |
| 335                                     | 0845               | 0907              | 1                       |   |
| 334                                     | 0928               | 0953              | 0                       |   |
| 341                                     | 1022               | 1048              | 1                       |   |
| 340                                     | 1115               | 1136              | 0                       |   |
| 346                                     | 1226               | 1254              | 0                       |   |
| 339                                     | 1321               | 1353              | 1                       |   |

**Table 4. Chronology of Sampling Days (continued)**

| Station ID                              | Time of First Grab | Time of Last Grab | # of Unsuccessful Grabs | Station Comments   |
|---|--------------------|-------------------|-------------------------|--|
| 333                                     | 1413               | 1436              | 0                       |  |
| <b>Gale Force – September 23, 2014</b>  |                    |                   |                         |  |
| 155                                     | 0754               | 0825              | 0                       | At marsh edge; grabs taken ~10 feet from <i>Spartina</i> edge  |
| 135                                     | 0909               | 0924              | 0                       | Moved station ~15 ft west; target location in a marsh; ~10 ft from <i>Spartina</i> edge                                |
| 147                                     | 1012               | 1029              | 4                       |  |
| 151                                     | 1110               | 1128              | 2                       |  |
| 202                                     | 1353               | 1408              | 6                       | A lot of shells; difficult to get grabs; after multiple unsuccessful grabs full of shells, relocated station by ~20 ft |
| 140                                     | 1457               | 1511              | 3                       |  |
| 146                                     | 1543               | 1603              | 4                       |  |
| <b>Cynthia Lee – September 24, 2014</b> |                    |                   |                         |  |
| 352                                     | 0854               | 0933              | 5                       | Moved benthic reps 2 and 3 and chemistry grab ~50 ft southeast of target; lots of rocks on target                      |
| 349                                     | 1003               | 1022              | 0                       |  |
| 345                                     | 1050               | 1122              | 4                       |  |
| 318                                     | 1154               | 1223              | 11                      |  |
| 311                                     | 1315               | 1339              | 4                       |  |
| 306                                     | 1407               | 1433              | 0                       | Duplicate chemistry grab at 1440   |
| <b>Gale Force – September 25, 2014</b>  |                    |                   |                         |  |
| 105                                     | 0819               | 0834              | 0                       | Slight sheen on overlying water  |
| 109                                     | 0906               | 0921              | 0                       | Slight sheen on overlying water of grabs   |
| 115                                     | 0955               | 1012              | 0                       | Sheen on water surface, sheen on overlying water of grab   |
| 154                                     | 1258               | 1330              | 1                       |  |
| 139                                     | 1411               | 1430              | 0                       | Chemistry duplicate collected at 1416  |
| 131                                     | 1514               | 1532              | 0                       | Slight sheen on overlying water of grab  |
| <b>Cynthia Lee – September 25, 2014</b> |                    |                   |                         |  |
| 221                                     | 0755               | 0823              | 2                       | Moved station 50-75 ft east of target; target was on land  |
| 249                                     | 0929               | 1008              | 5                       |  |
| 317                                     | 1039               | 1108              | 1                       |  |
| 309                                     | 1131               | 1158              | 0                       |  |
| 310                                     | 1257               | 1318              | 1                       |  |
| 304                                     | 1341               | 1412              | 2                       | Shell mat – mostly dead with some live limpets in each grab  |
| 250                                     | 1438               | 1521              | 6                       |  |
| <b>Gale Force – September 26, 2014</b>  |                    |                   |                         |  |
| 152                                     | 0821               | 0837              | 0                       | Chemistry duplicate taken at 0850  |
| 138                                     | 0924               | 0941              | 0                       |  |
| 126                                     | 1054               | 1106              | 0                       | In active dredge Area L on eastern side; 2 meters from marsh   |
| 108                                     | 1150               | 1212              | 1                       | Sheen on overlying water of grabs  |
| 111                                     | 1336               | 1351              | 0                       | Slight sheen on overlying water of grabs   |
| 114                                     | 1432               | 1448              | 0                       |  |

**Table 4. Chronology of Sampling Days (continued)**

| Station ID                              | Time of First Grab | Time of Last Grab | # of Unsuccessful Grabs | Station Comments   |
|---|--------------------|-------------------|-------------------------|--|
| 117                                     | 1517               | 1531              | 0                       | Sheen on overlying water of grabs  |
| <b>Cynthia Lee – September 26, 2014</b> |                    |                   |                         |  |
| 247                                     | 0723               | 0757              | 4                       |  |
| 242                                     | 0818               | 0845              | 2                       | Chemistry duplicate at 0856  |
| 241                                     | 0929               | 0958              | 1                       |  |
| 237                                     | 1035               | 1129              | 13                      | Lots of rocks, shells and quahogs; moved station ~50 ft west   |
| 236                                     | 1215               | 1249              | 4                       |  |
| 231                                     | 1320               | 1350              | 0                       | Elevated turbidity likely from dredging ~200 ft west of target; all benthic samples contained very little material |
| 230                                     | 1412               | 1433              | 0                       | Moved station 30 ft north-northeast due to commercial fishing boats on location                                    |
| <b>Gale Force – September 29, 2014</b>  |                    |                   |                         |  |
| 128                                     | 0806               | 0832              | 0                       | Slight sheen on overlying water of grabs   |
| 123                                     | 0906               | 0926              | 1                       | Slight sheen on overlying water of grabs   |
| 121                                     | 1001               | 1016              | 0                       |  |
| 218                                     | 1247               | 1414              | 23                      | Two grabs collected for the chemistry samples  |
| 208                                     | 1439               | 1501              | 1                       |  |
| 207                                     | 1526               | 1551              | 2                       | Sheen on overlying water of grabs  |
| <b>Cynthia Lee – September 29, 2014</b> |                    |                   |                         |  |
| 332                                     | 0809               | 0829              | 0                       |  |
| 338                                     | 0852               | 0918              | 1                       |  |
| 331                                     | 0937               | 1003              | 0                       |  |
| 323                                     | 1028               | 1052              | 0                       |  |
| 324                                     | 1114               | 1142              | 1                       |  |
| 325                                     | 1207               | 1235              | 0                       |  |
| 222                                     | 1504               | 1520              | 2                       |  |
| 224                                     | 1544               | 1600              | 0                       | Moved station ~20 ft east/southeast of target; commercial fishing boats docked on station                          |
| <b>Cynthia Lee – September 30, 2014</b> |                    |                   |                         |  |
| 225                                     | 0744               | 0808              | 0                       |  |
| 226                                     | 0834               | 0902              | 0                       |  |
| 227                                     | 0944               | 1020              | 6                       |  |
| 217                                     | 1134               | 1152              | 1                       |  |
| 212                                     | 1224               | 1254              | 0                       |  |
| 151                                     | 1240               | 1240              | 0                       | Chemistry grab retaken due to low sample volume during first attempt   |
| 211                                     | 1325               | 1351              | 2                       |  |
| 204                                     | 1417               | 1445              | 1                       | Very variable bottom; 25.3 ft at the center of the station; YSI cast done at a bottom depth of 15.4 ft             |
| <b>Gale Force – September 30, 2014</b>  |                    |                   |                         |  |
| 155                                     | 0806               | 0806              | 0                       | Chemistry Grab Retake due to low sample volume on first attempt  |
| 151                                     | 1009               | 1009              | 0                       | Chemistry grab retaken due to low sample volume during first attempt   |

## 4. Survey Results

Composite sediment samples, triplicate infauna samples, and in situ sensor data were collected at 79 stations. In addition, four stations (139, 152, 242, and 306) were sampled for duplicate PCB and TOC samples. A single grab was collected and subsampled (top 10 cm collected) for EPA at 20 stations. At Station 212, a second grab was needed to provide sufficient volume for the 2-liter EPA sample due to the high abundance of large quahogs. Sampling was completed in 7 days for the field effort, plus 2 days of mobilization and demobilization for a total of 9 days. A summary of the stations sampled are presented in Table 4.

A total of 719 samples were collected from the sediment grabs collected at the 79 LTM stations. Sediment characteristics varied depending on collection location. The sediments in the Upper and Lower Harbor varied from black, silty mud to sand to gravel. The sediments in the Outer Harbor consisted mostly of grey, silty mud, with occasional sandy sites or sites that consisted primarily of shells.

## 5. Problems Experienced, Actions Taken, and Recommendations

### 5.1. Logistical

The QAPP called for each vessel to perform navigation checks at the beginning and end of each survey day at a known location. This turned out to be infeasible for the Cynthia Lee. The vessel-mounted dGPS could not be easily removed and verified against known points. Rather, a handheld dGPS was compared to the vessel-mounted dGPS.

### 5.2. Technical

Two stations in Area 1 were resampled due to low sample volume during the first attempt. Seven stations were moved from the target location due to poor sampling conditions (i.e., rocks, or shells present in high quantity) or because the target coordinates were on land. Two stations were moved due to the presence of a commercial fishing boat located on the target coordinates. The specific stations are noted above in the survey chronology (Table 4).

At the field duplicate stations, samples were inadvertently collected for grain size although this was not required according to the QAPP. The duplicate samples for other grain size were discarded in the appropriate waste stream at the New Bedford Harbor Superfund field site. Although there is no impact on the survey data, this deviation is explained here because field logs show the collection of these samples.

## 6. References

Battelle. 2014. *New Bedford Harbor Long Term Monitoring VI Quality Assurance Project Plan*. September.

United States Environmental Protection Agency (EPA). 1998. Administrative Record Index, OU 01 Upper and Lower Harbor, Record of Decision (ROD), September 25.

**Attachment A**  
**Field Data Sheets**

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                                    |     |                              |          |
|------------------------------------|-----|------------------------------|----------|
| Station ID                         | 105 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)                  | 5.2 | Number of Unsuccessful Grabs | 0        |
| Weather: Overcast, <del>SKES</del> |     |                              |          |
| Sampling Staff: PDS/AOM/SAG        |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 2.0        | 19.2            | 29.7           | 2.7             | 5.2                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz 30%<br/>4oz 30%</del><br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0153 (HT) | 41.67636 | 70.91513  |

Time: 0819

Surface biology: None

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0154 (HT) | 41.67636 | 70.91513  |

Penetration(cm): 8.5      Time: 0826

Number of Benthic bottles: 1

Surface biology: None

Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0155 (HT) | 41.67636 | 70.91513  |

Penetration(cm): 9      Time: 0830

Number of Benthic bottles: 1

Surface biology: Amphipods

Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0156 (HT) | 41.67636 | 70.91513  |

Penetration(cm): 9      Time: 0834

Number of Benthic bottles: 1

Surface biology: None

Volume of PSD sample (ml): 250

|                   |                                 |
|-------------------|---------------------------------|
| Station Comments: | Slight Sheen on overlying water |
|                   |                                 |
| Completed By:     | PDS                             |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 108 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 3.7 | Number of Unsuccessful Grabs | 1        |
| Weather: Sunny, 10-15Kts    |     |                              |          |
| Sampling Staff: PDS/SAG/JMW |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.53       | 18.9            | 29.3           | 2.8             | 5.6                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>PDS x 5y-14</sup><br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0228 (HT) | 41.67500 | 70.91620  |

Time: 1150

Surface biology: Snail

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP1<br>NBH14-0229 (HT) | 41.67501 | 70.91618  |

Penetration(cm): 9 Time: 1159 Number of Benthic bottles: 1

Surface biology: None Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP2<br>NBH14-0230 (HT) | 41.67502 | 70.91618  |

Penetration(cm): 9 Time: 1206 Number of Benthic bottles: 2

Surface biology: None Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP3<br>NBH14-0231 (HT) | 41.67501 | 70.91618  |

Penetration(cm): 9 Time: 1212 Number of Benthic bottles: 2

Surface biology: None Volume of PSD sample (ml): 250

|                   |                                      |  |  |
|-------------------|--------------------------------------|--|--|
| Station Comments: | Sheen on overlaying water            |  |  |
|                   | of grabs, EPA grab collected at 1228 |  |  |
|                   | 41.67502, 70.91618                   |  |  |
| Completed By:     | PDS                                  |  |  |



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 109 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 5.6 | Number of Unsuccessful Grabs | 0        |
| Weather: Overcast, < 5Kts   |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 2.3        | 19.1            | 20.927.7       | 1.8             | 5.6                     |

Pos 25-sep-14

### Sample Type / Handling

### Sample Collection Information

|  |   |  |   |                             |                              |
|--|---|--|---|-----------------------------|------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB<sup>PDS</sup></b><br><del>4oz 80Z</del><br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>Chem<br>NBH14-0157 (HT) | <b>Latitude</b><br>41.67496 | <b>Longitude</b><br>70.91405 |
|--|---|--|---|-----------------------------|------------------------------|

Time: 0906

Surface biology: Snails

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>Rep 1<br>NBH14-0158 (HT) | <b>Latitude</b><br>41.67496 | <b>Longitude</b><br>70.91405 |
|---|--|--|-----------------------------|------------------------------|

Penetration(cm): 9      Time: 0911      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>Rep 2<br>NBH14-0159 (HT) | <b>Latitude</b><br>41.67496 | <b>Longitude</b><br>70.91405 |
|---|--|--|-----------------------------|------------------------------|

Penetration(cm): 8      Time: 0916      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>Rep 3<br>NBH14-0160 (HT) | <b>Latitude</b><br>41.67496 | <b>Longitude</b><br>70.91405 |
|---|--|--|-----------------------------|------------------------------|

Penetration(cm): 8      Time: 09:21      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|                   |   |
|-------------------|---|
| Station Comments: | Slight sheen on overlying water of<br>grabs |
| Completed By:     | PDS   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 111 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 6.6 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, 15-20 Kts   |     |                              |          |
| Sampling Staff: PDS/JMW/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 3.3        | 19.8            | 29.9           | 2.4             | 6.5                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0211 (HT) | 41.67361 | 70.91514  |

Time: 1336

Surface biology: worm, amphipod tubes

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0212 (HT) | 41.67359 | 70.91515  |

Penetration(cm): 9 Time: 1340 Number of Benthic bottles: 1

Surface biology: Amphipod Tubes, clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0213 (HT) | 41.67361 | 70.91515  |

Penetration(cm): 9 Time: 1346 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0214 (HT) | 41.67361 | 70.91515  |

Penetration(cm): 9 Time: 1351 Number of Benthic bottles: 1

Surface biology: worm Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | slight sheen on overlaying water of Chem grab; slight sheen on Rep1, Rep2, Rep3 |  |  |
| Completed By:     | PDS   |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 114 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 5.2 | Number of Unsuccessful Grabs | Ø        |
| Weather: Sunny, 10-15 Kts   |     |                              |          |
| Sampling Staff: PDS/JMW/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 2.1        | 19.7            | 29.6           | 3.2             | 7.2                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|-----------------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 3oz<br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0207 (HT) | 41.67224 | 70.91621  |

Time: 1432

Surface biology: amphipod tubes, clams, ulva

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0208 (HT) | 41.67225 | 70.91618  |

Penetration(cm): 9 Time: 1438 Number of Benthic bottles: 1

Surface biology: tubes, clams Volume of PSD sample (ml): 250

Amphipod

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0209 (HT) | 41.67226 | 70.91618  |

Penetration(cm): 9 Time: 1443 Number of Benthic bottles: 1

Surface biology: Amphipod tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0210 (HT) | 41.67226 | 70.91618  |

Penetration(cm): 9 Time: 1448 Number of Benthic bottles: 1

Surface biology: amphipod tubes Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | EPA Sampled collected @ 1453,<br>41.67225, 70.91620<br><span style="margin-left: 100px;">PDS 26-Sep-14</span> |  |  |
| Completed By:     | PDS   |  |  |



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 115 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 3.4 | Number of Unsuccessful Grabs | 0        |
| Weather: Overcast, 55kt     |     |                              |          |
| Sampling Staff: SAG/ADM/PDS |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.3        | 18.9            | 29.7           | 1.6             | 5.0                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|-----------------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 80%<br>GLASS<br>¾ FULL<br>4°C | chem<br>NBH14-0161 (HT) | 41.67223 | 70.91411  |

Time: 0955

Surface biology: None

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0162 (HT) | 41.67223 | 70.91412  |

Penetration(cm): 9      Time: 0958      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0163 (HT) | 41.67223 | 70.91413  |

Penetration(cm): None      Time: 1004      Number of Benthic bottles: 1

Surface biology: 9      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0164 (HT) | 41.67222 | 70.91413  |

Penetration(cm): 9      Time: 10:12      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|                   |  |
|-------------------|--|
| Station Comments: | Sheen on water surface,<br>Sheen on overlaying water of grab |
| Completed By:     | PDS  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 117 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 2.8 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, 10-15 KTS   |     |                              |          |
| Sampling Staff: PDS/JMW/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.53       | 19.8            | 29.4           | 2.9             | 7.4                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                                   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|---------------------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 26-50µm<br>GLASS<br>¾ FULL<br>4°C | NBH14-0203 (HT)<br>Chem | 41.67129 | 70.91741  |

Time: 1517

Surface biology: None

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0204 (HT)<br>Rep1 | 41.67129 | 70.91737  |

Penetration(cm): 8      Time: 1521      Number of Benthic bottles: 2

Surface biology: seaweed, amphipod      Volume of PSD sample (ml): 250

snails, tunicates

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0205 (HT)<br>Rep2 | 41.67130 | 70.91737  |

Penetration(cm): 9      Time: 1526      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0206 (HT)<br>Rep3 | 41.67132 | 70.91737  |

Penetration(cm): 9      Time: 1531      Number of Benthic bottles: 1

Surface biology: snails      Volume of PSD sample (ml): 250

|                   |                                   |
|-------------------|-----------------------------------|
| Station Comments: | Sheen on overlying water of grabs |
|                   |                                   |
| Completed By:     | PDS                               |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |                  |                              |          |
|-------------------|------------------|------------------------------|----------|
| Station ID        | 120              | Date(mm/dd/yy)               | 09/22/14 |
| Water depth (ft.) | 3.0              | Number of Unsuccessful Grabs |          |
| Weather:          | Sunny, 15-20 kts |                              |          |
| Sampling Staff:   | PDS/SAG/JMW      |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 1.08       | 21.16           | 30.46          | 3.82            | 6.57                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID          | Latitude | Longitude |
|----------------------------|-----------------------------|-----------------------------------|--------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0001<br>(PM) | 41.6691  | 70.9186   |

Time: 1524

Surface biology: Snails, clams

| PSD                         | Benthic  | Sample ID          | Latitude | Longitude |
|-----------------------------|--|--------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0002<br>(PM) |          |           |

Penetration(cm): 9 Time: 1530 Number of Benthic bottles: 2

Surface biology: Snails, clams Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0003 (PM) |          |           |

Penetration(cm): 8.5 Time: 1538 Number of Benthic bottles: 2

Surface biology: Snails, clams Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0004 (PM) |          |           |

Penetration(cm): 8.5 Time: 1545 Number of Benthic bottles: 2

Surface biology: Snails, clams Volume of PSD sample (ml): 240

|                   |                                 |
|-------------------|---------------------------------|
| Station Comments: | Slight sheen on overlying water |
| Completed By:     | PDS                             |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 121 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)           | 4.9 | Number of Unsuccessful Grabs | 0        |
| Weather: Overcast, <5 Kts   |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 2.0        | 20.5            | 30.2           | 5.2             | 5.4                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz GLASS</del><br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0253 (HT) | 41.66903 | 70.91643  |

Time: 1001  
Surface biology: Clams

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0254 (HT) | 41.66901 | 70.91642  |

Penetration(cm): 9      Time: 1008      Number of Benthic bottles: 1  
Surface biology: Clams      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0255 (HT) | 41.66901 | 70.91642  |

Penetration(cm): 9      Time: 1009      Number of Benthic bottles: 1  
Surface biology: Clams      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0256 (HT) | 41.66901 | 70.91642  |

Penetration(cm): 9      Time: 10:16      Number of Benthic bottles: 1  
Surface biology: Clams      Volume of PSD sample (ml): 250

|                   |
|-------------------|
| Station Comments: |
|                   |
|                   |
| Completed By: PDS |



**SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014**

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 123 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)           | 5.8 | Number of Unsuccessful Grabs | 1        |
| Weather: Overcast, <5Kt     |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

**Near Bottom YSI measurements**

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 2.8        | 20.5            | 30.3           | 5.2             | 5.6                     |

**Sample Type / Handling**

**Sample Collection Information**

| TOC                        | PSD                         | PCB                        | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|----------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0249 (HT) | 41.66815 | 70.91732  |

Time: 0906

Surface biology: None

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0250 (HT) | 41.66815 | 70.91729  |

Penetration(cm): 8.5 Time: 0914 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0251 (HT) | 41.66813 | 70.91729  |

Penetration(cm): 9 Time: 0926 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0252 (HT) | 41.66813 | 70.91728  |

Penetration(cm): 9 Time: 0926 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

Station Comments: EPA Sample collected @ 41.66814, 70.91730, 0943, slight sheen on overlaying water of Grabs  
 Grab 2 Benthos Rep 2 spilled, grab taken again  
 Completed By: PDS



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 125 | Date(mm/dd/yy)               | 09/22/14 |
| Water depth (ft.)           | 8.6 | Number of Unsuccessful Grabs | 4        |
| Weather: Sunny, 15-kts      |     |                              |          |
| Sampling Staff: JMW/SAG/PDS |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 5.07       | 20.95           | 30.47          | 4.14            | 6.29                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude | Longitude |
|----------------------------|-----------------------------|--|-----------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 8oz <sup>500µl</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0005 (Am) | 41.6668  | 70.9184   |

Time: 2:25 pm

Surface biology: mud snails, clams, small worm tubes

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0006 (Am) |          |           |

Penetration(cm): 9      Time: 2:32 pm      Number of Benthic bottles: 1

Surface biology: mud snails, clams, worm tubes      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0007 (Am) |          |           |

Penetration(cm): 9      Time: 1:41      Number of Benthic bottles: 1

Surface biology: Clams, small worm tubes      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0008 (Am) |          |           |

Penetration(cm): 8.5      Time: 1:54      Number of Benthic bottles: 1

Surface biology: clams, snails, worm tubes      Volume of PSD sample (ml): 240

|                   |                          |
|-------------------|--------------------------|
| Station Comments: | Sheen on overlying water |
|                   |                          |
| Completed By:     | PDS                      |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |                  |                              |          |
|-------------------|------------------|------------------------------|----------|
| Station ID        | 126              | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.) | 2.7              | Number of Unsuccessful Grabs | 0        |
| Weather:          | Sunny, 10-15 KTS |                              |          |
| Sampling Staff:   | PDS/SAG/MW       |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.52       | 18.8            | 30.3           | 7.7             | 5.4                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|---|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>PDS Sep-14</sup> 30%<br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0224 (HT) | 41.66674 | 70.91627  |

Time: 1054

Surface biology: ~~None~~ clams, snails, amphipod tubes

PDS 26 Sep-14

| PSD                         | Benthic  | Sample ID                | Latitude | Longitude |
|-----------------------------|--|--------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP 1<br>NBH14-0225 (HT) | 41.66676 | 70.91628  |

Penetration(cm): 9 Time: 1058 Number of Benthic bottles: 1

Surface biology: snails, clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                | Latitude | Longitude |
|-----------------------------|--|--------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP 2<br>NBH14-0226 (HT) | 41.66675 | 70.91628  |

Penetration(cm): 9 Time: 1103 Number of Benthic bottles: 2

Surface biology: snails, clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                | Latitude | Longitude |
|-----------------------------|--|--------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP 3<br>NBH14-0227 (HT) | 41.66676 | 70.91628  |

Penetration(cm): 9 Time: 1106 Number of Benthic bottles: 2

Surface biology: snails, clams Volume of PSD sample (ml): 250

|                   |  |  |  |
|-------------------|--|--|--|
| Station Comments: | In active dredge area L on eastern side, 2 meters from marsh |  |  |
| Completed By:     | PDS  |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 128 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)           | 9.8 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, < 5 Kts     |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 6.8        | 20.4            | 30.6           | 4.9             | 5.3                     |

### Sample Type / Handling

### Sample Collection Information

| TOC<br>4oz GLASS<br>¼ FULL<br>4°C | PSD<br>Quart size<br>Ziploc<br>4°C | PCB<br><del>4oz GLASS</del><br>4oz GLASS<br>¼ FULL<br>4°C | Sample ID               | Latitude | Longitude |
|-----------------------------------|------------------------------------|---|-------------------------|----------|-----------|
|                                   |                                    |   | Chem<br>NBH14-0245 (HT) | 41.66539 | 70.91734  |

Time: 0806

Surface biology: clams

| PSD<br>Quart size<br>Ziploc<br>4°C | Benthic<br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Sample ID                | Latitude | Longitude |
|------------------------------------|---|--------------------------|----------|-----------|
|                                    |   | Rep 1<br>NBH14-0246 (HT) | 41.66539 | 70.91730  |

Penetration(cm): 9      Time: 0813      Number of Benthic bottles: 1

Surface biology: clams      Volume of PSD sample (ml): 250

| PSD<br>Quart size<br>Ziploc<br>4°C | Benthic<br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Sample ID                | Latitude | Longitude |
|------------------------------------|---|--------------------------|----------|-----------|
|                                    |   | Rep 2<br>NBH14-0247 (HT) | 41.66539 | 70.91730  |

Penetration(cm): 8      Time: 0823      Number of Benthic bottles: 1

Surface biology: clams      Volume of PSD sample (ml): 250

| PSD<br>Quart size<br>Ziploc<br>4°C | Benthic<br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Sample ID                | Latitude | Longitude |
|------------------------------------|---|--------------------------|----------|-----------|
|                                    |   | Rep 3<br>NBH14-0248 (HT) | 41.66539 | 70.91730  |

Penetration(cm): 8.5      Time: 0832      Number of Benthic bottles: 1

Surface biology: clams      Volume of PSD sample (ml): 250

|                   |   |
|-------------------|---|
| Station Comments: | Slight sheen on overlaying                    |
|                   | water of grabs                                |
|                   | EPA Sample collected 0840, 41.66540, 70.91730 |
| Completed By:     | PDS   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 130 | Date(mm/dd/yy)               | 09/22/14 |
| Water depth (ft.)           | 6.5 | Number of Unsuccessful Grabs | 2        |
| Weather: Sunny, 15-20Kts    |     |                              |          |
| Sampling Staff: PDS/SAG/JMW |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 3.88       | 20.67           | 30.57          | 2.49            | 5.42                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID       | Latitude | Longitude |
|----------------------------|-----------------------------|-----------------------------------|-----------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0009 (RM) | 41.6641  | 70.9183   |

Time: 1116

Surface biology: mud snails

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0010 (RM) |          |           |

Penetration(cm): 9      Time: 1125      Number of Benthic bottles: 1

Surface biology: mud snails      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0011 (RM) |          |           |

Penetration(cm): 9      Time: 1132      Number of Benthic bottles: 1

Surface biology: mud snails      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0012 (RM) |          |           |

Penetration(cm): 8      Time: 1140      Number of Benthic bottles: 1

Surface biology: mud snails      Volume of PSD sample (ml): 240

|   |
|---|
| Station Comments: moved station because |
| coordinates provided are onshore        |
| Slight Sheen                            |
| Completed By: PDS                       |



**SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014**

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 131 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 4.9 | Number of Unsuccessful Grabs | 0        |
| Weather: overcast, 5-10Kts  |     |                              |          |
| Sampling Staff: ADM/PDS/SAG |     |                              |          |

**Near Bottom YSI measurements**

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 1.9        | 19.0            | 30.1           | 3.9             | 5.9                     |

**Sample Type / Handling**

**Sample Collection Information**

| TOC                        | PSD                         | PCB, PDS                                   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>25-300-14<br>GLASS<br>¾ FULL<br>4°C | chem<br>NBH14-0173 (HT) | 41.66398 | 70.91628  |

Time: 1514

Surface biology: Clams, worms

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Repl<br>NBH14-0174 (HT) | 41.66397 | 70.91628  |

Penetration(cm): 9 Time: 1520 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP2<br>NBH14-0175 (HT) | 41.66397 | 70.91628  |

Penetration(cm): 9 Time: 1528 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | REP3<br>NBH14-0176 (HT) | 41.66398 | 70.91627  |

Penetration(cm): 9 Time: 1532 Number of Benthic bottles: 1

Surface biology: Clams Volume of PSD sample (ml): 250

Station Comments: sneen on overlaying water of grab

Completed By: PDS



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                         |     |                              |          |
|-------------------------|-----|------------------------------|----------|
| Station ID              | 131 | Date(mm/dd/yy)               | 09/30/14 |
| Water depth (ft.)       | 7.8 | Number of Unsuccessful Grabs | 0        |
| Weather: Drizzle, 45KTS |     |                              |          |
| Sampling Staff: JMW/PDS |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|-----------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C |           |          |           |

Time: \_\_\_\_\_

Surface biology: \_\_\_\_\_

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm): \_\_\_\_\_

Time: \_\_\_\_\_

Number of Benthic bottles: \_\_\_\_\_

Surface biology: \_\_\_\_\_

Volume of PSD sample (ml): \_\_\_\_\_

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm): \_\_\_\_\_

Time: \_\_\_\_\_

Number of Benthic bottles: \_\_\_\_\_

Surface biology: \_\_\_\_\_

Volume of PSD sample (ml): \_\_\_\_\_

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm): \_\_\_\_\_

Time: \_\_\_\_\_

Number of Benthic bottles: \_\_\_\_\_

Surface biology: \_\_\_\_\_

Volume of PSD sample (ml): \_\_\_\_\_

|                   |                          |
|-------------------|--------------------------|
| Station Comments: | EPA sample collected @   |
|                   | 41.66401, 70.91631; 0927 |
|                   |                          |
| Completed By:     | PDS                      |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 134 | Date(mm/dd/yy)               | 09/22/14 |
| Water depth (ft.)           | 7.3 | Number of Unsuccessful Grabs |          |
| Weather: Sunny, 15-20 KTS   |     |                              |          |
| Sampling Staff: PDS/SAG/JMW |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 4.63       | 20.81           | 30.30          | 2.87            | 7.54                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude | Longitude |
|----------------------------|-----------------------------|--|-----------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 2oz <sup>SMT 9/22/14</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0013 (AM) | 41.6627  | 70.9174   |

Time: 1208

Surface biology: Clams, Snails

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0014 (AM) |          |           |

Penetration(cm): 9      Time: 1215      Number of Benthic bottles: 1

Surface biology: Clams, Snails      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0015 (AM) |          |           |

Penetration(cm): 9      Time: 1227      Number of Benthic bottles: 1

Surface biology: Clams, Snails      Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0016 (AM) |          |           |

Penetration(cm): 9      Time: 1233      Number of Benthic bottles: 1

Surface biology: Clams, Snail      Volume of PSD sample (ml): 240

|                   |                                 |
|-------------------|---------------------------------|
| Station Comments: | Slight sheen in overlying water |
|                   |                                 |
| Completed By:     | PDS                             |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 135 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 1.9 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, <5Kts       |     |                              |          |
| Sampling Staff: PDS/ADM,SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.2        | 18.4            | 30.2           | 2.0             | 6.2                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID        | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0065 (ADM) | 41.6630  | 70.9153   |

Time: 0909

Surface biology: Snail, ulva

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0066 (ADM) |          |           |

Penetration(cm): 0912<sup>9</sup> Time: 0912 Number of Benthic bottles: 1

Surface biology: Snails Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0067 (ADM) |          |           |

Penetration(cm): 8.5 Time: 0917 Number of Benthic bottles: 1

Surface biology: Hermit crab, snail Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0068 (ADM) |          |           |

Penetration(cm): 9 cm Time: 09:24 Number of Benthic bottles: 1

Surface biology: Snails Volume of PSD sample (ml): 250

Station Comments: moved station ~15# West, coordinates provided were in the marsh, approximately 10 ft from spartina edge

Completed By:

① PDS 23-Sep-14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 138 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 6.3 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, 10-15kts    |     |                              |          |
| Sampling Staff: PDS/JMW/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 3.0        | 18.7            | 30.5           | 3.0             | 5.5                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                                      | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 26-Sept-14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0220 (HT)<br>Chem | 41.66129 | 70.92053  |

Time: 0924

Surface biology: ulva

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0221 (HT)<br>rep1 | 41.66129 | 70.92053  |

Penetration(cm): 9 Time: 0929 Number of Benthic bottles: 1

Surface biology: snails, ulva Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0222 (HT)<br>rep2 | 41.66129 | 70.92053  |

Penetration(cm): 9 Time: 0936 Number of Benthic bottles: 1

Surface biology: snails, amphipods, tubers Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0223 (HT)<br>rep3 | 41.66129 | 70.92053  |

Penetration(cm): 9 Time: 0941 Number of Benthic bottles: 1

Surface biology: snail, ulva, amphipod tubers Volume of PSD sample (ml): 250

Station Comments: EPA sampled @ 0950; 41.66129, 70.92053

Completed By: PDS



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 139 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 2.9 | Number of Unsuccessful Grabs | 0        |
| Weather: Drizzle, 5-10kts   |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.1        | 18.9            | 29.7           | 20.1            | 6.0                     |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |   |                             |                              |
|--|---|--|---|-----------------------------|------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br><del>4oz</del> 802<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>Chem<br>NBH14-0169 (HT) | <b>Latitude</b><br>41.66129 | <b>Longitude</b><br>70.91843 |
|--|---|--|---|-----------------------------|------------------------------|

Time: 1411

Surface biology: None

|   |  |   |                             |                              |
|---|--|---|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>REP1<br>NBH14-0170 (HT) | <b>Latitude</b><br>41.66129 | <b>Longitude</b><br>70.91843 |
|---|--|---|-----------------------------|------------------------------|

Penetration(cm): 9      Time: 1420      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|   |  |   |                             |                              |
|---|--|---|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>REP2<br>NBH14-0171 (HT) | <b>Latitude</b><br>41.66127 | <b>Longitude</b><br>70.91844 |
|---|--|---|-----------------------------|------------------------------|

Penetration(cm): 9      Time: 1422      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>Rep 3<br>NBH14-0172 (HT) | <b>Latitude</b><br>41.66129 | <b>Longitude</b><br>70.91842 |
|---|--|--|-----------------------------|------------------------------|

Penetration(cm): 9      Time: 1430      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | ① Dup collected @ 1416 NBH14-0232<br>41.66129, 70.91843 |  |  |
|                   | EPA Sample collected @ 14:32 41.66127 70.91845          |  |  |
| Completed By:     | PDS   |  |  |



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 140 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 6.4 | Number of Unsuccessful Grabs | 3        |
| Weather: Sunny, 5-10Kts     |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 3.4        | 20.6            | 30.2           | 8.2             | 7.5                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID       | Latitude | Longitude                   |
|----------------------------|-----------------------------|-------------------------------|-----------------|----------|-----------------------------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0049 (AM) | 41.6613  | PDS<br>23 Sep-14<br>70.9163 |

Time: 1457

Surface biology: Clams

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0050 (AM) |          |           |

Penetration(cm): 9      Time: 1502      Number of Benthic bottles: 1

Surface biology: Clams, snails      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0051 (AM) |          |           |

Penetration(cm): 9      Time: 1406-1506      Number of Benthic bottles: 1

Surface biology: Clams      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0052 (AM) |          |           |

Penetration(cm): 9      Time: 1511      Number of Benthic bottles: 1

Surface biology: Clams      Volume of PSD sample (ml): 250

Station Comments:

Completed By: PDS

① PDS 23-Sep-14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 146 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 9.0 | Number of Unsuccessful Grabs | 4        |
| Weather: Sunny, 15-20KES    |     |                              |          |
| Sampling Staff: ADM/PDS/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 61         | 20.1            | 30.4           | 7.4             | 5.6                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID       | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|-----------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0045 (AM) | 41.65991 | 70.91737  |

Time: 1543

Surface biology: None

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0046 (AM) |          |           |

Penetration(cm): 9      Time: 1546      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0047 (AM) |          |           |

Penetration(cm): 9      Time: 1600      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0048 (AM) |          |           |

Penetration(cm): 8.5      Time: 1603      Number of Benthic bottles: 2x (AM) 9/24

Surface biology: None      Volume of PSD sample (ml): 250

|                   |                              |  |  |
|-------------------|------------------------------|--|--|
| Station Comments: | EPA sample collected at 1609 |  |  |
|                   |                              |  |  |
| Completed By:     | PDS                          |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 147 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 4.5 | Number of Unsuccessful Grabs | 4        |
| Weather: sunny, < 5 Kts     |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 1.5        | 19.6            | 30.7           | 2.7             | 5.7                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID        | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0061 (PDS) | 41.6599  | 70.9153   |

Time: 1012

Surface biology: snails, ulva

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0062 (PDS) |          |           |

Penetration(cm): 9      Time: 1016      Number of Benthic bottles: 1

Surface biology: snails      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0063 (PDS) |          |           |

Penetration(cm): 9      Time: 1023      Number of Benthic bottles: 1

Surface biology: snails      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID        | Latitude | Longitude |
|-----------------------------|--|------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0064 (PDS) |          |           |

Penetration(cm): 8      Time: 1029      Number of Benthic bottles: 1

Surface biology: snails      Volume of PSD sample (ml): 250

|                   |
|-------------------|
| Station Comments: |
|                   |
|                   |
| Completed By: PDS |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 150 | Date(mm/dd/yy)               | 09/22/14 |
| Water depth (ft.)           | 10  | Number of Unsuccessful Grabs | 1        |
| Weather: Sunny, <5 Kt       |     |                              |          |
| Sampling Staff: PDS/JMW/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft)                                   | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|--|-----------------|----------------|-----------------|-------------------------|
| 2.3 <sup>005</sup><br><del>2.3</del><br>7.44 | 20.35           | 30.56          | 2.57            | 5.24                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude | Longitude |
|----------------------------|-----------------------------|--|-----------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz 3oz</del><br>GLASS<br>¾ FULL<br>4°C | NBH14-0017 (Am) | 41.65854 | 70.91849  |

Time: 0813

Surface biology: perwinkle snails, clams

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0018 (Am) |          |           |

Penetration(cm): 9 Time: 08280 Number of Benthic bottles: 2

Surface biology: clams, Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0019 (Am) |          |           |

Penetration(cm): 9 Time: 08390 Number of Benthic bottles: 1

Surface biology: clams Volume of PSD sample (ml): 240

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0020 (Am) |          |           |

Penetration(cm): 9 Time: 0956 Number of Benthic bottles: 1

Surface biology: clams Volume of PSD sample (ml): 240

|  |  |
|--|--|
| Station Comments:                        | Spotty sheen on benthic sample collections |
| Benthic Grab 1-0928, Benthic Grab 2-0939 |  |
| Completed By: PDS                        |  |

① PDS 22-Sep-14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 151 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 5.3 | Number of Unsuccessful Grabs | 2        |
| Weather: Sunny, <5kts       |     |                              |          |
| Sampling Staff: ADM/PDS/SAG |     |                              |          |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 2.3        | 19.6            | 30.4           | 6.2             | 6.1                     |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |  |                            |                             |
|--|---|---|--|----------------------------|-----------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>4oz<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br><del>NBH14-0057 (AM)</del> | <b>Latitude</b><br>41.6585 | <b>Longitude</b><br>70.9163 |
|--|---|---|--|----------------------------|-----------------------------|

Time: 1110  
 Surface biology: None  
 Resampled on 9/25/2014; This sample was not submitted for analysis. (AM) 9/26/2014

|   |  |                                     |                 |                  |
|---|--|-------------------------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0058 (AM) | <b>Latitude</b> | <b>Longitude</b> |
|---|--|-------------------------------------|-----------------|------------------|

Penetration(cm): 8      Time: 1114      Number of Benthic bottles: 1  
 Surface biology: None      Volume of PSD sample (ml): 250

|   |  |                                     |                 |                  |
|---|--|-------------------------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0059 (AM) | <b>Latitude</b> | <b>Longitude</b> |
|---|--|-------------------------------------|-----------------|------------------|

Penetration(cm): 8.5      Time: 1120      Number of Benthic bottles: 0 + 2 = 2 bottles (AM) 9/24  
 Surface biology: None      Volume of PSD sample (ml): 250

|   |  |                                     |                 |                  |
|---|--|-------------------------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0060 (AM) | <b>Latitude</b> | <b>Longitude</b> |
|---|--|-------------------------------------|-----------------|------------------|

Penetration(cm): 9      Time: 1128      Number of Benthic bottles: 1 (AM) 9/24  
 Surface biology: Shrimp, snail, hermit crab, Fish      Volume of PSD sample (ml): 250

|   |
|---|
| Station Comments: EPA Sample collected @ 1132 |
|   |
| Completed By: PDS                             |

① PDS 23-Sep-14 A-46



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 151 | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 2.0 | Number of Unsuccessful Grabs | 0        |
| Weather: drizzle            |     |                              |          |
| Sampling Staff: ADM/PDS/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID          | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|--------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | chem<br>NBH14-0057 | 41.65850 | 70.91637  |

Time: 1240 (15) Sample discarded and recollected on 30-Sep-14

Surface biology: None

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|                   |                   |
|-------------------|-------------------|
| Station Comments: | Redo of Chem Grab |
|                   |                   |
| Completed By:     | PDS               |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |               |                              |          |
|-------------------|---------------|------------------------------|----------|
| Station ID        | 151           | Date(mm/dd/yy)               | 09/30/14 |
| Water depth (ft.) | 6.2           | Number of Unsuccessful Grabs | 0        |
| Weather:          | Rain, 5-10KTS |                              |          |
| Sampling Staff:   | PDS/JMW       |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |                          |                             |                              |
|--|---|--|--------------------------|-----------------------------|------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> <sup>PDS</sup><br><del>4oz</del> <sup>2-5oz</sup> 802<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>Chem | <b>Latitude</b><br>41.65850 | <b>Longitude</b><br>70.91636 |
|--|---|--|--------------------------|-----------------------------|------------------------------|

Time: 1009

Surface biology: None

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|                   |                         |  |  |
|-------------------|-------------------------|--|--|
| Station Comments: | Chemistry sample retake |  |  |
|                   |                         |  |  |
| Completed By:     | PDS                     |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 152 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 5.7 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, 10-15KTS    |     |                              |          |
| Sampling Staff: PDS/SAG/JMW |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 1.83       | 18.5            | 30.40          | 2.96            | 5.57                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|-----------------------------------|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 8oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0215 (HT)<br>Chem | 41.65848 | 70.91423  |

Time: 0821

Surface biology: Clams, mud snails, amphipods, ulva

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0216 (HT) | 41.65848 | 70.91423  |

Penetration(cm): 9      Time: 0826      Number of Benthic bottles: 1

Surface biology: amphipod tubes      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0217 (HT) | 41.65848 | 70.91423  |

Penetration(cm): 9      Time: 0833      Number of Benthic bottles: 1

Surface biology: Clams, ulva, shrimp      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0218 (HT) | 41.65848 | 70.91423  |

Penetration(cm): 9      Time: 0837      Number of Benthic bottles: 2

Surface biology: Clams, ulva      Volume of PSD sample (ml): 250

|                   |                                    |  |  |
|-------------------|------------------------------------|--|--|
| Station Comments: | EPA Sampled Collected @ 0841       |  |  |
|                   | 41.65848, 70.91423, snails, clams, |  |  |
|                   | amphipod tubes, 9cm                |  |  |
| Completed By:     | PDS                                |  |  |

Dup Collected @ 0859 41.65848, 70.91423 — NBH14-0219  
Clams, ulva



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |      |                              |          |
|-----------------------------|------|------------------------------|----------|
| Station ID                  | 154  | Date(mm/dd/yy)               | 09/25/14 |
| Water depth (ft.)           | 16.4 | Number of Unsuccessful Grabs | 1        |
| Weather: Raining, < 5Kts    |      |                              |          |
| Sampling Staff: ADM/PDS/SAG |      |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 12.8       | 18.9            | 30.5           | 3.3             | 5.4                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|---|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>185 25 31 44</sup><br><del>302</del><br>GLASS<br>¾ FULL<br>4°C | chem<br>NBH14-0165 (HT) | 41.65712 | 70.91742  |

Time: 1258

Surface biology: Quahogs

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep1<br>NBH14-0166 (HT) | 41.65712 | 70.91742  |

Penetration(cm): 9      Time: 1313      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep2<br>NBH14-0167 (HT) | 41.65712 | 70.91742  |

Penetration(cm): 8      Time: 1318      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep3<br>NBH14-0168 (HT) | 41.65715 | 70.91742  |

Penetration(cm): 8cm      Time: 1330      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

Station Comments:

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Completed By: PDS

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 155 | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 2.3 | Number of Unsuccessful Grabs | 0        |
| Weather: Sunny, <5Kts       |     |                              |          |
| Sampling Staff: ADM/PDS/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.1        | 17.9            | 30.1           | 2.3             | 5.6                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID                                   | Latitude                            | Longitude |
|----------------------------|-----------------------------|-------------------------------|---|-------------------------------------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0069 (AM)<br>41.6571<br>PDS 23-Sep-14 | 41.6571<br>70.9153<br>PDS 23-Sep-14 | 70.9153   |

Time: 754

Surface biology: Clams, snails (1)

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0070 (AM) |          |           |

Penetration(cm): 8.5      Time: 0801      Number of Benthic bottles: 2

Surface biology: Clams, snails      Volume of PSD sample (ml): ~~250~~ 250

PDS 22-Sep-14

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0071 (AM) |          |           |

Penetration(cm): 9      Time: 0812      Number of Benthic bottles: 2 ~~25~~ PDS 23-Sep-14

Surface biology: ~~snails, ulva~~      Volume of PSD sample (ml): 250

PDS 23-Sep-14

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0072 (AM) |          |           |

Penetration(cm): 8.5      Time: 0825      Number of Benthic bottles: 2

Surface biology: snails, ulva      Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | At marsh edge. Grabs Taken ~10' from Spartina edge      |  |  |
| Completed By:     | PDS   |  |  |
|                   | ① Chemistry sample discarded & recollected on 26-Sep-14 |  |  |



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 155 | Date(mm/dd/yy)               | 09/26/14 |
| Water depth (ft.)           | 2.5 | Number of Unsuccessful Grabs |          |
| Weather: Sunny, 10-15 Kts   |     |                              |          |
| Sampling Staff: JMW/PDS/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID | Latitude | Longitude |
|----------------------------|-----------------------------|-------------------------------|-----------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | Chem      | 41.65718 | 70.91531  |

Time: 0806 ①

Surface biology: None

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|                   |   |
|-------------------|---|
| Station Comments: | Chemistry Retake                              |
|                   | ① Chemistry sample discarded + recollected on |
|                   | 30-Sep-14                                     |
| Completed By:     | PDS   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |               |                              |          |
|-------------------|---------------|------------------------------|----------|
| Station ID        | 155           | Date(mm/dd/yy)               | 09/30/14 |
| Water depth (ft.) | 3.0           | Number of Unsuccessful Grabs | 0        |
| Weather:          | Rain, 5-10KTS |                              |          |
| Sampling Staff:   | PDS/JMW       |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                              |                                 |                                  |
|--|---|---|------------------------------|---------------------------------|----------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <sup>304P-14</sup><br><del>4oz 080z</del><br><b>PCB PDS</b><br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br><br>Chem | <b>Latitude</b><br><br>41.65715 | <b>Longitude</b><br><br>70.91532 |
|--|---|---|------------------------------|---------------------------------|----------------------------------|

Time: 1025

Surface biology: None

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  |                  |                 |                  |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

|                   |                       |
|-------------------|-----------------------|
| Station Comments: | Chemistry Grab Retake |
|                   |                       |
| Completed By:     | PDS                   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |      |                              |          |
|-----------------------------|------|------------------------------|----------|
| Station ID                  | 202  | Date(mm/dd/yy)               | 09/23/14 |
| Water depth (ft.)           | 14.9 | Number of Unsuccessful Grabs | 6        |
| Weather: Sunny, 5-10kts     |      |                              |          |
| Sampling Staff: PDS/ADM/SAG |      |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 11.8       | 19.8            | 30.52          | 4.3             | 5.6                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID       | Latitude             | Longitude            |
|----------------------------|-----------------------------|-------------------------------|-----------------|----------------------|----------------------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0053 (AM) | 41.6553 <sup>①</sup> | 70.9171 <sup>①</sup> |

Time: 1353      41.65535      70.91702

Surface biology: None

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0054 (AM) |          |           |

Penetration(cm): 8.5      Time: 1458      Number of Benthic bottles: 2

Surface biology: None      1358<sup>①</sup>      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0055 (AM) |          |           |

Penetration(cm): 8.5      Time: 1404      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0056 (AM) |          |           |

Penetration(cm): 8      Time: 1408      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

Station Comments: A Lot of Shells, difficult to get grabs

① After multiple unsuccessful grabs full of shells, relocated station by ~20'

Completed By:

EB  
① JMT 9/25/14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |                        |                              |         |
|---|------------------------|------------------------------|---------|
| Station ID                                | 204                    | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.)                         | 0 <del>15.4</del> 25.3 | Number of Unsuccessful Grabs | 1       |
| Weather: Rain, NE wind ~10 kts, calm seas |                        |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran  |                        |                              |         |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 13.20      | 19.72           | 32.97          | 6.02            | 5.97                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                                |                              |                               |
|--|---|---|--------------------------------|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>4oz <sup>mer</sup> GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0326 | <b>Latitude</b><br>41.652629 | <b>Longitude</b><br>70.919260 |
|--|---|---|--------------------------------|------------------------------|-------------------------------|

Time: 1436

Surface biology: seed clams worm tubes

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0327 | <b>Latitude</b><br>41.652622 | <b>Longitude</b><br>70.919232 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.0 Time: 1417 Number of Benthic bottles: 1

Surface biology: seed clams, worm tubes Volume of PSD sample (ml): 250

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0328 | <b>Latitude</b><br>41.652631 | <b>Longitude</b><br>70.919250 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.0 Time: 1425 Number of Benthic bottles: 1

Surface biology: seed clams worm tubes Volume of PSD sample (ml): 250

minor sheen

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0329 | <b>Latitude</b><br>41.652632 | <b>Longitude</b><br>70.919234 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.5 Time: 1445 Number of Benthic bottles: 2

Surface biology: seed clams, tubes Volume of PSD sample (ml): 250

### Station Comments:

① very variable bottom

25.3' at the center of the station. YSI cast done while at a bottom depth of 15.4'

Completed By:

*[Signature]*

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                                    |     |                              |          |
|------------------------------------|-----|------------------------------|----------|
| Station ID                         | 207 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)                  | 3.2 | Number of Unsuccessful Grabs | 2        |
| Weather: <u>Overcast, &lt;5Kts</u> |     |                              |          |
| Sampling Staff: <u>PDS/ADM/SAG</u> |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.3        | 20.5            | 30.8           | 11.1            | 6.7                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|---|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz-5703</del><br>4oz-5703<br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0265 (HT) | 41.64992 | 70.92138  |

Time: 1526

Surface biology: None PDS 29-Sep-14 Worms

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0266 (HT) | 41.64992 | 70.92138  |

Penetration(cm): 8.5 Time: 1530 Number of Benthic bottles: 2

Surface biology: None Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0267 (HT) | 41.64991 | 70.92139  |

Penetration(cm): 9 Time: 1534 Number of Benthic bottles: 2

Surface biology: None Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                                      | Latitude | Longitude |
|-----------------------------|--|--|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0268 (HT)<br>1551<br>1851 PDS 14 | 41.64991 | 70.92139  |

Penetration(cm): 9 Time: 1541 21-34 Number of Benthic bottles: 2

Surface biology: Hermit Crab Volume of PSD sample (ml): 250

|   |
|---|
| Station Comments: <u>Sheen on overlaying water of grab; EPA Sample collected 41.64991, 70.92139</u> |
| <u>1541</u>   |
| Completed By: <u>PDS</u>  |



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 208 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)           | 3.8 | Number of Unsuccessful Grabs | 1        |
| Weather: Sunny, < 5 Kts     |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 0.7        | 20.4            | 30.9           | 2.7             | 6.8                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB <sub>sp5</sub>                           | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz</del> 8oz<br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0261 (HT) | 41.64991 | 70.91720  |

Time: 1439

Surface biology: None

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0262 (HT) | 41.64989 | 70.91723  |

Penetration(cm): 9      Time: 1450      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0263 (HT) | 41.64993 | 70.91720  |

Penetration(cm): 9      Time: 1454      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0264 (HT) | 41.64993 | 70.91720  |

Penetration(cm): 8      Time: 1501      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

Station Comments:

Completed By: PDS

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                               | 211  | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.)                        | 12.9 | Number of Unsuccessful Grabs | 2       |
| Weather: Rain, NE wind ~10 KTS           |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran |      |                              |         |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 10.67      | 19.76           | 33.11          | 2.61            | 6.28                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                                |                              |                               |
|--|---|---|--------------------------------|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> <i>mer</i><br>4oz <i>9/30/14</i><br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0322 | <b>Latitude</b><br>41.647170 | <b>Longitude</b><br>70.919280 |
|--|---|---|--------------------------------|------------------------------|-------------------------------|

Time: 1344

Surface biology: Seed clams tubes sheen l quohog

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0323 | <b>Latitude</b><br>41.647171 | <b>Longitude</b><br>70.919280 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.5 Time: 1325 Number of Benthic bottles: 1

Surface biology: seed clams, tubes, sheen Volume of PSD sample (ml): 250

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0324 | <b>Latitude</b><br>41.647169 | <b>Longitude</b><br>70.919275 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.5 Time: 1333 Number of Benthic bottles: 1

Surface biology: Seed clams, tubes sheen Volume of PSD sample (ml): 250

|   |  |                                |                              |                               |
|---|--|--------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0325 | <b>Latitude</b><br>41.647164 | <b>Longitude</b><br>70.919279 |
|---|--|--------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.3 Time: 1351 Number of Benthic bottles: 1

Surface biology: seed clams sheen Volume of PSD sample (ml): 250

|                                     |
|-------------------------------------|
| Station Comments:                   |
|                                     |
|                                     |
| Completed By: <i>M. Fitzpatrick</i> |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                   | 212  | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.)                            | 10.8 | Number of Unsuccessful Grabs | 0       |
| Weather: Overcast NE wind 5-10 kts calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran     |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 8.01       | 19.72           | 33.03          | 3.96            | 6.10                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB <sup>max</sup>                           | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8oz <sup>max</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0318 (HT) | 41.647139 | 70.915068 |

Time: 1241

Surface biology: amphipods clams tubes

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0319 (HT) | 41.647141 | 70.915062 |

Penetration(cm): 9.5 Time: 1224 Number of Benthic bottles: 1

Surface biology: ~~quahogs~~ Amphipods, Clam shells, Tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0320 (HT) | 41.647141 | 70.915065 |

Penetration(cm): 9.2 Time: 1232 Number of Benthic bottles: 2

Surface biology: sm. clams amphipods Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0321 (HT) | 41.647134 | 70.915077 |

Penetration(cm): 8.7 Time: 1254 Number of Benthic bottles: 1

Surface biology: amphipods Volume of PSD sample (ml): 250

### Station Comments:

|  |       |             |           |                          |
|--|-------|-------------|-----------|--------------------------|
| EPA sample - use 2 grabs - 1 <sup>st</sup> grab had 4 lg Quahogs |       |             |           |                          |
| ① grab 1:  | 12:47 | 41.647139 / | 70.915066 | 9.0m not enough material |
| ② grab 2:  | 13:00 | 41.647140 / | 70.915070 | pen-8.5                  |
| Completed By: <i>M. Fitzpatrick</i>                              |       |             |           |                          |

① both grabs contained quahogs, amphipods

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 216  | Date(mm/dd/yy)               | 09/22/2014 |
| Water depth (ft.)  | 10.4 | Number of Unsuccessful Grabs | 2          |
| Weather: SW 10 Kts, Partly Cloudy, 30% clouds, SEAS < 0.5 FT |      |                              |            |
| Sampling Staff: MATT FITZPATRICK, PATRICK COWAN              |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 9.41       | 20.29           | 32.9           | 1.16            | 5.83                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID   | Latitude  | Longitude |
|----------------------------|-----------------------------|-----------------------------------|---|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 4oz<br>GLASS<br>¾ FULL<br>4°C | <del>216 REP 1</del> <sup>9/22</sup><br>9/22/14<br>(E)<br>NBH14-0025 (AM) | 41.644431 | 70.917182 |

Time: 9:37

Surface biology: None

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude  |
|-----------------------------|--|----------------------------------|-----------|------------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 216 REP 2 (E)<br>NBH14-0026 (AM) | 41.644417 | 70.9171803 |

Penetration(cm): 9      Time: 9:14      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 216 REP 2 (D)<br>NBH14-0027 (AM) | 41.644409 | 70.917142 |

Penetration(cm): 9.5      Time: 9:26      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 216 REP 3 (F)<br>NBH14-0028 (AM) | 41.644437 | 70.917162 |

Penetration(cm): 9.5      Time: 9:43      Number of Benthic bottles: 1

Surface biology: Salps      Volume of PSD sample (ml): 250

Station Comments:

Completed By:

DJB  
JMF  
9/23/14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                     | 217  | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.)                              | 12.1 | Number of Unsuccessful Grabs | 1       |
| Weather: overcast, NE wind 5-10 kts, calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran       |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 9.2        | 19.57           | 32.99          | 3.25            | 5.89                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                             | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---------------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0314 (HT) | 41.644400 | 70.912990 |

Time: 1147

Surface biology: a few sm. tubes

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0315 (HT) | 41.644404 | 70.912979 |

Penetration(cm): 8.5      Time: 1134      Number of Benthic bottles: 1

Surface biology: sm. tubes      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude   | Longitude |
|-----------------------------|--|-----------------|------------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0316 (HT) | 41.6443915 | 70.912994 |

Penetration(cm): 8.0      Time: 1140      Number of Benthic bottles: 1

Surface biology: sm tubes      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0317 (HT) | 41.644394 | 70.912993 |

Penetration(cm): 9.0      Time: 1152      Number of Benthic bottles: 1

Surface biology: Quohog tubes macroalgae      Volume of PSD sample (ml): 250

Station Comments:

Completed By: *Math R Bz*



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| Station ID                  | 218 | Date(mm/dd/yy)               | 09/29/14 |
| Water depth (ft.)           | 3.5 | Number of Unsuccessful Grabs | 23       |
| Weather: overcast, < 5 kts  |     |                              |          |
| Sampling Staff: PDS/ADM/SAG |     |                              |          |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| .5         | 20.6            | 30.9           | 2.5             | 6.6                     |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB <sup>PDS</sup>   | Sample ID               | Latitude | Longitude |
|----------------------------|-----------------------------|--|-------------------------|----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | <del>4oz</del> <sup>3oz</sup> <del>GLASS</del><br>GLASS<br>¾ FULL<br>4°C | Chem<br>NBH14-0257 (HT) | 41.64437 | 70.90881  |

Time: 1247

Surface biology: snails, clams, amphipod tubes

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep1<br>NBH14-0258 (HT) | 41.64433 | 70.90885  |

Penetration(cm): 8      Time: 1302      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude  | Longitude |
|-----------------------------|--|-------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep2<br>NBH14-0259 (HT) | 41.641420 | 70.90885  |

Penetration(cm): 8.5      Time: 1402      Number of Benthic bottles: 2

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID               | Latitude | Longitude |
|-----------------------------|--|-------------------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | Rep3<br>NBH14-0260 (HT) | 41.64420 | 70.90885  |

Penetration(cm): 8      Time: 2:05 <sup>PM</sup> 09/29/14      Number of Benthic bottles: 3

Surface biology: None      Volume of PSD sample (ml): 250

|   |
|---|
| Station Comments: Two grabs collected for Chemistry |
|   |
| Completed By: PDS                                   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 220  | Date(mm/dd/yy)               | 09/22/2014 |
| Water depth (ft.)  | 34.0 | Number of Unsuccessful Grabs | 1          |
| Weather: SW 15-20 kts, Sunny, 20% cloud cover, Seas < 0.5 ft (~6 inches) |      |                              |            |
| Sampling Staff: MATT FITZPATRICK, PATRICK COERAN                         |      |                              |            |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 31.45      | 20.30           | 33.14          | 3.72            | 5.73                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                                     |                              |                               |
|--|---|---|-------------------------------------|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> ①<br>4oz 8oz<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0029 (AM) | <b>Latitude</b><br>41.641697 | <b>Longitude</b><br>70.919300 |
|--|---|---|-------------------------------------|------------------------------|-------------------------------|

Time: 1040

Surface biology: shells

|   |  |   |                              |                  |
|---|--|---|------------------------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>220 REP 1<br>70.919327<br>NBH14-0030 (AM) | <b>Latitude</b><br>41.641710 | <b>Longitude</b> |
|---|--|---|------------------------------|------------------|

Penetration(cm): 9.0      Time: 1020      Number of Benthic bottles: 2

Surface biology: shells quahog      Volume of PSD sample (ml): 250

|   |  |   |                              |                  |
|---|--|---|------------------------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>220 REP 2<br>70.919338<br>NBH14-0031 (AM) | <b>Latitude</b><br>41.641714 | <b>Longitude</b> |
|---|--|---|------------------------------|------------------|

Penetration(cm): 9.5      Time: 1029      Number of Benthic bottles: 2

Surface biology: worm tubes, shells, quahog      Volume of PSD sample (ml): 250

|   |  |   |                              |                               |
|---|--|---|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>220 REP 3<br>70.919312<br>NBH14-0032 (AM) | <b>Latitude</b><br>41.641723 | <b>Longitude</b><br>70.919312 |
|---|--|---|------------------------------|-------------------------------|

Penetration(cm): 9.5      Time: 1053      Number of Benthic bottles: 2

Surface biology: worm tubes shells      Volume of PSD sample (ml): 250

Station Comments:

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Completed By: M. Fitzpatrick

① 3/8  
9/23/14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |     |                              |            |
|---|-----|------------------------------|------------|
| Station ID  | 221 | Date(mm/dd/yy)               | 09/25/2014 |
| Water depth (ft.)                                       | 7.1 | Number of Unsuccessful Grabs | 2          |
| Weather: ENE 5Kts, 100% clouds, Overcast, Seas < 0.5 ft |     |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick               |     |                              |            |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 6.8        | 19.03           | 32.99          | 3.12            | 5.6                     |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |   |                              |                               |
|--|---|---|---|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> <sup>MF</sup><br>4oz 9/24/14<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>(c) chem<br>NBH-0125 (HT) | <b>Latitude</b><br>41.641671 | <b>Longitude</b><br>70.914899 |
|--|---|---|---|------------------------------|-------------------------------|

Time: 0815

Surface biology: a few sm. worm tubes

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(A) rep 1<br>NBH14-0126 (HT) | <b>Latitude</b><br>41.641665 | <b>Longitude</b><br>70.914892 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 7.9      Time: 0755      Number of Benthic bottles: 2

Surface biology: 1 mud crab      Volume of PSD sample (ml): 250

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(B) rep 2<br>NBH14-0127 (HT) | <b>Latitude</b><br>41.641652 | <b>Longitude</b><br>70.914891 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 8.1      Time: 0803      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(D) rep 3<br>NBH14-0128 (HT) | <b>Latitude</b><br>41.646719 | <b>Longitude</b><br>70.914899 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 8.0      Time: 0823      Number of Benthic bottles: 1

Surface biology: a few sm. worm tubes      Volume of PSD sample (ml): 250

Station Comments: Move station 50-75' East of target (on land)

Completed By: P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |     |                              |         |
|---|-----|------------------------------|---------|
| Station ID                                    | 221 | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                             | 6.0 | Number of Unsuccessful Grabs | 6       |
| Weather: Overcast, SW wind ~ 5 kts, calm seas |     |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran      |     |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
|            |                 |                |                 |                         |

### Sample Type / Handling

*EPA Tox*

### Sample Collection Information

| <del>TOC</del>                          | <del>PSD</del>                           | <del>PCB</del>                              | Sample ID | Latitude  | Longitude |
|---|--|---|-----------|-----------|-----------|
| <del>4oz GLASS<br/>¾ FULL<br/>4°C</del> | <del>Quart size<br/>Ziploc<br/>4°C</del> | <del>4oz<br/>GLASS<br/>¾ FULL<br/>4°C</del> |           | 41.641675 | 70.914883 |

Time: 1445

Surface biology: slipper limpet on rocks

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID | Latitude | Longitude |
|-----------------------------|--|-----------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample |           |          |           |

Penetration(cm):                      Time:                      Number of Benthic bottles:

Surface biology:                      Volume of PSD sample (ml):

Station Comments:

*Repeat station to collect EPA Tox only*

Completed By:

*M. Fitzpatrick*

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                   | 222  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                            | 11.6 | Number of Unsuccessful Grabs | # 2     |
| Weather: Overcast, SW wind ~5 kts, calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran     |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 9.1        | 20.02           | 33.06          | 6.20            | 5.61                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude                       | Longitude |
|----------------------------|-----------------------------|--|-----------------|--------------------------------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>mrf</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0237 (HT) | 41.641662<br><del>41.646</del> | 70.910921 |

Time: 1514  
Surface biology: Shell hash

| PSD                         | Benthic  | Sample ID       | Latitude | Longitude |
|-----------------------------|--|-----------------|----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0238 (HT) | 41.6416  | 70.910897 |

Penetration(cm): 8.5 Time: 1504 Number of Benthic bottles: 2  
Surface biology: Shell hash Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0239 (HT) | 41.641659 | 70.919161 |

Penetration(cm): 9.0 Time: 1509 Number of Benthic bottles: 2  
Surface biology: Shell hash minor sheen Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0240 (HT) | 41.641671 | 70.910913 |

Penetration(cm): 9.0 Time: 1520 Number of Benthic bottles: 2  
Surface biology: Shell hash Volume of PSD sample (ml): 250

Station Comments:

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Completed By: *Mathew R. Ryl*



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID                                    | 224  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                             | 33.0 | Number of Unsuccessful Grabs | 0       |
| Weather: Overcast, SW wind ~ 5 kts, Calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran      |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 29.7       | 19.63           | 33.13          | 4.89            | 5.59                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8oz mpf<br>9/29/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0241 (HT) | 41.638976 | 70.921412 |

Time: 1554

Surface biology: heavy sheen

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0242 (HT) | 41.638982 | 70.921413 |

Penetration(cm): 9.5 Time: 1544 Number of Benthic bottles: 1

Surface biology: Sheen observed on surface Volume of PSD sample (ml): 250

No biology

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0243 (HT) | 41.638972 | 70.921407 |

Penetration(cm): 9.5 Time: 1548 Number of Benthic bottles: 1

Surface biology: 1 spider crab w/ tunicates on him heavy sheen Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0244 (HT) | 41.638975 | 70.921411 |

Penetration(cm): 9.5 Time: 1600 Number of Benthic bottles: 1

Surface biology: heavy sheen Volume of PSD sample (ml): 250

### Station Comments:

Move station ~ 20' ESE of target Comm. Fishing boats docked on station

Completed By: Math R JZ

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID  | 225  | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.)                                       | 32.7 | Number of Unsuccessful Grabs | 0       |
| Weather: Overcast, drizzle, NE wind ~ 10 kts, calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran                |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 28.16      | 19.84           | 33.25          | 1.50            | 6.88                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                        | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|----------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz GLASS<br>¾ FULL<br>4°C | NBH14-0302 (HT) | 41.638958 | 70.917248 |

Time: 0800

Surface biology: 1 small fish shells

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0303 (HT) | 41.638954 | 70.917229 |

Penetration(cm): 8.5 Time: 744 Number of Benthic bottles: 2

Surface biology: shells, sponges on shells Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0304 (HT) | 41.638967 | 70.917250 |

Penetration(cm): 8.0 Time: 0753 Number of Benthic bottles: 3

Surface biology: shells, Quohogs Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0305 (HT) | 41.638957 | 70.917246 |

Penetration(cm): 8.4 Time: 0808 Number of Benthic bottles: 2

Surface biology: shells, sponges on shells Volume of PSD sample (ml): 250

Station Comments:

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Completed By: *M. Fitzpatrick*

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |     |                              |                      |
|---|-----|------------------------------|----------------------|
| Station ID                                      | 226 | Date(mm/dd/yy)               | 9/30/14              |
| Water depth (ft.)                               | 9.2 | Number of Unsuccessful Grabs | 9.2 <sup>WCMRF</sup> |
| Weather: drizzle, NE wind ~ 5-10 kts, calm seas |     |                              |                      |
| Sampling Staff: m. Fitzpatrick P. Curran        |     |                              |                      |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 7.60       | 19.67           | 33.05          | 2.92            | 6.18                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>mrf</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0306 (HT) | 41.638931 | 70.913055 |

Time: 0902

Surface biology: amphipod tubes

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0307 (HT) | 41.638930 | 70.913042 |

Penetration(cm): 7.5 Time: 0834 Number of Benthic bottles: 1

Surface biology: Amphipod tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0308 (HT) | 41.638933 | 70.913034 |

Penetration(cm): 9.7 Time: 0844 Number of Benthic bottles: 1

Surface biology: Amphipod tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0309 (HT) | 41.638932 | 70.913039 |

Penetration(cm): 9.5 Time: 0847-0855 Number of Benthic bottles: 1

Surface biology: Amphipod tubes Volume of PSD sample (ml): 250

|                   |                                      |  |  |
|-------------------|--------------------------------------|--|--|
| Station Comments: | EPA tox @ 0855 41.638938 / 70.913021 |  |  |
| Completed By:     | <i>M. Fitzpatrick</i>                |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |                                       |                              |         |
|-------------------|---------------------------------------|------------------------------|---------|
| Station ID        | 227                                   | Date(mm/dd/yy)               | 9/30/14 |
| Water depth (ft.) | 7.8                                   | Number of Unsuccessful Grabs | 0       |
| Weather:          | <del>AA</del> drizzle, NE wind 5 kts, |                              |         |
| Sampling Staff:   | M. Fitzpatrick, P. Curran             |                              |         |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 5.59       | 19.67           | 33.18          | 0.80            | 6.84                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |                  |                 |                  |
|--|---|--|------------------|-----------------|------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|  |   |  | NBH14-0310 (HT)  | 41.638926       | 70.908787        |

Time: 09:59

Surface biology: Shell hash, mud crab

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0311 (HT)  | 41.638924       | 70.908788        |

Penetration(cm): 9.0      Time: 9:44      Number of Benthic bottles: 2

Surface biology: Tubes, shell hash, limpets      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0312 (HT)  | 41.638926       | 70.908788        |

Penetration(cm): 8.5      Time: 9:52      Number of Benthic bottles: 2

Surface biology: limpets, quohogs      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0313 (HT)  | 41.638926       | 70.908780        |

Penetration(cm): 9.0      Time: 10:20      Number of Benthic bottles: 2

Surface biology: Tubes, shell hash      Volume of PSD sample (ml): 250

Station Comments:

Completed By: 

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID  | 230  | Date(mm/dd/yy)               | 9/26/14 |
| Water depth (ft.)                                   | 25.2 | Number of Unsuccessful Grabs |         |
| Weather: Mostly sunny, NNE wind ~15kts, Seas - calm |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran            |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 22.1       | 18.97           | 33.19          | 8.64            | 5.88                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8oz <sup>mpf</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0199 (HT) | 41.636329 | 70.919423 |

Time: 1424

Surface biology: None minor sheen

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0200 (HT) | 41.636134 | 70.919342 |

Penetration(cm): 9.3 Time: 1412 Number of Benthic bottles: 1

Surface biology: sm. tubes, shell hash Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0201 (HT) | 41.636329 | 70.919412 |

Penetration(cm): 9.0 Time: 1418 Number of Benthic bottles: 1

Surface biology: sm. tubes, shell hash Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0202 (HT) | 41.636325 | 70.919413 |

Penetration(cm): 9.5 Time: 1433 Number of Benthic bottles: 1

Surface biology: sm. tubes minor sheen Volume of PSD sample (ml): 250

Station Comments: 2 Quohags  
Move station 30' NNE due to comm  
fishing boats on location

Completed By: *[Signature]*



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID  | 231  | Date(mm/dd/yy)               | 9/26/14 |
| Water depth (ft.)   | 27.5 | Number of Unsuccessful Grabs |         |
| Weather: mostly sunny ~10% clouds, NNE ~10-15kts, calm seas |      |                              |         |
| Sampling Staff: M. Kypatrick, P. Curran                     |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 25.8       | 18.93           | 33.21          | 9.11            | 6.12                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 1/2oz <sup>mpc</sup><br>9/26/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0197 (HT) | 41.636193 | 70.915199 |

Time: 1338

Surface biology: NONE

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0198 (HT) | 41.636193 | 70.915166 |

Penetration(cm): 9.5      Time: 1320      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

almost no material retained on sieve

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude  |
|-----------------------------|--|-----------------|-----------|------------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0235 (HT) | 41.636192 | 70.9151874 |

Penetration(cm): 8.5      Time: 1330      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0236 (HT) | 41.636172 | 70.915164 |

Penetration(cm): 7.5      Time: 1350      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

|                   |  |
|-------------------|--|
| Station Comments: | elevated turbidity likely from dredging ~200' west of target |
|                   | all benthic samples contained very little material           |
| Completed By:     | M. Kypatrick   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID   | 235  | Date(mm/dd/yy)               | 9/22/14 |
| Water depth (ft.)  | 26.1 | Number of Unsuccessful Grabs | 8       |
| Weather: SW 15-20 kts, Sunny, 20% cloud cover, seas < 0.5 ft |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran                     |      |                              |         |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 24.72      | 20.41           | 33.19          | 6.62            | 5.97                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |                                     |                              |                               |
|--|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> ①<br><del>4oz</del> 8oz<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0033 (AM) | <b>Latitude</b><br>41.633464 | <b>Longitude</b><br>70.917316 |
|--|---|--|-------------------------------------|------------------------------|-------------------------------|

Time: 1525

Surface biology: None

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0034 (AM) | <b>Latitude</b><br>41.633472 | <b>Longitude</b><br>70.917275 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.7 Time: 1440 Number of Benthic bottles: 1 0.5L

Surface biology: None Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0035 (AM) | <b>Latitude</b><br>41.633506 | <b>Longitude</b><br>70.917305 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.5 Time: 1449 Number of Benthic bottles: 1 0.5L

Surface biology: None Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0036 (AM) | <b>Latitude</b><br>41.633529 | <b>Longitude</b><br>70.917329 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.7 Time: 1500 Number of Benthic bottles: 1 0.5L

Surface biology: None Volume of PSD sample (ml): 250

|                   |  |  |  |
|-------------------|--|--|--|
| Station Comments: | EPA sample 1510 41.633473 / 70.917269              |  |  |
|                   | very soft sediment several O.R. discards / several |  |  |
|                   | Pretripped grabs                                   |  |  |
| Completed By:     | M. Fitzpatrick                                     |  |  |

① JMT 9/23/14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |           |                              |            |
|---|-----------|------------------------------|------------|
| Station ID                                    | 236       | Date(mm/dd/yy)               | 09/26/2014 |
| Water depth (ft.)                             | 34.9 32.3 | Number of Unsuccessful Grabs | 4          |
| Weather: mostly sunny calm seas, NNE ~ 15 kts |           |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick     |           |                              |            |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 29.01      | 18.91           | 33.23          | 2.26            | 6.54                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |                  |                 |                  |
|--|---|--|------------------|-----------------|------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>8oz <sup>max</sup> GLASS<br>9/26/14<br>¾ FULL<br>4°C | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|  |   |  | NBH14-0193 (HT)  | 41.633471       | 70.913089        |

Time: 1249

Surface biology: 3 Quohogs

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0194 (HT)  | 41.633459       | 70.913083        |

Penetration(cm): 9.0      Time: 12:15      Number of Benthic bottles: 2

Surface biology: shell waste, tubes, 1 quohog      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0195 (HT)  | 41.633464       | 70.913094        |

Penetration(cm): 9.5      Time: 1223      Number of Benthic bottles: 1

Surface biology: a few tubes      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0196 (HT)  | 41.633458       | 70.913036        |

Penetration(cm): 8.5      Time: 1238      Number of Benthic bottles: 2

Surface biology: 12 Quohogs      Volume of PSD sample (ml): 250

|                         |
|-------------------------|
| Station Comments:       |
|                         |
|                         |
| Completed By: P. Curran |

**SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014**

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 237  | Date(mm/dd/yy)               | 09/26/2014 |
| Water depth (ft.)                                   | 22.4 | Number of Unsuccessful Grabs | 13         |
| Weather: mostly sunny, NNE wind ~ 15 kts, calm seas |      |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran           |      |                              |            |

**Near Bottom YSI measurements**

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 20.01      | 18.84           | 33.25          | 0.61            | 6.69                    |

**Sample Type / Handling**

**Sample Collection Information**

| TOC                        | PSD                         | PCB   | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz<br>mzf<br>9/26/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0189 (HT) | 41.633415 | 70.909140 |

Time: 1103

Surface biology: 6 quahogs, shell hash, rocks w/ barnacles

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0190 (HT) | 41.633418 | 70.909109 |

Penetration(cm): 8.5 Time: 1035 Number of Benthic bottles: 3

Surface biology: 6 quahogs, shells Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0191 (HT) | 41.633422 | 70.909110 |

Penetration(cm): 8 Time: 1045 Number of Benthic bottles: 2

Surface biology: shell hash Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0192 (HT) | 41.633432 | 70.909101 |

Penetration(cm): 7.5 Time: 1129 Number of Benthic bottles: 3

Surface biology: shell hash Volume of PSD sample (ml): 250

|                   |  |
|-------------------|--|
| Station Comments: | lots of rocks, shells + quahogs move station<br>~ 50' west |
| Completed By:     | P. Curran  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |     |                              |            |
|---|-----|------------------------------|------------|
| Station ID  | 240 | Date(mm/dd/yy)               | 09/22/2014 |
| Water depth (ft.)   | 32  | Number of Unsuccessful Grabs | 3          |
| Weather: SW <sup>20-KTS</sup> 15KTS, Sunny, 25% clouds, seas < 0.5 ft |     |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran                             |     |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 30.70      | 20.45           | 33.16          | 11.84           | 5.99                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                                       | Sample ID                  | Latitude  | Longitude |
|----------------------------|-----------------------------|---|----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>8oz</sup> GLASS<br>¾ FULL<br>4°C | 240 dup<br>NBH14-0037 (Am) | 41.630753 | 70.915199 |

Time: 1403

Surface biology: NONE

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 240 rep 1<br>NBH14-0038 (Am) | 41.630725 | 70.915225 |

Penetration(cm): 9.0      Time: 1321      Number of Benthic bottles: 1 (0.5 L Sample)

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 240 rep 2<br>NBH14-0039 (Am) | 41.630763 | 70.915228 |

Penetration(cm): 9.0      Time: 1330      Number of Benthic bottles: 1 (0.5 L Sample)

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 240 rep 3<br>NBH14-0040 (Am) | 41.630761 | 70.915197 |

Penetration(cm): 9.0      Time: 1338      Number of Benthic bottles: 1 (0.5 L Sample)

Surface biology: NONE      Volume of PSD sample (ml): 250

|                   |  |  |  |
|-------------------|--|--|--|
| Station Comments: | EPA Sample collected @ 14:14 41.630716/70.915214 |  |  |
| Completed By:     | Patrick Curran                                   |  |  |

① 9/22/14 mcr



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID                                       | 241  | Date(mm/dd/yy)               | 09/26/2014 |
| Water depth (ft.)                                | 36.6 | Number of Unsuccessful Grabs | 1          |
| Weather:   |      |                              |            |
| Sampling Staff: Matt Fitzpatrick, Patrick Curran |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 33.27      | 18.88           | 33.21          | 1.97            | 6.50                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 46z <sup>MEF</sup><br>9/26/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0185 (HT) | 41.630694 | 70.911012 |

Time: 0950

Surface biology: sm. tubes shell hash

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0186 (HT) | 41.630704 | 70.911032 |

Penetration(cm): 9.0 Time: 0929 Number of Benthic bottles: 1

Surface biology: Tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0187 (HT) | 41.630730 | 70.911026 |

Penetration(cm): 9.5 Time: 0939 Number of Benthic bottles: 1

Surface biology: a few sm. tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0188 (HT) | 41.630725 | 70.911027 |

Penetration(cm): 9.0 Time: 0958 Number of Benthic bottles: 1

Surface biology: sm. tubes shells Volume of PSD sample (ml): 250

|                         |
|-------------------------|
| Station Comments:       |
|                         |
|                         |
| Completed By: P. Curran |

**SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014**

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 242  | Date(mm/dd/yy)               | 09/26/2014 |
| Water depth (ft.)                                 | 20.4 | Number of Unsuccessful Grabs | 2          |
| Weather: Partly cloudy - clearing, NE wind 15-20, |      |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran         |      |                              |            |

**Near Bottom YSI measurements**

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 18.01      | 18.87           | 33.22          | 2.11            | 6.57                    |

**Sample Type / Handling**

**Sample Collection Information**

|  |   |  |                                     |  |                               |
|--|---|--|-------------------------------------|--|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>4oz <sup>mef</sup> 9/26/14<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0181 (HT) | <b>Latitude</b><br><sup>w/mef 9/26/14</sup><br><del>41.630706</del><br>41.630704 | <b>Longitude</b><br>70.906805 |
|--|---|--|-------------------------------------|--|-------------------------------|

Time: 08:19 (w/mef) 9/26/14 08:36

Surface biology: amphipod tubes, 1 quohog

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0182 (HT) | <b>Latitude</b><br>41.630706 | <b>Longitude</b><br>70.906814 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 8.5 Time: 08:18 Number of Benthic bottles: 1

Surface biology: sm. tubes Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0183 (HT) | <b>Latitude</b><br>41.630686 | <b>Longitude</b><br>70.906786 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 8.9 Time: 08:27 Number of Benthic bottles: 1

Surface biology: amphipod tubes Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0184 (HT) | <b>Latitude</b><br>41.630705 | <b>Longitude</b><br>70.906821 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.5 Time: 08:45 Number of Benthic bottles: 1

Surface biology: amphipod tubes, 1 quohog Volume of PSD sample (ml): 250

|  |  |
|--|--|
| Station Comments:                                  |  |
| Chem Dup: 08:56 41.630709 / 70.906793 - NBH14-0233 |  |
| Pen: 8.5 cm amphipod tubes                         |  |
| Completed By: P. Curran                            |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID                               | 245  | Date(mm/dd/yy)               | 09/22/2014 |
| Water depth (ft.)                        | 10.0 | Number of Unsuccessful Grabs |            |
| Weather: SW 15 Kts Sunny 25% cloud cover |      |                              |            |
| Sampling Staff: M. Fitzpatrick P. Curran |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 8.4        | 20.50           | 33.17          | 6.06            | 6.01                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                               | Sample ID                  | Latitude  | Longitude |
|----------------------------|-----------------------------|-----------------------------------|----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 800<br>GLASS<br>¾ FULL<br>4°C | 245 chm<br>NBH14-0041 (AM) | 41.628017 | 70.913117 |

Time: 13:06

Surface biology: none

| PSD                         | Benthic  | Sample ID                   | Latitude  | Longitude |
|-----------------------------|--|-----------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 245 rep1<br>NBH14-0042 (AM) | 41.628016 | 70.913117 |

Penetration(cm): 9.5 Time: 12:40 Number of Benthic bottles: 1

Surface biology: Quahogs Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 245 Rep 2<br>NBH14-0043 (AM) | 41.628004 | 70.913134 |

Penetration(cm): 6.75 Time: 12:46 Number of Benthic bottles: 1

Surface biology: Quahogs Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | 245 rep 3<br>NBH14-0044 (AM) | 41.628017 | 70.913117 |

Penetration(cm): Time: 12:53 Number of Benthic bottles: 1

Surface biology: Quahogs Volume of PSD sample (ml): 250

Station Comments:

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Completed By:

① SMT 9/23/14

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 247  | Date(mm/dd/yy)               | 09/26/2014 |
| Water depth (ft.)                                   | 11.2 | Number of Unsuccessful Grabs | 4          |
| Weather: <i>mostly cloudy NE ~ 20 kts calm seas</i> |      |                              |            |
| Sampling Staff: <i>P. Curran M. Fitzpatrick</i>     |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 9.05       | 18.92           | 33.19          | 1.85            | 6.43                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                                      | Sample ID                             | Latitude  | Longitude |
|----------------------------|-----------------------------|--|---------------------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <i>met</i><br>GLASS<br>¾ FULL<br>4°C | (C) <i>can</i><br><br>NBH14-0177 (HT) | 41.627962 | 70.904748 |

Time: *07:39*

Surface biology:

| PSD                         | Benthic  | Sample ID                              | Latitude  | Longitude |
|-----------------------------|--|--|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) <i>repl</i><br><br>NBH14-0178 (HT) | 41.627966 | 70.904713 |

Penetration(cm): *7.0* Time: *07:23* Number of Benthic bottles: *1*

Surface biology: *amphipod tubes* Volume of PSD sample (ml): *250*

| PSD                         | Benthic  | Sample ID                               | Latitude  | Longitude |
|-----------------------------|--|---|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) <i>rep 2</i><br><br>NBH14-0179 (HT) | 41.627979 | 70.904732 |

Penetration(cm): *9.0* Time: *07:31* Number of Benthic bottles: *1*

Surface biology: *amphipod tubes* Volume of PSD sample (ml): *250*

| PSD                         | Benthic  | Sample ID                  | Latitude  | Longitude |
|-----------------------------|--|----------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (E)<br><br>NBH14-0180 (HT) | 41.627956 | 70.904737 |

Penetration(cm): *9.5* Time: *07:57* Number of Benthic bottles: *1*

Surface biology: *Amphipod tubes, Macro Algae* Volume of PSD sample (ml): *250*

Station Comments:

*EPA TOX (07:45) 41.627967, 70.904753 pen: 9.0*

*↳ amphipod tubes, 1 quahog*

Completed By: *P. Curran*

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |     |                              |            |
|---|-----|------------------------------|------------|
| Station ID  | 249 | Date(mm/dd/yy)               | 09/25/2014 |
| Water depth (ft.)                                       | 9.1 | Number of Unsuccessful Grabs | 5          |
| Weather: ENE Skts, 100% clouds, overcast, seas < 0.5 ft |     |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick               |     |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 8.51       | 19.17           | 33.21          | 8.13            | 6.23                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID                   | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz met<br>9/25/14<br>GLASS<br>¾ FULL<br>4°C | (c) chem<br>NBH14-0129 (HT) | 41.625269 | 70.911059 |

Time: 0949

Surface biology: 3 Quahogs, Empty Slipper Limpets

| PSD                         | Benthic  | Sample ID                   | Latitude  | Longitude |
|-----------------------------|--|-----------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep1<br>NBH14-0130 (HT) | 41.625264 | 70.911060 |

Penetration(cm): 9.0      Time: 0929      Number of Benthic bottles: 2

Surface biology: Quahogs, Macro Algae, Shell Hash      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                   | Latitude  | Longitude |
|-----------------------------|--|-----------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) rep2<br>NBH14-0131 (HT) | 41.625257 | 70.911074 |

Penetration(cm): 7.0      Time: 0937      Number of Benthic bottles: 1

Surface biology: shell hash      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) rep 3<br>NBH14-0132 (HT) | 41.625272 | 70.911042 |

Penetration(cm): 6.9      Time: 1008      Number of Benthic bottles: 1

Surface biology: Shell hash, Macro Algae      Volume of PSD sample (ml): 250

Station Comments:

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Completed By: P. Curran



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                   | 250  | Date(mm/dd/yy)               | 9/25/14 |
| Water depth (ft.)                            | 31.3 | Number of Unsuccessful Grabs | 0       |
| Weather: heavy overcast, NE 10-15, calm seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran     |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 30.45      | 19.18           | 33.26          | 0.75            | 6.70                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                                       | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz MRF 9/25/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0149 (HT) | 41.625226 | 70.906861 |

Time: 1456

Surface biology: Shell hash, Large hard clam (1)

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0150 (HT) | 41.625230 | 70.906890 |

Penetration(cm): 8.0 Time: 1438 Number of Benthic bottles: 3

Surface biology: Jingle shells, Slipper shells, sponges Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude                   | Longitude |
|-----------------------------|--|-----------------|----------------------------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0151 (HT) | 41.625226<br>WLMRF 9/25/14 | 70.906860 |

Penetration(cm): ~~9.0~~ 9.0 Time: 1513 Number of Benthic bottles: 3

Surface biology: ~~Shell hash, large hard clam (1)~~ PBL 9/25/14 PBL 9/25/14 Volume of PSD sample (ml): 250

Shell hash, Jingle shells/Crepidula (dead mostly), sponge

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0152 (HT) | 41.625268 | 70.906832 |

Penetration(cm): 9.2 Time: 1521 Number of Benthic bottles: 3 (Am) 9/26/14

Surface biology: Shell hash, quohog sponge Volume of PSD sample (ml): 250

|                         |
|-------------------------|
| Station Comments:       |
|                         |
|                         |
| Completed By: P. CURRAN |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |       |                              |            |
|---|-------|------------------------------|------------|
| Station ID  | 253   | Date(mm/dd/yy)               | 09/22/2014 |
| Water depth (ft.)   | 30.90 | Number of Unsuccessful Grabs |            |
| Weather: <sup>SW</sup> 15 Kts, SUNNY, 25% cloud cover, seas < 0.5 ft    |       |                              |            |
| Sampling Staff: <sup>POC 9/22/14</sup> Matt Fitzpatrick, Patrick Curran |       |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 24.39      | 20.29           | 31.70          | 11.17           | 5.65                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|-------------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0021 (AM) | 41.622557 | 70.913175 |

Time: 1136

Surface biology: None

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0022 (AM) | 41.622542 | 70.913169 |

Penetration(cm): 9.5      Time: 1128      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0023 (AM) | 41.622536 | 70.913195 |

Penetration(cm): 10      Time: 1149      Number of Benthic bottles: 1

Surface biology: None overpenetrated but acceptable      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0024 (AM) | 41.622525 | 70.913201 |

Penetration(cm): 9.5      Time: 1204      Number of Benthic bottles: 1

Surface biology: None      Volume of PSD sample (ml): 250

|                   |  |
|-------------------|--|
| Station Comments: | Highly variable bottom topography due to dredging activity |
| Completed By:     | M. Fitzpatrick   |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |                                   |                              |         |
|-------------------|-----------------------------------|------------------------------|---------|
| Station ID        | 304                               | Date(mm/dd/yy)               | 9/25/14 |
| Water depth (ft.) | 10.1                              | Number of Unsuccessful Grabs | 2       |
| Weather:          | Rain, NE ~ 10-15 kts, Seas ~ 0.5' |                              |         |
| Sampling Staff:   | M. Fitzpatrick P. Curran          |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 8.74       | 18.94           | 33.28          | 0.42            | 7.06                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz MRF<br>9/25/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0145 (HT) | 41.619299 | 70.908901 |

Time: 1403

Surface biology: Slipper shells, Jingle shells, Oyster shells, macro algae  
drill snail

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0146 (HT) | 41.619300 | 70.908997 |

Penetration(cm): 7.4 Time: 1341 Number of Benthic bottles: 2

Surface biology: Jingle shells, Slipper shells (dead/live) Volume of PSD sample (ml): 250

Macro Algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0147 (HT) | 41.619288 | 70.909004 |

Penetration(cm): 6.5 Time: 1354 Number of Benthic bottles: 2

Surface biology: limpets (mostly dead), Jingle shells Volume of PSD sample (ml): 250

Macro Algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0148 (HT) | 41.619239 | 70.909002 |

Penetration(cm): 9.2 Time: 1412 Number of Benthic bottles: 2

Surface biology: Macro Algae, Jingle shells, Slipper shells Volume of PSD sample (ml): 250

(mostly dead)

Station Comments: Shell mat - mostly dead w/ some live limpets in each grab

Completed By: P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |                                |                              |            |
|---|--------------------------------|------------------------------|------------|
| Station ID  | 306 <small>psd 9/24/14</small> | Date(mm/dd/yy)               | 09/24/2014 |
| Water depth (ft.)                                 | 7.5 7.5                        | Number of Unsuccessful Grabs |            |
| Weather: ENE 10KTS SEAS 0.5 ft Cloudy, 90% clouds |                                |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick         |                                |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 7.34       | 19.55           | 33.45          | 0.79            | 8.43                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|-------------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0121 (HT) | 41.619084 | 70.871007 |

Time: 9.1-pm 1424

Surface biology: 1 worm tube

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0122 (HT) | 41.619094 | 70.870930 |

Penetration(cm): 10.0 Time: 1407 Number of Benthic bottles:

Surface biology: None Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0123 (HT) | 41.619103 | 70.870939 |

Penetration(cm): 9.2 Time: 1414 Number of Benthic bottles:

Surface biology: 2 sm worm tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0124 (HT) | 41.619070 | 70.870958 |

Penetration(cm): 7.8 Time: 1433 Number of Benthic bottles:

Surface biology: eel grass 2 sm worm tubes Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | Duplicate Chem grab - 1440 2 sm. worm tubes |  |  |
|                   | 41.619082 / 70.870962 - NBH14-0234          |  |  |
| Completed By:     | Pcurran                                     |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID                                | 309  | Date(mm/dd/yy)               | 09/25/2014 |
| Water depth (ft.)                         | 16.5 | Number of Unsuccessful Grabs |            |
| Weather: Rain NE 10kts O'seas (sheltered) |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 16.0       | 19.09           | 33.46          | 0.53            | 6.92                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                             | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|---------------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C<br>② | Quart size<br>Ziploc<br>4°C | 8 1/2oz MRF<br>9/25/14<br>GLASS<br>¾ FULL<br>4°C | NBH14-0137 (HT) | 41.606977 | 70.918626 |

1148

Time: 11:32 (Time estimated based on benthic rep 1 because not recorded) (AM) 9/26/14  
 Surface biology: limpet shells - dead sm. tubes

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0138 (HT) | 41.606993 | 70.918634 |

Penetration(cm): 8.7 Time: 1131 Number of Benthic bottles: 1  
 Surface biology: limpets (live) Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                 | Latitude  | Longitude |
|-----------------------------|--|---------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0139 (HT)<br>② 1138 | 41.606996 | 70.918626 |

Penetration(cm): 8.8 Time: 11:35 (HT) Number of Benthic bottles: 1  
 Surface biology: limpets macro algae Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                 | Latitude  | Longitude |
|-----------------------------|--|---------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0140 (HT)<br>② 1158 | 41.606984 | 70.918645 |

Penetration(cm): 9.0 Time: 11:34 (HT) Number of Benthic bottles: 1  
 Surface biology: Slipper shell, limpet (dead), worn tubes (2) Volume of PSD sample (ml): 250

Station Comments:  
 ① Times estimated based on time of benthic grab 1 because not recorded during sampling. (AM) 9/26/2014  
 Completed By: P. Curran

② correct times were pulled from Hypack software, MRF 10/7/14



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|                   |                              |                              |         |
|-------------------|------------------------------|------------------------------|---------|
| Station ID        | 310                          | Date(mm/dd/yy)               | 9/25/14 |
| Water depth (ft.) | 18.2                         | Number of Unsuccessful Grabs | 1       |
| Weather:          | Rain NE ~ 10 kts ~ 1.0' seas |                              |         |
| Sampling Staff:   | M. Fitzpatrick P. Curran     |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 17.42      | 19.05           | 33.31          | 4.67            | 7.09                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                        | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|----------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz GLASS<br>¾ FULL<br>4°C | NBH14-0141 (HT) | 41.606884 | 70.899631 |

Time: 12:58

Surface biology: dead limpets macroalgae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0142 (HT) | 41.606894 | 70.899583 |

Penetration(cm): 7.0 Time: 12:51 Number of Benthic bottles: 1

Surface biology: Macro Algae, (2) dead crepidula Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0143 (HT) | 41.606878 | 70.899597 |

Penetration(cm): 6.9 Time: 13:12 Number of Benthic bottles: 1

Surface biology: Crepidula (dead/live), Macro Algae Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0144 (HT) | 41.606886 | 70.899613 |

Penetration(cm): 8.1 Time: 13:18 Number of Benthic bottles: 1

Surface biology: Crepidula dead/live macro algae Volume of PSD sample (ml): 250

|                                     |
|-------------------------------------|
| Station Comments:                   |
|                                     |
|                                     |
| Completed By: <i>M. Fitzpatrick</i> |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 311  | Date(mm/dd/yy)               | 09/24/2014 |
| Water depth (ft.)  | 14.9 | Number of Unsuccessful Grabs | 4          |
| Weather: Overcast <del>15 kts</del> ENE 15-20 kts ~1' seas |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick                  |      |                              |            |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 14.52      | 19.50           | 33.39          | 1.17            | 7.34                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                  |                 |                  |
|--|---|---|------------------|-----------------|------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b><br>4oz<br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|  |   |   | NBH14-0117 (HT)  | 41.606790       | 70.880587        |

Time: 1315

Surface biology: worm casings, shell hash, limpet shells

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0118 (HT)  | 41.60680        | 70.880567        |

Penetration(cm): 7.2      Time: 1322      Number of Benthic bottles: 2

Surface biology: Shell Hash, Limpets      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0119 (HT)  | 41.60679        | 70.880568        |

Penetration(cm): 8.3      Time: 1333      Number of Benthic bottles: 2

Surface biology: Shell hash, Limpets      Volume of PSD sample (ml): 250

|   |  |                  |                 |                  |
|---|--|------------------|-----------------|------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b> | <b>Latitude</b> | <b>Longitude</b> |
|   |  | NBH14-0120 (HT)  | 41.606807       | 70.880600        |

Penetration(cm): 9.2      Time: 1339      Number of Benthic bottles: 2

Surface biology: worm tubes, shell hash      Volume of PSD sample (ml): 250

Station Comments:

Completed By:

P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 317  | Date(mm/dd/yy)               | 09/25/2014 |
| Water depth (ft.)                                  | 31.5 | Number of Unsuccessful Grabs | 1          |
| Weather: ENE ~10kts 100% cloud cover seas 0.5-1.0' |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick          |      |                              |            |

### Near Bottom YSI measurements

|            |                 |                |                 |                         |
|------------|-----------------|----------------|-----------------|-------------------------|
| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
| 29.4       | 19.43           | 33.44          | 1.49            | 7.15                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |   |                                     |                              |                               |
|--|---|---|-------------------------------------|------------------------------|-------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>PCB</b> <sup>m&amp;F</sup><br>4oz <sup>9/25/14</sup><br>GLASS<br>¾ FULL<br>4°C | <b>Sample ID</b><br>NBH14-0133 (HT) | <b>Latitude</b><br>41.594465 | <b>Longitude</b><br>70.890204 |
|--|---|---|-------------------------------------|------------------------------|-------------------------------|

Time: 11:00

Surface biology: Shell hash

250

|   |  |                                     |                              |                                     |
|---|--|-------------------------------------|------------------------------|-------------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0134 (HT) | <b>Latitude</b><br>41.594482 | <b>Longitude</b><br>HT<br>70.890199 |
|---|--|-------------------------------------|------------------------------|-------------------------------------|

Penetration(cm): 10.0 Time: 10:39

Number of Benthic bottles: 1

Surface biology: None

Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0135 (HT) | <b>Latitude</b><br>41.594464 | <b>Longitude</b><br>70.890225 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.0 Time: 10:47

Number of Benthic bottles: 1

Surface biology: None

Volume of PSD sample (ml): 250

|   |  |                                     |                              |                               |
|---|--|-------------------------------------|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>NBH14-0136 (HT) | <b>Latitude</b><br>41.594485 | <b>Longitude</b><br>70.890215 |
|---|--|-------------------------------------|------------------------------|-------------------------------|

Penetration(cm): 9.0 Time: 11:08

Number of Benthic bottles: 1

Surface biology: shell hash

Volume of PSD sample (ml): 250

Station Comments:

ERA Sample 41.594454, 70.890253 (12:36) Pen depth: 8.8

↳ forgot to collect on 1st visit to station

Completed By: P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID                                | 318  | Date(mm/dd/yy)               | 09/24/2014 |
| Water depth (ft.)                         | 19.1 | Number of Unsuccessful Grabs | 11         |
| Weather: mostly cloudy ENE 15-20 seas ~1' |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 17.9       | 19.37           | 33.38          | 1.09            | 7.06                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                           | Sample ID                  | Latitude  | Longitude |
|----------------------------|-----------------------------|-------------------------------|----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz<br>GLASS<br>¾ FULL<br>4°C | (B) cum<br>NBH14-0113 (HT) | 41.594350 | 70.871226 |

Time: 12:10

Surface biology: Shell Hash

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep 1<br>NBH14-0114 (HT) | 41.594338 | 70.871226 |

Penetration(cm): 7.5 Time: 11:54 Number of Benthic bottles: 2

Surface biology: limpets macro algae Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep 2<br>NBH14-0115 (HT) | 41.594358 | 70.871174 |

Penetration(cm): 9.5 Time: 12:18 Number of Benthic bottles: 3

Surface biology: Shell Hash, Broken limpets Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) rep 3<br>NBH14-0116 (HT) | 41.594364 | 70.871233 |

Penetration(cm): 9.5 Time: 12:23 Number of Benthic bottles: 2

Surface biology: shell hash Volume of PSD sample (ml): 250

|                         |
|-------------------------|
| Station Comments:       |
|                         |
|                         |
| Completed By: P. CURRAN |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                               | 323  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                        | 28.0 | Number of Unsuccessful Grabs | 0       |
| Weather: Overcast, SW ~ 5 kts, Seas 0.5' |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 26.7       | 19.34           | 33.50          | 2.18            | 6.17                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                             | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|---------------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz<br>GLASS<br>¾ FULL<br>4°C | NBH14-0281 (HT) | 41.582262 | 70.918848 |

Time: 10:45

Surface biology: macro algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0282 (HT) | 41.582259 | 70.918849 |

Penetration(cm): 8.5      Time: 10:28      Number of Benthic bottles: 1

Surface biology: Tubes      Macro algae      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0283 (HT) | 41.582262 | 70.918829 |

Penetration(cm): 9.0      Time: 10:37      Number of Benthic bottles: 1

Surface biology: macro algae      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude        | Longitude |
|-----------------------------|--|-----------------|-----------------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0284 (HT) | 41.582262<br>55 | 70.918842 |

Penetration(cm): 8.5      Time: 10:52      Number of Benthic bottles: 1

Surface biology: macro algae fragments      Volume of PSD sample (ml): 250

Algae (Abs 9/29/14)

Station Comments:

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Completed By: *M. Fitzpatrick*



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                 | 324  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                          | 33.7 | Number of Unsuccessful Grabs | 1       |
| Weather: overcast SW wind ~5kts, 0.5' seas |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran   |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 31.1       | 19.35           | 33.50          | 2.07            | 6.16                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                        | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|----------------------------|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz GLASS<br>¾ FULL<br>4°C | NBH14-0285 (HT) | 41.582159 | 70.899832 |

Time: 1129

Surface biology: shell hash macro algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude  |
|-----------------------------|--|-----------------|-----------|------------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0286 (HT) | 41.582174 | 70.8998419 |

Penetration(cm): 8.7 Time: 1114 Number of Benthic bottles: 1

Surface biology: shell hash, Macro Algae Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0287 (HT) | 41.582166 | 70.899841 |

Penetration(cm): 8.5 Time: 1120 Number of Benthic bottles: 1

Surface biology: cockle clam, shell hash macro algae, Barnacles on limpet shell Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0288 (HT) | 41.582178 | 70.899804 |

Penetration(cm): 8.5 Time: 1142 Number of Benthic bottles: 1

Surface biology: Macro Algae, shell hash Volume of PSD sample (ml): 250

|                   |
|-------------------|
| Station Comments: |
|                   |
|                   |
| Completed By:     |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID   | 325  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                                  | 35.6 | Number of Unsuccessful Grabs |         |
| Weather: Overcast, SW wind ~ 5-10 kts, Seas ~ 0.5' |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran           |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 33.3       | 19.41           | 33.50          | 2.00            | 7.36                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID     | Latitude  | Longitude |
|----------------------------|-----------------------------|---|---------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8oz <sup>mg/L</sup><br>GLASS<br>¾ FULL<br>4°C | NBH-0289 (HT) | 41.582064 | 70.880835 |

Time: 1227

Surface biology: minor shell hash

| PSD                         | Benthic  | Sample ID     | Latitude  | Longitude |
|-----------------------------|--|---------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0290 (HT) | 41.582061 | 70.880837 |

Penetration(cm): 8.5 Time: 1207 Number of Benthic bottles: 1

Surface biology: minor shell hash Volume of PSD sample (ml):

| PSD                         | Benthic  | Sample ID     | Latitude  | Longitude |
|-----------------------------|--|---------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0291 (HT) | 41.582067 | 70.880833 |

Penetration(cm): 8.7 Time: 1216 Number of Benthic bottles: 1

Surface biology: minor shell hash Volume of PSD sample (ml):

a few worm tubes

| PSD                         | Benthic  | Sample ID     | Latitude  | Longitude |
|-----------------------------|--|---------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0292 (HT) | 41.582065 | 70.880820 |

Penetration(cm): 8.5 Time: 1235 Number of Benthic bottles: 1

Surface biology: shell hash, Tube Volume of PSD sample (ml):

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | EPA Tox - pen: 8.5cm minor shell hash @ 1223<br>41.582045 / 70.880822 |  |  |
| Completed By:     |   |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID                                    | 331  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                             | 26.4 | Number of Unsuccessful Grabs | 0       |
| Weather: Overcast SW wind ~ 5 kts seas ~ 0.5' |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran      |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 24.8       | 19.29           | 33.46          | 2.91            | 7.11                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz <sup>met</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0277 (HT) | 41.569958 | 70.928454 |

Time: 09:52

Surface biology: tubes small stone w/ barnacles

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0278 (HT) | 41.569959 | 70.928465 |

Penetration(cm): 8.9 Time: 09:37 Number of Benthic bottles: 1

Surface biology: Macro algae, worm tubes (2) Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0279 (HT) | 41.569954 | 70.928448 |

Penetration(cm): 8.5 Time: 09:44 Number of Benthic bottles: 1

Surface biology: worm tubes Volume of PSD sample (ml): 250

Macro Algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0280 (HT) | 41.569965 | 70.928466 |

Penetration(cm): 8.7 Time: 10:03 Number of Benthic bottles: 1

Surface biology: Shell Hash, Macro Algae, Tubes Volume of PSD sample (ml): 250

|                                     |
|-------------------------------------|
| Station Comments:                   |
|                                     |
|                                     |
| Completed By: <i>Matthew R. Rye</i> |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                                     | 332  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                              | 27.7 | Number of Unsuccessful Grabs | 0       |
| Weather: mostly cloudy, SW wind ~5-10 seas ~1' |      |                              |         |
| Sampling Staff: M. Fitzpatrick P. Curran       |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 25.9       | 19.32           | 33.50          | 0.20            | 7.18                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>max</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0269 (HT) | 41.569875 | 70.909468 |

Time: 8:21

Surface biology: tubes macro + algae

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0270 (HT) | 41.569864 | 70.909468 |

Penetration(cm): 7.5 Time: 8:09 Number of Benthic bottles: 1

Surface biology: Tubes, Empty limpet shell, Volume of PSD sample (ml): 250

MACRO ALGAE

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0271 (HT) | 41.569898 | 70.909469 |

Penetration(cm): 7.2 Time: 8:15 Number of Benthic bottles: 1

Surface biology: tubes, limpets, Volume of PSD sample (ml): 250

1 snail

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0272 (HT) | 41.569876 | 70.909424 |

Penetration(cm): tubes 7.8 Time: 8:29 Number of Benthic bottles: 1

Surface biology: tubes, limpets, Volume of PSD sample (ml): 250

macro algae

|                              |
|------------------------------|
| Station Comments:            |
|                              |
|                              |
| Completed By: M. Fitzpatrick |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID                               | 333  | Date(mm/dd/yy)               | 9/23/14 |
| Water depth (ft.)                        | 19.7 | Number of Unsuccessful Grabs | 0       |
| Weather: Mostly sunny sw wind ~15 ~65°   |      |                              |         |
| Sampling Staff: P. Curran M. Fitzpatrick |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 18.70      | 19.70           | 33.47          | 1.31            | 7.14                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID     | Latitude  | Longitude |
|----------------------------|-----------------------------|--|---------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz 9/23/14<br>MAR<br>GLASS<br>¾ FULL<br>4°C | NBH-0073 (Am) | 41.569788 | 70.890439 |

Time: 1427

Surface biology: shell hash

| PSD                         | Benthic  | Sample ID           | Latitude  | Longitude |
|-----------------------------|--|---------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0073 (Am)<br>74 | 41.569772 | 70.890429 |

Penetration(cm): 8.0 Time: 1413 Number of Benthic bottles: 2

Surface biology: broken limpets (shell hash) Volume of PSD sample (ml): 250  
brittle star

| PSD                         | Benthic  | Sample ID     | Latitude  | Longitude |
|-----------------------------|--|---------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0075 (Am) | 41.569758 | 70.890464 |

Penetration(cm): 9.2 Time: 1420 Number of Benthic bottles: 3

Surface biology: shell hash Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID     | Latitude  | Longitude |
|-----------------------------|--|---------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH-0076 (Am) | 41.569773 | 70.890495 |

Penetration(cm): 8.7 Time: 1436 Number of Benthic bottles: 3

Surface biology: shell hash Volume of PSD sample (ml): 250

Station Comments:

Completed By: M. Fitzpatrick



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 334  | Date(mm/dd/yy)               | 09/23/2014 |
| Water depth (ft.)   | 38.6 | Number of Unsuccessful Grabs | 0          |
| Weather: N 5-10Kts, Sunny, 25% cloud cover, seas < 0.5 ft |      |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran                 |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 36.69      | 19.58           | 33.48          | 5.32            | 6.90                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID                       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|---------------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 9/23/14<br>MER<br>GLASS<br>¾ FULL<br>4°C | (D) Chem<br><br>NBH14-0093 (AM) | 41.569665 | 70.871530 |

Time: 09:53

Surface biology: worm casings, clams, drills

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep 1<br><br>NBH14-0094 (AM) | 41.569674 | 70.871433 |

Penetration(cm): 9.7 Time: 9:28 Number of Benthic bottles: 1

Surface biology: worm casings, clams, drills Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) rep 2<br><br>NBH14-0095 (AM) | 41.569650 | 70.871463 |

Penetration(cm): 9.6 Time: 9:35 Number of Benthic bottles: 1

Surface biology: worm casings Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                                       | Latitude  | Longitude |
|-----------------------------|--|---|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep 3<br><br>NBH14-0096 (AM)<br>PAC 9/23/14 | 41.569628 | 70.871472 |

Penetration(cm): 9.7 Time: 9:53 9:43 Number of Benthic bottles: 1

Surface biology: worm casings, clams, drills Volume of PSD sample (ml): 250

### Station Comments:

Station Outside Breakwater

Completed By:

P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |   |                              |            |
|---|---|------------------------------|------------|
| Station ID  | 335   | Date(mm/dd/yy)               | 09/23/2014 |
| Water depth (ft.)   | <del>29</del> 28 <small>POC 9/23/2014</small> | Number of Unsuccessful Grabs | 1          |
| Weather: N wind 5-10 kts, Sunny, 20% cloud, seas < 0.5 ft |   |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran                 |   |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 27         | 19.66           | 33.47          | 1.41            | 6.90                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID              | Latitude  | Longitude |
|----------------------------|-----------------------------|--|------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>meq</sup> 9/23/14<br>GLASS<br>¾ FULL<br>4°C | (C)<br>NBH14-0097 (AM) | 41.569538 | 70.852439 |

Time: 0857

Surface biology: *Crepidula* / limpets (dead) / live

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude   |
|-----------------------------|--|------------------------------|-----------|---|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep 1 (A)<br>NBH14-0098 (AM) | 41.569541 | <del>70.852429</del><br>70.852429<br><small>POC 9/23/14</small> |

Penetration(cm): 9.5      Time: 0845      Number of Benthic bottles: 2

Surface biology: *Crepidula* / limpets (dead) / live      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep 2 (B)<br>NBH14-0099 (AM) | 41.569568 | 70.852471 |

Penetration(cm): 9.5      Time: 0851      Number of Benthic bottles: 2

Surface biology: *Crepidula* / limpets (dead) / live      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | rep 3 (C)<br>NBH14-0100 (AM) | 41.569560 | 70.852433 |

Penetration(cm): 9.5      Time: 09:07      Number of Benthic bottles: 2

Surface biology: *Crepidula* / limpets (dead) / live      Volume of PSD sample (ml): 250

### Station Comments:

Station outside breakwater.

Completed By:

P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |         |
|--|------|------------------------------|---------|
| Station ID   | 338  | Date(mm/dd/yy)               | 9/29/14 |
| Water depth (ft.)                                  | 28.5 | Number of Unsuccessful Grabs | 1       |
| Weather: mostly cloudy SW wind ~ 5 kts seas ~ 0.5' |      |                              |         |
| Sampling Staff: M. Kitepatnick P. Curran           |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 26.2       | 19.30           | 33.57          | 1.78            | 7.22                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz <sup>max</sup><br>GLASS<br>¾ FULL<br>4°C | NBH14-0273 (HT) | 41.557551 | 70.919076 |

Time: 0908

Surface biology: worm tubes

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0274 (HT) | 41.557534 | 70.919058 |

Penetration(cm): 10.0 Time: 0852 Number of Benthic bottles: 1

Surface biology: worm tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0275 (HT) | 41.557557 | 70.919105 |

Penetration(cm): 9.2 Time: 0901 Number of Benthic bottles: 1

Surface biology: worm tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0276 (HT) | 41.557584 | 70.919105 |

Penetration(cm): 6.8 Time: 0918 Number of Benthic bottles: 1

Surface biology: Tubes, small amount of trash Volume of PSD sample (ml): 250

|                                     |
|-------------------------------------|
| Station Comments:                   |
|                                     |
|                                     |
| Completed By: <i>M. Kitepatnick</i> |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |         |
|---|------|------------------------------|---------|
| Station ID  | 339  | Date(mm/dd/yy)               | 9/23/14 |
| Water depth (ft.)                                     | 36.3 | Number of Unsuccessful Grabs | 1       |
| Weather: SW 15-20 kts, Sunny, 45% clouds, Seas 1-2 ft |      |                              |         |
| Sampling Staff: M. FitzPatrick, Patrick Curran        |      |                              |         |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 35.11      | 19.56           | 33.53          | 5.43            | 7.00                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8oz 9/23/14<br>mkr<br>GLASS<br>¾ FULL<br>4°C | NBH14-0077 (AM) | 41.557476 | 70.900039 |

Time: 1339

Surface biology: a couple tubes, 1 snail

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0078 (AM) | 41.557465 | 70.900090 |

Penetration(cm): 8.0      Time: 1321      Number of Benthic bottles: 1

Surface biology: Amphipod tubes, shells      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0079 (AM) | 41.557426 | 70.900013 |

Penetration(cm): 8.7      Time: 1331      Number of Benthic bottles: 1

Surface biology: snail      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID       | Latitude  | Longitude |
|-----------------------------|--|-----------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | NBH14-0080 (AM) | 41.557443 | 70.900013 |

Penetration(cm): 9.0      Time: 1353      Number of Benthic bottles: 1

Surface biology: tubes      Volume of PSD sample (ml): 250

Station Comments:

Completed By:

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 340  | Date(mm/dd/yy)               | 09/23/2014 |
| Water depth (ft.)   | 37.1 | Number of Unsuccessful Grabs |            |
| Weather: N wind 3-5 kts, Sunny, 35% cloud cover seas < 0.5 ft |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick                     |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 35.01      | 19.54           | 33.52          | 4.65            | 6.95                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID                   | Latitude  | Longitude |
|----------------------------|-----------------------------|--|-----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz 9/23/14<br>mic<br>GLASS<br>¾ FULL<br>4°C | (C) chem<br>NBH14-0085 (Am) | 41.557279 | 70.881141 |

Time: 11:29

Surface biology: NONE

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) Rep 1<br>NBH14-0086 (Am) | 41.557306 | 70.881076 |

Penetration(cm): 8.5      Time: 11:15      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) Rep 2<br>NBH14-0087 (Am) | 41.557345 | 70.881051 |

Penetration(cm): 8.0      Time: 11:22      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) Rep 3<br>NBH14-0088 (Am) | 41.557352 | 70.881060 |

Penetration(cm): 7.5      Time: 11:36      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

### Station Comments:

Station outside breakwater

EPA SAMPLE (11:43) 41.557317, 70.881071 (penetration = 7.75 cm)

Completed By:

P. Curran



# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 341  | Date(mm/dd/yy)               | 09/23/2014 |
| Water depth (ft.)  | 37.4 | Number of Unsuccessful Grabs | 1          |
| Weather: N wind 5 Kts, Sunny, 25% Cloud cover, Seas 0.5 ft |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick                  |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 36.27      | 19.53           | 33.53          | 3.37            | 7.03                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID                       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|---------------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 4oz 9/23/14<br>m22<br>GLASS<br>¾ FULL<br>4°C | (B) chem<br><br>NBH14-0089 (RM) | 41.557252 | 70.862095 |

Time: 10:32

Surface biology: NONE

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep 1<br><br>NBH14-0090 (RM) | 41.557226 | 70.862111 |

Penetration(cm): 7.5      Time: 10:22      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep 2<br><br>NBH14-0091 (RM) | 41.557246 | 70.862090 |

Penetration(cm): 7.5      Time: 10:39      Number of Benthic bottles: 1

Surface biology: NONE      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                        | Latitude  | Longitude |
|-----------------------------|--|----------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) rep 3<br><br>NBH14-0092 (RM) | 41.557232 | 70.862141 |

Penetration(cm): 8.5      Time: 10:48      Number of Benthic bottles: 1

Surface biology: small fish (1), Macro Algae      Volume of PSD sample (ml): 250

### Station Comments:

Stations outside Break-water

Completed By: P. Curran

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |  |
|---|------|------------------------------|--|
| Station ID                                | 345  | Date(mm/dd/yy)               | PBC 9/24/14<br><del>09/23</del> 09/24/2014 |
| Water depth (ft.)                         | 39.4 | Number of Unsuccessful Grabs | 4  |
| Weather: mostly cloudy, ENE ~ 15, seas 2' |      |                              |  |
| Sampling Staff: M. Fitzpatrick, P. Curran |      |                              |  |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 37.9       | 19.40           | 33.56          | 1.94            | 7.21                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB                             | Sample ID                  | Latitude                           | Longitude                         |
|----------------------------|-----------------------------|---------------------------------|----------------------------|------------------------------------|-----------------------------------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 8 10z<br>GLASS<br>¾ FULL<br>4°C | (D) con<br>NBH14-0109 (HT) | <del>41.5451043</del><br>41.545145 | <del>70.909751</del><br>70.909703 |

Time: 10:50 - note this time is estimated because it was not recorded in the field. (AM) 9/26/2014

Surface biology: worm tubes (sm.)

| PSD                         | Benthic  | Sample ID                    | Latitude   | Longitude |
|-----------------------------|--|------------------------------|------------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep 1<br>NBH14-0110 (HT) | 41.5451043 | 70.909754 |

Penetration(cm): 9.0      Time: 10:50      Number of Benthic bottles: 1

Surface biology: worm tubes (sm.)      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep 2<br>NBH14-0111 (HT) | 41.545160 | 70.909722 |

Penetration(cm): 9.5      Time: 11:01      Number of Benthic bottles: 1

Surface biology: 2 lg tubes in the bottom      Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep 3<br>NBH14-0112 (HT) | 41.545139 | 70.909696 |

Penetration(cm): 9.7      Time: 11:07      Number of Benthic bottles: 1

Surface biology: worm tubes      Volume of PSD sample (ml): 250

|                   |   |  |  |
|-------------------|---|--|--|
| Station Comments: | ① correct time was pulled from Hypack software<br>MRF 10/7/14 |  |  |
| Completed By:     | P. Curran   |  |  |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID   | 346  | Date(mm/dd/yy)               | 09/23/2014 |
| Water depth (ft.)  | 36.2 | Number of Unsuccessful Grabs | 0          |
| Weather: SW 10-15 kts, Sunny, 30% cloud cover, seas 0.5-1.0 FT |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick                      |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 34.45      | 19.45           | 33.57          | 1.70            | 7.04                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB  | Sample ID                       | Latitude  | Longitude |
|----------------------------|-----------------------------|--|---------------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 4oz 9/23/14<br>MLP<br>GLASS<br>¾ FULL<br>4°C | (A) Chem<br><br>NBH14-0081 (Am) | 41.545018 | 70.890666 |

Time: 12:26

Surface biology: One hermit crab

| PSD                         | Benthic  | Sample ID                       | Latitude  | Longitude |
|-----------------------------|--|---------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) rep1<br><br>NBH14-0082 (Am) | 41.545026 | 70.890654 |

Penetration(cm): 8 Time: 12:37 Number of Benthic bottles: 1

Surface biology: NONE Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                       | Latitude  | Longitude |
|-----------------------------|--|---------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (C) rep2<br><br>NBH14-0083 (Am) | 41.545058 | 70.890719 |

Penetration(cm): 8.5 Time: 12:45 Number of Benthic bottles: 1

Surface biology: NONE Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                       | Latitude               | Longitude |
|-----------------------------|--|---------------------------------|------------------------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) rep3<br><br>NBH14-0084 (Am) | 41.545070<br>41.545070 | 70.890715 |

Penetration(cm): 8.5 Time: 12:54 Number of Benthic bottles: 1

Surface biology: WORM TUBE (1) Volume of PSD sample (ml): 250

|                   |                               |
|-------------------|-------------------------------|
| Station Comments: | STATION OUTSIDE OF BREAKWATER |
|                   |                               |
|                   |                               |
| Completed By:     | P. Curran                     |

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|   |      |                              |            |
|---|------|------------------------------|------------|
| Station ID  | 349  | Date(mm/dd/yy)               | 09/24/2014 |
| Water depth (ft.)   | 26.7 | Number of Unsuccessful Grabs | 0          |
| Weather: N wind 15kts, <sup>mostly (see 9/24/14)</sup> Partly Cloudy, 80% clouds, seas 1-1.5 ft |      |                              |            |
| Sampling Staff: P. Curran, M. Fitzpatrick   |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 25.51      | 19.42           | 33.55          | 0.76            | 7.17                    |

### Sample Type / Handling

### Sample Collection Information

| TOC                        | PSD                         | PCB   | Sample ID                   | Latitude  | Longitude |
|----------------------------|-----------------------------|---|-----------------------------|-----------|-----------|
| 4oz GLASS<br>¾ FULL<br>4°C | Quart size<br>Ziploc<br>4°C | 5 4oz <sup>meq</sup> <sup>9/24/14</sup><br>GLASS<br>¾ FULL<br>4°C | (C) Chen<br>NBH14-0101 (HT) | 41.532924 | 70.938276 |

Time: 1017

Surface biology: hermit crab sm. tubes limpet

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (A) rep 1<br>NBH14-0102 (HT) | 41.532951 | 70.938283 |

Penetration(cm): 7.8 Time: 10:03 Number of Benthic bottles: 1

Surface biology: hermit crab, sm. tubes Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (B) rep 2<br>NBH14-0103 (HT) | 41.532931 | 70.938305 |

Penetration(cm): 7.2 Time: 10:09 Number of Benthic bottles: 1

Surface biology: sm. tubes a couple limpets Volume of PSD sample (ml): 250

| PSD                         | Benthic  | Sample ID                    | Latitude  | Longitude |
|-----------------------------|--|------------------------------|-----------|-----------|
| Quart size<br>Ziploc<br>4°C | Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | (D) rep 3<br>NBH14-0104 (HT) | 41.532951 | 70.938287 |

Penetration(cm): 7.0 Time: 10:22 Number of Benthic bottles: 1

Surface biology: macro algae, sm. tubes  
a couple amphipods limpets Volume of PSD sample (ml): 250

Station Comments:

Completed By:

P. CURRAN

# SEDIMENT COLLECTION DATA SHEET – NEW BEDFORD LTM VI, 2014

|  |      |                              |            |
|--|------|------------------------------|------------|
| Station ID                                       | 352  | Date(mm/dd/yy)               | 09/24/2014 |
| Water depth (ft.)                                | 22.6 | Number of Unsuccessful Grabs | 5          |
| Weather: mostly cloudy NNE wind ~10 kts ~1' seas |      |                              |            |
| Sampling Staff: M. Fitzpatrick, P. Curran        |      |                              |            |

### Near Bottom YSI measurements

| Depth (ft) | Temperature (C) | Salinity (PSU) | Turbidity (NTU) | Dissolved Oxygen (mg/L) |
|------------|-----------------|----------------|-----------------|-------------------------|
| 21.05      | 19.27           | 33.61          | 1.38            | 7.16                    |

### Sample Type / Handling

### Sample Collection Information

|  |   |  |   |                                       |                                    |
|--|---|--|---|---------------------------------------|------------------------------------|
| <b>TOC</b><br>4oz GLASS<br>¾ FULL<br>4°C | <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | 8 4oz<br>PCB<br>GLASS<br>¾ FULL<br>4°C<br><i>9/24/14 mar</i> | <b>Sample ID</b><br>(C) chem<br><br>NBH14-0105 (HT) | <del>Latitude</del> Long<br>70.947740 | <b>Longitude Lat.</b><br>41.520539 |
|--|---|--|---|---------------------------------------|------------------------------------|

Time: 0918

Surface biology: limpets - some unavoidable in chem samples

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(A) rep 1<br><br>NBH14-0106 (HT) | <b>Latitude</b><br>41.520604 | <b>Longitude</b><br>70.947913 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 6.0      Time: 0854      Number of Benthic bottles: 2

Surface biology: Live/DEAD Crepidula      Volume of PSD sample (ml): 250

*Chiton (inside limpet)*

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(B) rep 2<br><br>NBH14-0107 (HT) | <b>Latitude</b><br>41.520507 | <b>Longitude</b><br>70.947723 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 9      Time: 0912      Number of Benthic bottles: 3

Surface biology: Live/DEAD Crepidula      Volume of PSD sample (ml): 250

*mud crab brittle star*

|   |  |  |                              |                               |
|---|--|--|------------------------------|-------------------------------|
| <b>PSD</b><br>Quart size<br>Ziploc<br>4°C | <b>Benthic</b><br>Variable bottle size<br>90% FULL<br>10% conc. Formalin (37%)<br>1tbs borax/liter of sample | <b>Sample ID</b><br>(D) rep 3<br><br>NBH14-0108 (HT) | <b>Latitude</b><br>41.520535 | <b>Longitude</b><br>70.947714 |
|---|--|--|------------------------------|-------------------------------|

Penetration(cm): 9      Time: 0933      Number of Benthic bottles: 3

Surface biology: Live/dead crepidula      Volume of PSD sample (ml): 250

### Station Comments:

*moved reps 2+3 + chem ~50' SE of target  
lots of rocks on target*

Completed By: P. Curran



**Attachment B**  
**Chain of Custody Logs**



# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-108

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                   |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|-------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, |
| 9/22/2014 | 15:24 | NBH14-0001 |           | SED    | 120-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 14:24 | NBH14-0005 |           | SED    | 125-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 11:16 | NBH14-0009 |           | SED    | 130-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 12:08 | NBH14-0013 |           | SED    | 134-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 8:13  | NBH14-0017 |           | SED    | 150-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 11:38 | NBH14-0021 |           | SED    | 253-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 9:37  | NBH14-0025 |           | SED    | 216-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 10:40 | NBH14-0029 |           | SED    | 220-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 15:25 | NBH14-0033 |           | SED    | 235-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 14:03 | NBH14-0037 |           | SED    | 240-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/22/2014 | 13:06 | NBH14-0041 |           | SED    | 245-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 15:43 | NBH14-0045 |           | SED    | 146-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 14:57 | NBH14-0049 |           | SED    | 140-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 13:53 | NBH14-0053 |           | SED    | 202-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 10:12 | NBH14-0061 |           | SED    | 147-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 9:09  | NBH14-0065 |           | SED    | 135-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 14:27 | NBH14-0073 |           | SED    | 333-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 13:39 | NBH14-0077 |           | SED    | 339-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 12:26 | NBH14-0081 |           | SED    | 346-14LTM |  |      | 1   | X    |            |      |                             |                   |
| 9/23/2014 | 11:29 | NBH14-0085 |           | SED    | 340-14LTM |  |      | 1   | X    |            |      |                             |                   |

Relinquished By (name/date/time):

*Jessica M. Tenzar 9/25/14 1500*

Received By(name/date/tir



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-109

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 |           | SED    | 341-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 |           | SED    | 334-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 |           | SED    | 335-14LTM |  |      | 1   | X    |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):  
*Jessica Tenzar 9/25/14 1500*

Received By(name/date/time):



# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
GeoTesting Express  
125 Nagog Park  
Acton, MA 01720

Samplers Signature: PDS & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-110

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:24 | NBH14-0001 |           | SED    | 120-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 15:30 | NBH14-0002 |           | SED    | 120-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 15:38 | NBH14-0003 |           | SED    | 120-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 15:45 | NBH14-0004 |           | SED    | 120-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 |           | SED    | 125-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:32 | NBH14-0006 |           | SED    | 125-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:41 | NBH14-0007 |           | SED    | 125-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:54 | NBH14-0008 |           | SED    | 125-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 |           | SED    | 130-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:25 | NBH14-0010 |           | SED    | 130-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:32 | NBH14-0011 |           | SED    | 130-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:40 | NBH14-0012 |           | SED    | 130-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 |           | SED    | 134-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:15 | NBH14-0014 |           | SED    | 134-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:27 | NBH14-0015 |           | SED    | 134-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:33 | NBH14-0016 |           | SED    | 134-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 |           | SED    | 150-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:28  | NBH14-0018 |           | SED    | 150-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:39  | NBH14-0019 |           | SED    | 150-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:56  | NBH14-0020 |           | SED    | 150-14LTM |  |      |     |      | 1          | X    |                             |                                |

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*Sanjung* 9/25/14 15:00





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Mobile: (781)733-6797

A-111

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 11:38 | NBH14-0021 |           | SED    | 253-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:28 | NBH14-0022 |           | SED    | 253-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 11:49 | NBH14-0023 |           | SED    | 253-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:04 | NBH14-0024 |           | SED    | 253-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 |           | SED    | 216-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:14  | NBH14-0026 |           | SED    | 216-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:26  | NBH14-0027 |           | SED    | 216-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 9:43  | NBH14-0028 |           | SED    | 216-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 |           | SED    | 220-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 10:20 | NBH14-0030 |           | SED    | 220-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 10:29 | NBH14-0031 |           | SED    | 220-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 10:53 | NBH14-0032 |           | SED    | 220-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 |           | SED    | 235-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:40 | NBH14-0034 |           | SED    | 235-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:49 | NBH14-0035 |           | SED    | 235-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 15:00 | NBH14-0036 |           | SED    | 235-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 |           | SED    | 240-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 13:21 | NBH14-0038 |           | SED    | 240-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 13:30 | NBH14-0039 |           | SED    | 240-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 13:38 | NBH14-0040 |           | SED    | 240-14LTM |  |      |     |      | 1          | X    |                             |                                |

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A-112

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 13:06 | NBH14-0041 |           | SED    | 245-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:40 | NBH14-0042 |           | SED    | 245-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:46 | NBH14-0043 |           | SED    | 245-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/22/2014 | 12:53 | NBH14-0044 |           | SED    | 245-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 |           | SED    | 146-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 15:46 | NBH14-0046 |           | SED    | 146-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 16:00 | NBH14-0047 |           | SED    | 146-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 16:03 | NBH14-0048 |           | SED    | 146-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 |           | SED    | 140-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 15:02 | NBH14-0050 |           | SED    | 140-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 15:06 | NBH14-0051 |           | SED    | 140-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 15:11 | NBH14-0052 |           | SED    | 140-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 |           | SED    | 202-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:58 | NBH14-0054 |           | SED    | 202-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:04 | NBH14-0055 |           | SED    | 202-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:08 | NBH14-0056 |           | SED    | 202-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 |           | SED    | 333-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:13 | NBH14-0074 |           | SED    | 333-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:20 | NBH14-0075 |           | SED    | 333-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 14:36 | NBH14-0076 |           | SED    | 333-14LTM |  |      |     |      | 1          | X    |                             |                                |

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Mobile: (781)733-6797

A-113

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 13:39 | NBH14-0077 |           | SED    | 339-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 13:21 | NBH14-0078 |           | SED    | 339-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 13:31 | NBH14-0079 |           | SED    | 339-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0080 |           | SED    | 339-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 |           | SED    | 346-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 12:37 | NBH14-0082 |           | SED    | 346-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 12:45 | NBH14-0083 |           | SED    | 346-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 12:54 | NBH14-0084 |           | SED    | 346-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 |           | SED    | 340-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:15 | NBH14-0086 |           | SED    | 340-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:22 | NBH14-0087 |           | SED    | 340-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:36 | NBH14-0088 |           | SED    | 340-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:32 | NBH14-0089 |           | SED    | 341-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:22 | NBH14-0090 |           | SED    | 341-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:39 | NBH14-0091 |           | SED    | 341-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:48 | NBH14-0092 |           | SED    | 341-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 |           | SED    | 334-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:28  | NBH14-0094 |           | SED    | 334-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:35  | NBH14-0095 |           | SED    | 334-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:43  | NBH14-0096 |           | SED    | 334-14LTM |  |      |     |      | 1          | X    |                             |                                |

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A-114

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 8:57  | NBH14-0097 |           | SED    | 335-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 8:45  | NBH14-0098 |           | SED    | 335-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 8:51  | NBH14-0099 |           | SED    | 335-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:07  | NBH14-0100 |           | SED    | 335-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 |           | SED    | 147-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:16 | NBH14-0062 |           | SED    | 147-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:23 | NBH14-0063 |           | SED    | 147-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 10:29 | NBH14-0064 |           | SED    | 147-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 |           | SED    | 135-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:12  | NBH14-0066 |           | SED    | 135-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:17  | NBH14-0067 |           | SED    | 135-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:24  | NBH14-0068 |           | SED    | 135-14LTM |  |      |     |      | 1          | X    |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

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 9/25/14 15:00

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A-115

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*J M Jones* 9/26/14 9:15

Received By(name/date/time):

*MW* 9/26/14 9:15



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A-116


Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

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 9/26/14 9:15

Received By(name/date/time):

 9/26/14





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Mobile: (781)733-6797

A-117

## Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 |           | SED    | 349-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 |           | SED    | 352-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 |           | SED    | 345-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 |           | SED    | 318-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 |           | SED    | 311-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 |           | SED    | 306-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 |           | SED    | 221-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 |           | SED    | 249-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 |           | SED    | 317-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 |           | SED    | 309-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 |           | SED    | 310-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 |           | SED    | 304-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 |           | SED    | 250-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 |           | SED    | 105-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 |           | SED    | 109-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 |           | SED    | 115-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 |           | SED    | 154-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 |           | SED    | 139-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 |           | SED    | 131-14LTM |  |      | 1   | X    |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessica M Tenzar* 9/29/14 15:30



# Chain of Custody

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Mobile, Alabama 36695

Samplers Signature: PDS & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-118

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:30 | NBH14-0002 | 43214     | TS     | 120-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 15:38 | NBH14-0003 | 43314     | TS     | 120-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 15:45 | NBH14-0004 | 43414     | TS     | 120-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 14:32 | NBH14-0006 | 43514     | TS     | 125-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 14:41 | NBH14-0007 | 43614     | TS     | 125-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 14:54 | NBH14-0008 | 43714     | TS     | 125-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 11:25 | NBH14-0010 | 43814     | TS     | 130-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 11:32 | NBH14-0011 | 43914     | TS     | 130-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 11:40 | NBH14-0012 | 44014     | TS     | 130-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:15 | NBH14-0014 | 44114     | TS     | 134-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:27 | NBH14-0015 | 44214     | TS     | 134-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:33 | NBH14-0016 | 44314     | TS     | 134-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 9:28  | NBH14-0018 | 44414     | TS     | 150-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 9:39  | NBH14-0019 | 44514     | TS     | 150-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 9:56  | NBH14-0020 | 44614     | TS     | 150-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 11:28 | NBH14-0022 | 44714     | TS     | 253-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 11:49 | NBH14-0023 | 44814     | TS     | 253-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:04 | NBH14-0024 | 44914     | TS     | 253-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 9:14  | NBH14-0026 | 45014     | TS     | 216-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 9:26  | NBH14-0027 | 45114     | TS     | 216-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 9:43  | NBH14-0028 | 45214     | TS     | 216-14LTM |  |      |     |      |            |      | 1                           | X                              |

Relinquished By (name/date/time):

*Jessie m jones* 9/29/14 1400

Received By(name/date/time):

*Samuel J. Baker* 9/30/14 1300





# Chain of Custody

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Mobile: (781)733-6797

A-119

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 10:20 | NBH14-0030 | 45314     | TS     | 220-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 10:29 | NBH14-0031 | 45414     | TS     | 220-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 10:53 | NBH14-0032 | 46514     | TS     | 220-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/22/2014 | 14:40 | NBH14-0034 | 45614     | TS     | 235-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 14:49 | NBH14-0035 | 45714     | TS     | 235-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 15:00 | NBH14-0036 | 45814     | TS     | 235-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 13:21 | NBH14-0038 | 45914     | TS     | 240-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 13:30 | NBH14-0039 | 46014     | TS     | 240-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 13:38 | NBH14-0040 | 46114     | TS     | 240-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:40 | NBH14-0042 | 46214     | TS     | 245-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:46 | NBH14-0043 | 46314     | TS     | 245-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/22/2014 | 12:53 | NBH14-0044 | 46414     | TS     | 245-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 15:46 | NBH14-0046 | 46514     | TS     | 146-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 16:00 | NBH14-0047 | 46614     | TS     | 146-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 16:03 | NBH14-0048 | 46714     | TS     | 146-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 15:02 | NBH14-0050 | 46814     | TS     | 140-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 15:06 | NBH14-0051 | 46914     | TS     | 140-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 15:11 | NBH14-0052 | 47014     | TS     | 140-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 13:58 | NBH14-0054 | 47114     | TS     | 202-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 14:04 | NBH14-0055 | 47214     | TS     | 202-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 14:08 | NBH14-0056 | 47314     | TS     | 202-14LTM |  |      |     |      |            |      | 2                           | X                              |

Relinquished By (name/date/time):

*Jessie M. Tenzar* 9/29/14 1100

Received By(name/date/time):

*Laura Stober* 9/30/14 1300



# Chain of Custody

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Mobile, Alabama 36695

Samplers Signature: PDS & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-120

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 11:14 | NBH14-0058 | 47414     | TS     | 151-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 11:20 | NBH14-0059 | 47514     | TS     | 151-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 11:28 | NBH14-0060 | 47614     | TS     | 151-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:16 | NBH14-0062 | 47714     | TS     | 147-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:23 | NBH14-0063 | 47814     | TS     | 147-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:29 | NBH14-0064 | 47914     | TS     | 147-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:12  | NBH14-0066 | 48014     | TS     | 135-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:17  | NBH14-0067 | 48114     | TS     | 135-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:24  | NBH14-0068 | 48214     | TS     | 135-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:12  | NBH14-0070 | 48314     | TS     | 155-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 9:17  | NBH14-0071 | 48414     | TS     | 155-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 9:24  | NBH14-0072 | 48514     | TS     | 155-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 14:13 | NBH14-0074 | 48614     | TS     | 333-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 14:20 | NBH14-0075 | 48714     | TS     | 333-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/23/2014 | 14:36 | NBH14-0076 | 48814     | TS     | 333-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/23/2014 | 13:21 | NBH14-0078 | 48914     | TS     | 339-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 13:31 | NBH14-0079 | 49014     | TS     | 339-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 13:53 | NBH14-0080 | 49114     | TS     | 339-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 12:37 | NBH14-0082 | 49214     | TS     | 346-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 12:45 | NBH14-0083 | 49314     | TS     | 346-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 12:54 | NBH14-0084 | 49414     | TS     | 346-14LTM |  |      |     |      |            |      | 1                           | X                              |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessie M. Jones* 9/29/14 1400

*Lauren Stober* 9/30/14 1300



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Mobile: (781)733-6797

A-121

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 11:15 | NBH14-0086 | 49514     | TS     | 340-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 11:22 | NBH14-0087 | 49614     | TS     | 340-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 11:36 | NBH14-0088 | 49714     | TS     | 340-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:22 | NBH14-0090 | 49814     | TS     | 341-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:39 | NBH14-0091 | 49914     | TS     | 341-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 10:48 | NBH14-0092 | 50014     | TS     | 341-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:28  | NBH14-0094 | 50114     | TS     | 334-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:35  | NBH14-0095 | 50214     | TS     | 334-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 9:43  | NBH14-0096 | 50314     | TS     | 334-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/23/2014 | 8:45  | NBH14-0098 | 50414     | TS     | 335-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 8:51  | NBH14-0099 | 50514     | TS     | 335-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/23/2014 | 9:07  | NBH14-0100 | 50614     | TS     | 335-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 10:03 | NBH14-0102 | 50714     | TS     | 349-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/24/2014 | 10:09 | NBH14-0103 | 50814     | TS     | 349-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/24/2014 | 10:22 | NBH14-0104 | 50914     | TS     | 349-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/24/2014 | 8:54  | NBH14-0106 | 51014     | TS     | 352-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 9:12  | NBH14-0107 | 51114     | TS     | 352-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/24/2014 | 9:33  | NBH14-0108 | 51214     | TS     | 352-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/24/2014 | 10:50 | NBH14-0110 | 51314     | TS     | 345-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/24/2014 | 11:01 | NBH14-0111 | 51414     | TS     | 345-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/24/2014 | 11:07 | NBH14-0112 | 51514     | TS     | 345-14LTM |  |      |     |      |            |      | 1                           | X                              |

Relinquished By (name/date/time):

*Jessie M Jones 9/29/14 1400*

Received By(name/date/time):

*Lauren Stober 9/30/14 1300*





# Chain of Custody

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Mobile: (781)733-6797

A-122

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 11:54 | NBH14-0114 | 51614     | TS     | 318-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 12:18 | NBH14-0115 | 51714     | TS     | 318-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/24/2014 | 12:23 | NBH14-0116 | 51814     | TS     | 318-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 13:22 | NBH14-0118 | 51914     | TS     | 311-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 13:33 | NBH14-0119 | 52014     | TS     | 311-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 13:39 | NBH14-0120 | 52114     | TS     | 311-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 14:07 | NBH14-0122 | 52214     | TS     | 306-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 14:14 | NBH14-0123 | 52314     | TS     | 306-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/24/2014 | 14:33 | NBH14-0124 | 52414     | TS     | 306-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 7:55  | NBH14-0126 | 52514     | TS     | 221-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 8:03  | NBH14-0127 | 52614     | TS     | 221-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 8:23  | NBH14-0128 | 52714     | TS     | 221-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 9:29  | NBH14-0130 | 52814     | TS     | 249-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 9:37  | NBH14-0131 | 52914     | TS     | 249-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 10:08 | NBH14-0132 | 53014     | TS     | 249-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 10:39 | NBH14-0134 | 53114     | TS     | 317-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 10:47 | NBH14-0135 | 53214     | TS     | 317-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 11:08 | NBH14-0136 | 53314     | TS     | 317-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 11:31 | NBH14-0138 | 53414     | TS     | 309-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 11:33 | NBH14-0139 | 53514     | TS     | 309-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 11:34 | NBH14-0140 | 53614     | TS     | 309-14LTM |  |      |     |      |            |      | 1                           | X                              |

Relinquished By (name/date/time):

*Jessica Tenzar* 9/29/14 1100

Received By (name/date/time):

*James D. Dyer* 9/30/14 1300



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Mobile: (781)733-6797

A-123

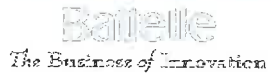
| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/25/2014 | 12:57 | NBH14-0142 | 53714     | TS     | 310-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 13:12 | NBH14-0143 | 53814     | TS     | 310-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 13:18 | NBH14-0144 | 53914     | TS     | 310-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 13:41 | NBH14-0146 | 54014     | TS     | 304-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 13:54 | NBH14-0147 | 54114     | TS     | 304-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 14:12 | NBH14-0148 | 54214     | TS     | 304-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 14:38 | NBH14-0150 | 54314     | TS     | 250-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/25/2014 | 15:13 | NBH14-0151 | 54414     | TS     | 250-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/25/2014 | 15:21 | NBH14-0152 | 54514     | TS     | 250-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/25/2014 | 8:26  | NBH14-0154 | 54614     | TS     | 105-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 8:30  | NBH14-0155 | 54714     | TS     | 105-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 8:34  | NBH14-0156 | 54814     | TS     | 105-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 9:11  | NBH14-0158 | 54914     | TS     | 109-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 9:16  | NBH14-0159 | 55014     | TS     | 109-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 9:21  | NBH14-0160 | 55114     | TS     | 109-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 9:58  | NBH14-0162 | 55214     | TS     | 115-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 10:04 | NBH14-0163 | 55314     | TS     | 115-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 10:12 | NBH14-0164 | 55414     | TS     | 115-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 13:13 | NBH14-0166 | 55514     | TS     | 154-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 13:18 | NBH14-0167 | 55614     | TS     | 154-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/25/2014 | 13:30 | NBH14-0168 | 55714     | TS     | 154-14LTM |  |      |     |      |            |      | 2                           | X                              |

Relinquished By (name/date/time):

*Jessie M. Jones* 9/29/14 1700

Received By(name/date/time):

*Lauren Hobbs* 9/30/14 1300



# Chain of Custody

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Mobile, Alabama 36695

Samplers Signature: PDS & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

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| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/25/2014 | 14:20 | NBH14-0170 | 55814     | TS     | 139-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 14:22 | NBH14-0171 | 55914     | TS     | 139-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 14:30 | NBH14-0172 | 56014     | TS     | 139-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 15:20 | NBH14-0174 | 56114     | TS     | 131-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 15:28 | NBH14-0175 | 56214     | TS     | 131-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/25/2014 | 15:32 | NBH14-0176 | 56314     | TS     | 131-14LTM |  |      |     |      |            |      | 1                           | X                              |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Sam Jung* 9/29/14 1400

Received By(name/date/time):

*Lance Stober* 9/30/14 1300





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# Chain of Custody

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Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-125

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 |           | SED    | 349-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 10:03 | NBH14-0102 |           | SED    | 349-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 10:09 | NBH14-0103 |           | SED    | 349-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 10:22 | NBH14-0104 |           | SED    | 349-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 |           | SED    | 352-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 8:54  | NBH14-0106 |           | SED    | 352-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 9:12  | NBH14-0107 |           | SED    | 352-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 9:33  | NBH14-0108 |           | SED    | 352-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 |           | SED    | 345-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 10:50 | NBH14-0110 |           | SED    | 345-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 11:01 | NBH14-0111 |           | SED    | 345-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 11:07 | NBH14-0112 |           | SED    | 345-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 |           | SED    | 318-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 11:54 | NBH14-0114 |           | SED    | 318-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 12:18 | NBH14-0115 |           | SED    | 318-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 12:23 | NBH14-0116 |           | SED    | 318-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 |           | SED    | 311-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 13:22 | NBH14-0118 |           | SED    | 311-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 13:33 | NBH14-0119 |           | SED    | 311-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 13:39 | NBH14-0120 |           | SED    | 311-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessica M Tenzar* 9/30/14 1500





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Mobile: (781)733-6797

A-126

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 14:24 | NBH14-0121 |           | SED    | 306-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 14:07 | NBH14-0122 |           | SED    | 306-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 14:14 | NBH14-0123 |           | SED    | 306-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 14:33 | NBH14-0124 |           | SED    | 306-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 |           | SED    | 221-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 7:55  | NBH14-0126 |           | SED    | 221-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:03  | NBH14-0127 |           | SED    | 221-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:23  | NBH14-0128 |           | SED    | 221-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 |           | SED    | 249-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:29  | NBH14-0130 |           | SED    | 249-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:37  | NBH14-0131 |           | SED    | 249-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 10:08 | NBH14-0132 |           | SED    | 249-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 |           | SED    | 317-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 10:39 | NBH14-0134 |           | SED    | 317-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 10:47 | NBH14-0135 |           | SED    | 317-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:08 | NBH14-0136 |           | SED    | 317-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 |           | SED    | 309-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:31 | NBH14-0138 |           | SED    | 309-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:33 | NBH14-0139 |           | SED    | 309-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 11:34 | NBH14-0140 |           | SED    | 309-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessie M Tenzar* 9/30/14 15:00





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Mobile: (781)733-6797

A-127

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/25/2014 | 12:58 | NBH14-0141 |           | SED    | 310-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 12:57 | NBH14-0142 |           | SED    | 310-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:12 | NBH14-0143 |           | SED    | 310-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:18 | NBH14-0144 |           | SED    | 310-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 |           | SED    | 304-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:41 | NBH14-0146 |           | SED    | 304-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:54 | NBH14-0147 |           | SED    | 304-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:12 | NBH14-0148 |           | SED    | 304-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 |           | SED    | 250-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:38 | NBH14-0150 |           | SED    | 250-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:13 | NBH14-0151 |           | SED    | 250-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:21 | NBH14-0152 |           | SED    | 250-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 |           | SED    | 105-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:26  | NBH14-0154 |           | SED    | 105-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:30  | NBH14-0155 |           | SED    | 105-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 8:34  | NBH14-0156 |           | SED    | 105-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 |           | SED    | 109-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:11  | NBH14-0158 |           | SED    | 109-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:16  | NBH14-0159 |           | SED    | 109-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:21  | NBH14-0160 |           | SED    | 109-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessica m Tenzar 9/30/14 1500*





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A-128

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/25/2014 | 9:55  | NBH14-0161 |           | SED    | 115-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 9:58  | NBH14-0162 |           | SED    | 115-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 10:04 | NBH14-0163 |           | SED    | 115-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 10:12 | NBH14-0164 |           | SED    | 115-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 |           | SED    | 154-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:13 | NBH14-0166 |           | SED    | 154-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:18 | NBH14-0167 |           | SED    | 154-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 13:30 | NBH14-0168 |           | SED    | 154-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 |           | SED    | 139-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:20 | NBH14-0170 |           | SED    | 139-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:22 | NBH14-0171 |           | SED    | 139-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:30 | NBH14-0172 |           | SED    | 139-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 |           | SED    | 131-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:20 | NBH14-0174 |           | SED    | 131-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:28 | NBH14-0175 |           | SED    | 131-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 15:32 | NBH14-0176 |           | SED    | 131-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 |           | SED    | 247-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 7:23  | NBH14-0178 |           | SED    | 247-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 7:31  | NBH14-0179 |           | SED    | 247-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 |       | NBH14-0180 |           | SED    | 247-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessie m Jung* 9/30/14 15:00





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A-129

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 8:36  | NBH14-0181 |           | SED    | 242-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:18  | NBH14-0182 |           | SED    | 242-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:27  | NBH14-0183 |           | SED    | 242-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:45  | NBH14-0184 |           | SED    | 242-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 |           | SED    | 241-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:29  | NBH14-0186 |           | SED    | 241-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:39  | NBH14-0187 |           | SED    | 241-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:58  | NBH14-0188 |           | SED    | 241-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 |           | SED    | 237-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:15 | NBH14-0190 |           | SED    | 237-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:30 | NBH14-0191 |           | SED    | 237-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:45 | NBH14-0192 |           | SED    | 237-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 |           | SED    | 236-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:15 | NBH14-0194 |           | SED    | 236-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:23 | NBH14-0195 |           | SED    | 236-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:38 | NBH14-0196 |           | SED    | 236-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 |           | SED    | 231-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:20 | NBH14-0198 |           | SED    | 231-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:30 | NBH14-0235 |           | SED    | 231-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:50 | NBH14-0236 |           | SED    | 231-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jessica M. Tenzar* 9/30/14 10:00





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Samplers Signature: PDS & MRF

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Mobile: (781)733-6797

A-130

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 14:24 | NBH14-0199 |           | SED    | 230-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:12 | NBH14-0200 |           | SED    | 230-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:18 | NBH14-0201 |           | SED    | 230-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:33 | NBH14-0202 |           | SED    | 230-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 |           | SED    | 117-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 15:21 | NBH14-0204 |           | SED    | 117-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 15:26 | NBH14-0205 |           | SED    | 117-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 15:31 | NBH14-0206 |           | SED    | 117-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 |           | SED    | 114-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:38 | NBH14-0208 |           | SED    | 114-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:43 | NBH14-0209 |           | SED    | 114-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 14:48 | NBH14-0210 |           | SED    | 114-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 |           | SED    | 111-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:40 | NBH14-0212 |           | SED    | 111-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:46 | NBH14-0213 |           | SED    | 111-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 13:51 | NBH14-0214 |           | SED    | 111-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 |           | SED    | 152-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:26  | NBH14-0216 |           | SED    | 152-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:33  | NBH14-0217 |           | SED    | 152-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:37  | NBH14-0218 |           | SED    | 152-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Jm Juez* 9/30/14 15:20





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Samplers Signature: PDS & MRF

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Mobile: (781)733-6797

A-131

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 8:50  | NBH14-0219 |           | SED    | 152-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 |           | SED    | 138-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:29  | NBH14-0221 |           | SED    | 138-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:36  | NBH14-0222 |           | SED    | 138-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 9:41  | NBH14-0223 |           | SED    | 138-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 |           | SED    | 126-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 10:58 | NBH14-0225 |           | SED    | 126-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:03 | NBH14-0226 |           | SED    | 126-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:06 | NBH14-0227 |           | SED    | 126-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 |           | SED    | 108-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 11:59 | NBH14-0229 |           | SED    | 108-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:06 | NBH14-0230 |           | SED    | 108-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 12:12 | NBH14-0231 |           | SED    | 108-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 |           | SED    | 139-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 |           | SED    | 242-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 |           | SED    | 306-14LTM |  |      |     |      | 1          | X    |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*J M Jones* 9/30/14 1500





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Samplers Signature: PSD &MRF  
(Please report data to GeoTesting Express)

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-132

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 |           | SED    | 151-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 |           | SED    | 155-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 |           | SED    | 247-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 |           | SED    | 242-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 |           | SED    | 241-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 |           | SED    | 237-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 |           | SED    | 236-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 |           | SED    | 231-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 |           | SED    | 230-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 |           | SED    | 117-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 |           | SED    | 114-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 |           | SED    | 111-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 |           | SED    | 152-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 |           | SED    | 152-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 |           | SED    | 138-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 |           | SED    | 126-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 |           | SED    | 108-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 |           | SED    | 139-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 |           | SED    | 242-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 |           | SED    | 306-14LTM |  |      | 1   | X    |            |      |                             |                                |

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*Paul Scholz* 1-OCT-14 12:30

Received By(name/date/time):





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Samplers Signature: PSD &MRF  
(Please report data to GeoTesting Express)

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-133

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:14 | NBH14-0237 |           | SED    | 222-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 15:54 | NBH14-0241 |           | SED    | 224-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 |           | SED    | 128-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 |           | SED    | 123-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 |           | SED    | 121-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 |           | SED    | 218-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 |           | SED    | 208-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 |           | SED    | 207-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 |           | SED    | 332-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 |           | SED    | 338-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 |           | SED    | 331-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 |           | SED    | 323-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 |           | SED    | 324-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 |           | SED    | 325-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 |           | SED    | 225-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 9:02  | NBH14-0306 |           | SED    | 226-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 |           | SED    | 227-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 |           | SED    | 217-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 |           | SED    | 212-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 |           | SED    | 211-14LTM |  |      | 1   | X    |            |      |                             |                                |

Relinquished By (name/date/time):

*Paul Schell* 1-Oct-14 12:30

Received By(name/date/time):





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(Please report data to GeoTesting Express)

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Mobile: (781)733-6797

A-134

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 14:36 | NBH14-0326 |           | SED    | 204-14LTM |  |      | 1   | X    |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Paul Schmitt* / 1-Oct-14 12:30

Received By(name/date/time):

\_\_\_\_\_



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Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-135

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 |           | SED    | 151-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 |           | SED    | 155-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 |           | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 |           | SED    | 241-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 |           | SED    | 237-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 |           | SED    | 236-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 |           | SED    | 231-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 |           | SED    | 230-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 |           | SED    | 117-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 |           | SED    | 114-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 |           | SED    | 111-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 |           | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 |           | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 |           | SED    | 138-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 |           | SED    | 126-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 |           | SED    | 108-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 |           | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 |           | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 |           | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:14 | NBH14-0237 |           | SED    | 222-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By(name/date/time):





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# Chain of Custody

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Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-136

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 |           | SED    | 224-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 |           | SED    | 128-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 |           | SED    | 123-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 |           | SED    | 121-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 |           | SED    | 218-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 |           | SED    | 208-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 |           | SED    | 207-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 |           | SED    | 332-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 |           | SED    | 338-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 |           | SED    | 331-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 |           | SED    | 323-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 |           | SED    | 324-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 |           | SED    | 325-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 |           | SED    | 225-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2104 | 9:02  | NBH14-0306 |           | SED    | 226-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 |           | SED    | 227-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 |           | SED    | 217-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 |           | SED    | 212-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 |           | SED    | 211-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 14:36 | NBH14-0326 |           | SED    | 204-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

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Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-137

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 |           | SED    | 349-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 |           | SED    | 352-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 |           | SED    | 345-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 |           | SED    | 318-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 |           | SED    | 311-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 |           | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 |           | SED    | 221-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 |           | SED    | 249-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 |           | SED    | 317-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 |           | SED    | 309-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 |           | SED    | 310-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 |           | SED    | 304-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 |           | SED    | 250-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 |           | SED    | 105-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 |           | SED    | 109-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 |           | SED    | 115-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 |           | SED    | 154-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 |           | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 |           | SED    | 131-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 |           | SED    | 247-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By(name/date/time):





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Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-138

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 11:14 | NBH14-0058 |           | SED    | 151-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:20 | NBH14-0059 |           | SED    | 151-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 11:28 | NBH14-0060 |           | SED    | 151-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:12  | NBH14-0070 |           | SED    | 155-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:17  | NBH14-0071 |           | SED    | 155-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/23/2014 | 9:24  | NBH14-0072 |           | SED    | 155-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 10:09 | NBH14-0057 |           | SED    | 151-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 |           | SED    | 155-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:14 | NBH14-0237 |           | SED    | 222-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:54 | NBH14-0241 |           | SED    | 224-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:44 | NBH14-0242 |           | SED    | 224-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:48 | NBH14-0243 |           | SED    | 224-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 16:00 | NBH14-0244 |           | SED    | 224-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 |           | SED    | 128-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0246 |           | SED    | 128-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:23  | NBH14-0247 |           | SED    | 128-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:32  | NBH14-0248 |           | SED    | 128-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 |           | SED    | 123-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:14  | NBH14-0250 |           | SED    | 123-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:38  | NBH14-0251 |           | SED    | 123-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

*Paul Schoff* 1-Oct-14 13:00

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A-139

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 9:26  | NBH14-0252 |           | SED    | 123-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 |           | SED    | 121-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:08 | NBH14-0254 |           | SED    | 121-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:09 | NBH14-0255 |           | SED    | 121-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:16 | NBH14-0256 |           | SED    | 121-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 |           | SED    | 218-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 13:02 | NBH14-0258 |           | SED    | 218-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 14:02 | NBH14-0259 |           | SED    | 218-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 14:14 | NBH14-0260 |           | SED    | 218-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 14:50 | NBH14-0262 |           | SED    | 208-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 14:54 | NBH14-0263 |           | SED    | 208-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:01 | NBH14-0264 |           | SED    | 208-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 |           | SED    | 207-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:30 | NBH14-0266 |           | SED    | 207-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:34 | NBH14-0267 |           | SED    | 207-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:51 | NBH14-0268 |           | SED    | 207-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 |           | SED    | 332-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:01  | NBH14-0270 |           | SED    | 332-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:18  | NBH14-0271 |           | SED    | 332-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:28  | NBH14-0272 |           | SED    | 332-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

*Paul Scheldt* 1-Oct-14 1300

Received By(name/date/time):





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A-140

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 9:08  | NBH14-0273 |           | SED    | 338-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 8:52  | NBH14-0274 |           | SED    | 338-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:01  | NBH14-0275 |           | SED    | 338-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:18  | NBH14-0276 |           | SED    | 338-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 |           | SED    | 331-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:37  | NBH14-0278 |           | SED    | 331-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 9:44  | NBH14-0279 |           | SED    | 331-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:03 | NBH14-0280 |           | SED    | 331-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 |           | SED    | 323-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:28 | NBH14-0282 |           | SED    | 323-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:37 | NBH14-0283 |           | SED    | 323-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 10:52 | NBH14-0284 |           | SED    | 323-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 |           | SED    | 324-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 11:34 | NBH14-0286 |           | SED    | 324-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 11:47 | NBH14-0287 |           | SED    | 324-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 11:54 | NBH14-0288 |           | SED    | 324-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 |           | SED    | 325-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 12:07 | NBH14-0290 |           | SED    | 325-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 12:16 | NBH14-0291 |           | SED    | 325-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 12:35 | NBH14-0292 |           | SED    | 325-14LTM |  |      |     |      | 1          | X    |                             |                                |

Relinquished By (name/date/time):

*Paul S. [Signature]* 1-OCT-14 1300

Received By(name/date/time):





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A-141

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 8:00  | NBH14-0302 |           | SED    | 225-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 7:44  | NBH14-0303 |           | SED    | 225-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 7:53  | NBH14-0304 |           | SED    | 225-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 8:08  | NBH14-0305 |           | SED    | 225-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 9:02  | NBH14-0306 |           | SED    | 226-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 8:34  | NBH14-0307 |           | SED    | 226-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 8:44  | NBH14-0308 |           | SED    | 226-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 8:47  | NBH14-0309 |           | SED    | 226-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 |           | SED    | 227-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 9:44  | NBH14-0311 |           | SED    | 227-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 9:52  | NBH14-0312 |           | SED    | 227-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 10:20 | NBH14-0313 |           | SED    | 227-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 |           | SED    | 217-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 11:34 | NBH14-0315 |           | SED    | 217-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 11:40 | NBH14-0316 |           | SED    | 217-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 11:52 | NBH14-0317 |           | SED    | 217-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 |           | SED    | 212-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 12:24 | NBH14-0319 |           | SED    | 212-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 12:32 | NBH14-0320 |           | SED    | 212-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 12:54 | NBH14-0321 |           | SED    | 212-14LTM |  |      |     |      | 1          | X    |                             |                                |

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*Karl Scholtz 1-10-14 13:00*

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A-142

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 13:44 | NBH14-0322 |           | SED    | 211-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 13:25 | NBH14-0323 |           | SED    | 211-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 13:33 | NBH14-0324 |           | SED    | 211-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 13:51 | NBH14-0325 |           | SED    | 211-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 14:36 | NBH14-0326 |           | SED    | 204-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 14:17 | NBH14-0327 |           | SED    | 204-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 14:25 | NBH14-0328 |           | SED    | 204-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/30/2014 | 14:45 | NBH14-0329 |           | SED    | 204-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:04 | NBH14-0238 |           | SED    | 222-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:09 | NBH14-0239 |           | SED    | 222-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 15:20 | NBH14-0240 |           | SED    | 222-14LTM |  |      |     |      | 1          | X    |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 |           | SED    | 208-14LTM |  |      |     |      | 1          | X    |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

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*Karl Scholze* 1-Oct-14 13:00



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Site Contact: Matt Fitzpatrick  
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A-143

**Analyses (Record No. of containers / Preservative)**

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 11:59 | NBH14-0229 |           | TS     | 108-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 12:06 | NBH14-0230 |           | TS     | 108-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 12:12 | NBH14-0231 |           | TS     | 108-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 13:40 | NBH14-0212 |           | TS     | 111-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 13:46 | NBH14-0213 |           | TS     | 111-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 13:51 | NBH14-0214 |           | TS     | 111-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 14:38 | NBH14-0208 |           | TS     | 114-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 14:43 | NBH14-0209 |           | TS     | 114-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 14:48 | NBH14-0210 |           | TS     | 114-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 15:21 | NBH14-0204 |           | TS     | 117-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 15:26 | NBH14-0205 |           | TS     | 117-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 15:31 | NBH14-0206 |           | TS     | 117-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:08 | NBH14-0254 |           | TS     | 121-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:09 | NBH14-0255 |           | TS     | 121-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:16 | NBH14-0256 |           | TS     | 121-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:14  | NBH14-0250 |           | TS     | 123-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:38  | NBH14-0251 |           | TS     | 123-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:26  | NBH14-0252 |           | TS     | 123-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 10:58 | NBH14-0225 |           | TS     | 126-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 11:03 | NBH14-0226 |           | TS     | 126-14LTM |  |      |     |      |            |      | 2                           | X                              |

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*Matthew R. [Signature]* 10/2/14 1200





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Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-144

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 11:06 | NBH14-0227 |           | TS     | 126-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 8:13  | NBH14-0246 |           | TS     | 128-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 8:23  | NBH14-0247 |           | TS     | 128-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 8:32  | NBH14-0248 |           | TS     | 128-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 9:29  | NBH14-0221 |           | TS     | 138-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 9:36  | NBH14-0222 |           | TS     | 138-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 9:41  | NBH14-0223 |           | TS     | 138-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:26  | NBH14-0216 |           | TS     | 152-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:33  | NBH14-0217 |           | TS     | 152-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:37  | NBH14-0218 |           | TS     | 152-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/30/2014 | 14:17 | NBH14-0327 |           | TS     | 204-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 14:25 | NBH14-0328 |           | TS     | 204-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 14:45 | NBH14-0329 |           | TS     | 204-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:30 | NBH14-0266 |           | TS     | 207-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:34 | NBH14-0267 |           | TS     | 207-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:51 | NBH14-0268 |           | TS     | 207-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 14:50 | NBH14-0262 |           | TS     | 208-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 14:54 | NBH14-0263 |           | TS     | 208-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 15:01 | NBH14-0264 |           | TS     | 208-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 13:25 | NBH14-0323 |           | TS     | 211-14LTM |  |      |     |      |            |      | 1                           | X                              |

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*Matthew K. Vittor* 10/2/14 1200

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A-145

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 13:33 | NBH14-0324 |           | TS     | 211-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 13:51 | NBH14-0325 |           | TS     | 211-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 12:24 | NBH14-0319 |           | TS     | 212-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 12:32 | NBH14-0320 |           | TS     | 212-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/30/2014 | 12:54 | NBH14-0321 |           | TS     | 212-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 11:34 | NBH14-0315 |           | TS     | 217-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 11:40 | NBH14-0316 |           | TS     | 217-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 11:52 | NBH14-0317 |           | TS     | 217-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 13:02 | NBH14-0258 |           | TS     | 218-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 14:02 | NBH14-0259 |           | TS     | 218-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 14:14 | NBH14-0260 |           | TS     | 218-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/29/2014 | 15:04 | NBH14-0238 |           | TS     | 222-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:09 | NBH14-0239 |           | TS     | 222-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:20 | NBH14-0240 |           | TS     | 222-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/29/2014 | 15:44 | NBH14-0242 |           | TS     | 224-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 15:48 | NBH14-0243 |           | TS     | 224-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 16:00 | NBH14-0244 |           | TS     | 224-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 7:44  | NBH14-0303 |           | TS     | 225-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/30/2014 | 7:53  | NBH14-0304 |           | TS     | 225-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/30/2014 | 8:08  | NBH14-0305 |           | TS     | 225-14LTM |  |      |     |      |            |      | 2                           | X                              |

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A-146

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 8:34  | NBH14-0307 |           | TS     | 226-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 8:44  | NBH14-0308 |           | TS     | 226-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 8:47  | NBH14-0309 |           | TS     | 226-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/30/2014 | 9:44  | NBH14-0311 |           | TS     | 227-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/30/2014 | 9:52  | NBH14-0312 |           | TS     | 227-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/30/2014 | 10:20 | NBH14-0313 |           | TS     | 227-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 14:12 | NBH14-0200 |           | TS     | 230-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 14:18 | NBH14-0201 |           | TS     | 230-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 14:33 | NBH14-0202 |           | TS     | 230-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 13:20 | NBH14-0198 |           | TS     | 231-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 13:30 | NBH14-0235 |           | TS     | 231-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 13:50 | NBH14-0236 |           | TS     | 231-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 12:15 | NBH14-0194 |           | TS     | 236-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 12:23 | NBH14-0195 |           | TS     | 236-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 12:38 | NBH14-0196 |           | TS     | 236-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 11:15 | NBH14-0190 |           | TS     | 237-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/26/2014 | 11:30 | NBH14-0191 |           | TS     | 237-14LTM |  |      |     |      |            |      | 2                           | X                              |
| 9/26/2014 | 11:45 | NBH14-0192 |           | TS     | 237-14LTM |  |      |     |      |            |      | 3                           | X                              |
| 9/26/2014 | 9:29  | NBH14-0186 |           | TS     | 241-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 9:39  | NBH14-0187 |           | TS     | 241-14LTM |  |      |     |      |            |      | 1                           | X                              |

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A-147

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/26/2014 | 9:58  | NBH14-0188 |           | TS     | 241-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:18  | NBH14-0182 |           | TS     | 242-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:27  | NBH14-0183 |           | TS     | 242-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 8:45  | NBH14-0184 |           | TS     | 242-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 7:23  | NBH14-0178 |           | TS     | 247-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 | 7:31  | NBH14-0179 |           | TS     | 247-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/26/2014 |       | NBH14-0180 |           | TS     | 247-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:28 | NBH14-0282 |           | TS     | 323-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:37 | NBH14-0283 |           | TS     | 323-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:52 | NBH14-0284 |           | TS     | 323-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 11:34 | NBH14-0286 |           | TS     | 324-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 11:47 | NBH14-0287 |           | TS     | 324-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 11:54 | NBH14-0288 |           | TS     | 324-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 12:07 | NBH14-0290 |           | TS     | 325-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 12:16 | NBH14-0291 |           | TS     | 325-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 12:35 | NBH14-0292 |           | TS     | 325-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:37  | NBH14-0278 |           | TS     | 331-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:44  | NBH14-0279 |           | TS     | 331-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 10:03 | NBH14-0280 |           | TS     | 331-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 8:01  | NBH14-0270 |           | TS     | 332-14LTM |  |      |     |      |            |      | 1                           | X                              |

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*Matthew R. Byl* 10/2/14 1200





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Phone: (781) 681-5532

Ship to: Carl Way  
Barry Vittor & Associates  
8060 Cottage Hill Road  
Mobile, Alabama 36695

Samplers Signature: PDS & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

A-148

### Analyses (Record No. of containers / Preservative)

| Date      | Time | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |      |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 8:18 | NBH14-0271 |           | TS     | 332-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 8:28 | NBH14-0272 |           | TS     | 332-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 8:52 | NBH14-0274 |           | TS     | 338-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:01 | NBH14-0275 |           | TS     | 338-14LTM |  |      |     |      |            |      | 1                           | X                              |
| 9/29/2014 | 9:18 | NBH14-0276 |           | TS     | 338-14LTM |  |      |     |      |            |      | 1                           | X                              |
|           |      |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

Received By(name/date/time):

*Ma W R 3/2 10/2/14 1200*

**Attachment C**  
**GPS Calibration Forms**

|   |  |               |
|---|--|---------------|
| Project No. 100053747   | Date: 9/22/14  | Recorder: MRF |
| DGPS (make/model/SN):   | Coordinate System and units:<br>NAD83                          |               |
| <b>Morning dGPS Check</b>   |  |               |
| Time of check (local):<br>0815  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |               |
| Benchmark or Reference Point ID: North side of dock @<br>Marine Hydraulics ramp         | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |               |
| Established Latitude/Northing:<br>GPSmap 41.64603                                       | Established Longitude/Easting:<br>70.92185                     |               |
| Measured Latitude/Northing:<br>41.646019  | Measured Longitude/Easting:<br>70.921845                       |               |
| Instrument Measured Displacement (meters): 1.29   |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO                |  |               |
| <b>Afternoon dGPS Check</b>   |  |               |
| Time of check (local):<br>1600  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |               |
| Benchmark or Reference Point ID: South side of dock<br>@ Marine Hydraulics ramp         | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |               |
| Established Latitude/Northing:<br>41.64597  | Established Longitude/Easting:<br>70.92196                     |               |
| Measured Latitude/Northing:<br>41.645973  | Measured Longitude/Easting:<br>70.921958                       |               |
| Instrument Measured Displacement (meters): .37  |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO                |  |               |
| Field Activities / Comments / Observations:   |  |               |
| Had to compare 2 GPS models since one used is mounted on vessel GPSmap 76Cx is handheld |  |               |
| Established coordinates are an average of 30 readings                                   |  |               |

Field Team Leader Signature M. Fitzpatrick

|  |  |                          |
|--|--|--------------------------|
| Project No. 100053747  | Date: 9/23/14  | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):  | Coordinate System and units:<br>NAD83                          |                          |
| <b>Morning dGPS Check</b>  |  |                          |
| Time of check (local):<br>0730   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: South side<br>Marine Hydraulics Ramp    | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                               | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.645975                                 | Measured Longitude/Easting:<br>70.921954                       |                          |
| Instrument Measured Displacement (meters): .75                           |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |  |                          |
| <b>Afternoon dGPS Check</b>  |  |                          |
| Time of check (local):<br>1545   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: South side<br>Marine Hydraulics Ramp    | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                               | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.645974                                 | Measured Longitude/Easting:<br>70.921958                       |                          |
| Instrument Measured Displacement (meters): .48                           |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |  |                          |
| Field Activities / Comments / Observations:                              |  |                          |
| Compare GPS units see Check from 9/22/14                                 |  |                          |
|  |  |                          |
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Field Team Leader Signature \_\_\_\_\_

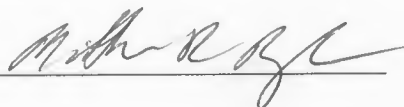


|  |   |                          |
|--|---|--------------------------|
| Project No. 100053747  | Date: 9/24/14   | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):  | Coordinate System and units:<br>NAD83                       |                          |
| <b>Morning dGPS Check</b>  |   |                          |
| Time of check (local):<br>0715   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                  |                          |
| Benchmark or Reference Point ID: South side of Dock @ Marine Hydraulics ramp | Benchmark or Reference Point Established By: M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                                   | Established Longitude/Easting:<br>70.92196                  |                          |
| Measured Latitude/Northing:<br>41.645977                                     | Measured Longitude/Easting:<br>70.921961                    |                          |
| Instrument Measured Displacement (meters): 0.78 m                            |   |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO  |   |                          |
| <b>Afternoon dGPS Check</b>  |   |                          |
| Time of check (local):<br>1550   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                  |                          |
| Benchmark or Reference Point ID: South side of Dock @ Marine Hydraulics Ramp | Benchmark or Reference Point Established By: M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                                   | Established Longitude/Easting:<br>70.92196                  |                          |
| Measured Latitude/Northing:<br>41.645975                                     | Measured Longitude/Easting:<br>70.921964                    |                          |
| Instrument Measured Displacement (meters): 0.65                              |   |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO  |   |                          |
| Field Activities / Comments / Observations:<br><br>Compare GPS units         |   |                          |
|  |   |                          |
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Field Team Leader Signature \_\_\_\_\_

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|---|--|--------------------------|
| Project No. 100053747   | Date: 9/25/14  | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):   | Coordinate System and units:<br>NAD83                          |                          |
| <b>Morning dGPS Check</b>   |  |                          |
| Time of check (local):<br>0715  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: S. side of dock @<br>Marine Hydraulics     | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>GPS map 41.64597                          | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.645972                                    | Measured Longitude/Easting:<br>70.921968                       |                          |
| Instrument Measured Displacement (meters): 0.70                             |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |                          |
| <b>Afternoon dGPS Check</b>   |  |                          |
| Time of check (local):<br>1600  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: South side of<br>Dock @ marine Hydraulics  | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>GPS map 41.64597                          | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.645974                                    | Measured Longitude/Easting:<br>70.921963                       |                          |
| Instrument Measured Displacement (meters): 0.51                             |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |                          |
| Field Activities / Comments / Observations:<br>Compare 2 GPS units          |  |                          |
|   |  |                          |
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Field Team Leader Signature



|   |  |                          |
|---|--|--------------------------|
| Project No. 100053747   | Date: 9/26/14  | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):   | Coordinate System and units:<br>NAD83                          |                          |
| <b>Morning dGPS Check</b>   |  |                          |
| Time of check (local):<br>0700  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: S. side of Dock @ Marine Hydraulics        | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                                  | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.64576                                     | Measured Longitude/Easting:<br>70.921965                       |                          |
| Instrument Measured Displacement (meters): 0.79                             |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |                          |
| <b>Afternoon dGPS Check</b>   |  |                          |
| Time of check (local):<br>1515  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: N. side of Dock @ marine Hydraulics        | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64603                                  | Established Longitude/Easting:<br>70.92185                     |                          |
| Measured Latitude/Northing:<br>41.646022                                    | Measured Longitude/Easting:<br>70.921848                       |                          |
| Instrument Measured Displacement (meters): 0.91                             |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |                          |
| Field Activities / Comments / Observations:<br>Compare GPS units            |  |                          |
|   |  |                          |
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Field Team Leader Signature M. Fitzpatrick

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|---|--|--------------------------|
| Project No. 100053747   | Date: 9/29/14  | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):   | Coordinate System and units:<br>NAD 83                         |                          |
| <b>Morning dGPS Check</b>   |  |                          |
| Time of check (local):<br>0700  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: S. side of<br>Marine Hydraulics Dock       | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64597                                  | Established Longitude/Easting:<br>70.92196                     |                          |
| Measured Latitude/Northing:<br>41.645974                                    | Measured Longitude/Easting:<br>70.921966                       |                          |
| Instrument Measured Displacement (meters): .67                              |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO    |  |                          |
| <b>Afternoon dGPS Check</b>   |  |                          |
| Time of check (local):<br>1620  | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                     |                          |
| Benchmark or Reference Point ID: North Dock<br>2nd North of North ramp dock | Benchmark or Reference Point Established By:<br>M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64602                                  | Established Longitude/Easting:<br>70.92187                     |                          |
| Measured Latitude/Northing:<br>41.646023                                    | Measured Longitude/Easting:<br>70.921875                       |                          |
| Instrument Measured Displacement (meters): .53                              |  |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO    |  |                          |
| Field Activities / Comments / Observations: Compare GPS units               |  |                          |
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Field Team Leader Signature M. Fitzpatrick



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| Project No. 100053747  | Date: 9/30/14   | Recorder: M. Fitzpatrick |
| DGPS (make/model/SN):  | Coordinate System and units:<br>NAD83                       |                          |
| <b>Morning dGPS Check</b>  |   |                          |
| Time of check (local):<br>0700   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                  |                          |
| Benchmark or Reference Point ID: North side of North slip                | Benchmark or Reference Point Established By: M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64602                               | Established Longitude/Easting:<br>70.92187                  |                          |
| Measured Latitude/Northing:<br>41.646026                                 | Measured Longitude/Easting:<br>70.921877                    |                          |
| Instrument Measured Displacement (meters): 0.89                          |   |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |   |                          |
| <b>Afternoon dGPS Check</b>  |   |                          |
| Time of check (local):<br>1530   | DGPS Estimate of Accuracy (PDOP):<br>± 3 m                  |                          |
| Benchmark or Reference Point ID: North side of North slip                | Benchmark or Reference Point Established By: M. Fitzpatrick |                          |
| Established Latitude/Northing:<br>41.64602                               | Established Longitude/Easting:<br>70.92187                  |                          |
| Measured Latitude/Northing:<br>41.646023                                 | Measured Longitude/Easting:<br>70.92188                     |                          |
| Instrument Measured Displacement (meters): 0.74                          |   |                          |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |   |                          |
| Field Activities / Comments / Observations:                              |   |                          |
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Field Team Leader Signature M. Fitzpatrick

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| Project No. 100053747  | Date: 9/22/14  | Recorder: M. Walsh |
| DGPS (make/model/SN):<br>Garmin 76CX   | Coordinate System and units:                             |                    |
| <b>Morning dGPS Check</b>  |  |                    |
| Time of check (local):<br>0716   | DGPS Estimate of Accuracy (PDOP):<br>±9"                 |                    |
| Benchmark or Reference Point ID:<br>Trailer  | Benchmark or Reference Point Established By:<br>M. Walsh |                    |
| Established Latitude/Northing:<br>41.65909   | Established Longitude/Easting:<br>70.92191               |                    |
| Measured Latitude/Northing:<br>41.65909  | Measured Longitude/Easting:<br>70.92191                  |                    |
| Instrument Measured Displacement (meters): 3                                       |  |                    |
| Displacement Acceptable? ( $\leq 3$ m): <input checked="" type="radio"/> YES    NO |  |                    |
| <b>Afternoon dGPS Check</b>  |  |                    |
| Time of check (local):<br>1703   | DGPS Estimate of Accuracy (PDOP):<br>±18"                |                    |
| Benchmark or Reference Point ID:<br>Trailer  | Benchmark or Reference Point Established By:<br>M. Walsh |                    |
| Established Latitude/Northing:<br>41.65909   | Established Longitude/Easting:<br>70.92191               |                    |
| Measured Latitude/Northing:<br>41.65908  | Measured Longitude/Easting:<br>70.92191                  |                    |
| Instrument Measured Displacement (meters): 3                                       |  |                    |
| Displacement Acceptable? ( $\leq 3$ m): <input checked="" type="radio"/> YES    NO |  |                    |
| Field Activities / Comments / Observations:  |  |                    |
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Field Team Leader Signature \_\_\_\_\_

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| Project No. 100053747   | Date: 9/23/14  | Recorder: PDS |
| DGPS (make/model/SN):<br>Garmin 76CX  | Coordinate System and units:                             |               |
| <b>Morning dGPS Check</b>   |  |               |
| Time of check (local):<br>0710  | DGPS Estimate of Accuracy (PDOP):<br>±9'                 |               |
| Benchmark or Reference Point ID:<br>Trailer                                 | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                                  | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65910                                     | Measured Longitude/Easting:<br>70.92191                  |               |
| Instrument Measured Displacement (meters): 3                                |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |               |
| <b>Afternoon dGPS Check</b>   |  |               |
| Time of check (local):<br>16:55   | DGPS Estimate of Accuracy (PDOP):<br>13m                 |               |
| Benchmark or Reference Point ID:<br>Trailer                                 | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                                  | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65909                                     | Measured Longitude/Easting:<br>70.92191                  |               |
| Instrument Measured Displacement (meters): 0                                |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |               |
| Field Activities / Comments / Observations:                                 |  |               |
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Field Team Leader Signature \_\_\_\_\_

25 ~~km~~ 9/25/14

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|---|--|---------------|
| Project No. 100053747   | Date: 24-Sep-14  | Recorder: PDS |
| DGPS (make/model/SN):<br>Garmin 76CX  | Coordinate System and units:                             |               |
| <b>Morning dGPS Check</b>   |  |               |
| Time of check (local):<br>0708  | DGPS Estimate of Accuracy (PDOP):<br>± 9'                |               |
| Benchmark or Reference Point ID:<br>Trailer                                 | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                                  | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65908                                     | Measured Longitude/Easting:<br>70.92192                  |               |
| Instrument Measured Displacement (meters): 3                                |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |               |
| <b>Afternoon dGPS Check</b>   |  |               |
| Time of check (local):<br>17:00   | DGPS Estimate of Accuracy (PDOP):<br>± 9'                |               |
| Benchmark or Reference Point ID:<br>Trailer                                 | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                                  | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65911                                     | Measured Longitude/Easting:<br>70.92191                  |               |
| Instrument Measured Displacement (meters): 2m                               |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES    NO |  |               |
| Field Activities / Comments / Observations:                                 |  |               |
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Field Team Leader Signature \_\_\_\_\_



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| Project No. 100053747  | Date: 9/26/14  | Recorder: M. Walsh |
| DGPS (make/model/SN):<br>Garmin GPSmap 76Cx  | Coordinate System and units:                             |                    |
| <b>Morning dGPS Check</b>  |  |                    |
| Time of check (local):<br>0628   | DGPS Estimate of Accuracy (PDOP):<br>± 9ft               |                    |
| Benchmark or Reference Point ID:<br>Trailer  | Benchmark or Reference Point Established By:<br>M. Walsh |                    |
| Established Latitude/Northing:<br>41.65909   | Established Longitude/Easting:<br>70.92191               |                    |
| Measured Latitude/Northing:<br>41.65908  | Measured Longitude/Easting:<br>70.92190                  |                    |
| Instrument Measured Displacement (meters): 2m                                      |  |                    |
| Displacement Acceptable? ( $\leq 3$ m): <input checked="" type="radio"/> YES    NO |  |                    |
| <b>Afternoon dGPS Check</b>  |  |                    |
| Time of check (local):<br>1610   | DGPS Estimate of Accuracy (PDOP):<br>± 9'                |                    |
| Benchmark or Reference Point ID:<br>Trailer  | Benchmark or Reference Point Established By:<br>M Walsh  |                    |
| Established Latitude/Northing:<br>41.65909   | Established Longitude/Easting:<br>70.92191               |                    |
| Measured Latitude/Northing:<br>41.65908  | Measured Longitude/Easting:<br>70.92190                  |                    |
| Instrument Measured Displacement (meters): 2m                                      |  |                    |
| Displacement Acceptable? ( $\leq 3$ m): <input checked="" type="radio"/> YES    NO |  |                    |
| Field Activities / Comments / Observations:  |  |                    |
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Field Team Leader Signature \_\_\_\_\_

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| Project No. 100053747  | Date: 29-Sep-14  | Recorder: PDS |
| DGPS (make/model/SN):<br>Garmin GPSMap76CX                               | Coordinate System and units:                             |               |
| <b>Morning dGPS Check</b>  |  |               |
| Time of check (local): PDS 29-Sep-14<br>Trailer 0650                     | DGPS Estimate of Accuracy (PDOP):<br>±9'                 |               |
| Benchmark or Reference Point ID:<br>Trailer                              | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                               | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65909                                  | Measured Longitude/Easting:<br>70.92189                  |               |
| Instrument Measured Displacement (meters): 3                             |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |  |               |
| <b>Afternoon dGPS Check</b>  |  |               |
| Time of check (local):<br>1639   | DGPS Estimate of Accuracy (PDOP):<br>±9'                 |               |
| Benchmark or Reference Point ID:<br>Trailer                              | Benchmark or Reference Point Established By:<br>M. Walsh |               |
| Established Latitude/Northing:<br>41.65909                               | Established Longitude/Easting:<br>70.92191               |               |
| Measured Latitude/Northing:<br>41.65910                                  | Measured Longitude/Easting:<br>70.92192                  |               |
| Instrument Measured Displacement (meters): 0                             |  |               |
| Displacement Acceptable? (≤3 m): <input checked="" type="radio"/> YES NO |  |               |
| Field Activities / Comments / Observations:                              |  |               |
|  |  |               |
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Field Team Leader Signature \_\_\_\_\_

**Attachment D**  
**Daily Tailgate Safety Meeting**  
**Record Forms**

**TAILGATE SAFETY MEETING RECORD FORM**

Date 9/22/14 Time (local) 0800 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

**SAFETY TOPICS DISCUSSED**

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

**Attendees**

Name (printed) Signature

Matt Atypatrich Matt Atypatrich

Ken Thomson [Signature]

JARRETT DRAKE [Signature]

Patrick O'Keefe [Signature]

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Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 9/22/14



### TAILGATE SAFETY MEETING RECORD FORM

Date 9/23/14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

#### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D



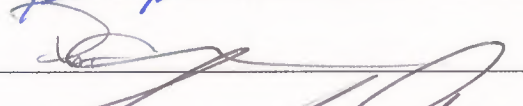
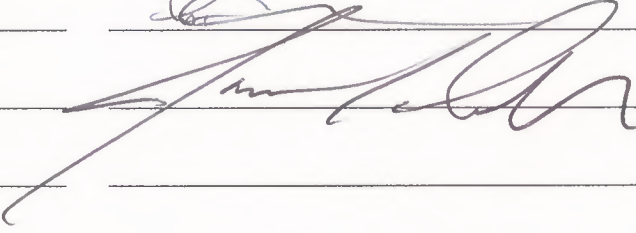
Hazards of Chemicals Present: Sediments: PCBs, Metals

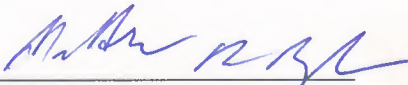
Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

#### Attendees

| Name (printed)        | Signature  |
|-----------------------|--|
| <u>Matt Klyachik</u>  |  |
| <u>Ken Thomson</u>    |  |
| <u>PATRICK CURRAN</u> |  |
| <u>JARRETT DRAKE</u>  |  |
| _____                 | _____  |
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Field Team Leader Review and Approval 

Reviewed/Approved Date 9/23/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 9/24/14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

### Attendees

Name (printed)

Signature

Matt Atypatnick [Signature]

Patrick Curran [Signature]

Ken Thomson [Signature]

JARRETT DRAKE [Signature]

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Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 9/24/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 09/25/2014 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D





Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

### Attendees

| Name (printed)          | Signature  |
|-------------------------|--|
| <u>PATRICK CURRAN</u>   |  |
| <u>Ben Maher</u>        |  |
| <u>JARREN DRAKE</u>     |  |
| <u>Matt Kstepatnick</u> |  |
| _____                   | _____  |
| _____                   | _____  |
| _____                   | _____  |
| _____                   | _____  |

Field Team Leader Review and Approval 

Reviewed/Approved Date 9/25/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 09/26/2014 Time (local) 0645 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

### Attendees

Name (printed) Signature

PATRICK CURRAN [Signature]

JARRETT DRAKE [Signature]

Math Stepatnick [Signature]

Ben Maher [Signature]

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Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 9/26/14



## TAILGATE SAFETY MEETING RECORD FORM

Date 9/29/14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: formalin

Other topics: \_\_\_\_\_

### Attendees

| Name (printed)        | Signature          |
|-----------------------|--------------------|
| <u>Matt Hepatich</u>  | <u>[Signature]</u> |
| <u>Adrianna O'NE</u>  | <u>[Signature]</u> |
| <u>JARRETT DRAKE</u>  | <u>[Signature]</u> |
| <u>PATRICK CURRAN</u> | <u>[Signature]</u> |
| _____                 | _____              |
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| _____                 | _____              |
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Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 9/29/14

### TAILGATE SAFETY MEETING RECORD FORM

Date 9/30/14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

#### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: Formalin

Other topics: \_\_\_\_\_

#### Attendees

| Name (printed)          | Signature          |
|-------------------------|--------------------|
| <u>Matt Fitzpatrick</u> | <u>[Signature]</u> |
| <u>Patrick Curran</u>   | <u>[Signature]</u> |
| <u>JARRETT DRAKE</u>    | <u>[Signature]</u> |
| <u>Adrianna Ortiz</u>   | <u>[Signature]</u> |
| _____                   | _____              |
| _____                   | _____              |
| _____                   | _____              |
| _____                   | _____              |

Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 9/30/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 09-22-14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: \_\_\_\_\_

Other topics: \_\_\_\_\_

### Attendees

Name (printed) Signature

Paul Sokoloff Paul Sokoloff

Sam Guimaraes [Signature]

Mike Walsh Mike Walsh

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Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 10/2/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 23-sep-14 Time (local) 0700 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: \_\_\_\_\_

Other topics: \_\_\_\_\_

### Attendees

Name (printed)

Signature

Paul Sokoloff

Paul Sokoloff

Alex Mansfield

Alex Mansfield

Sam Guimaraes

Sam Guimaraes

Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 10/2/14



### TAILGATE SAFETY MEETING RECORD FORM

Date 25-Sep-14 ~~24-Sep-14~~ PPS 25-Sep-14 Time (local) 0730 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

#### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: \_\_\_\_\_

Other topics: \_\_\_\_\_

#### Attendees

| Name (printed)        | Signature             |
|-----------------------|-----------------------|
| <u>Paul Sokoloff</u>  | <u>Paul Sokoloff</u>  |
| <u>Alex Mansfield</u> | <u>Alex Mansfield</u> |
| <u>Sam Girmasias</u>  | <u>Sam Girmasias</u>  |
| _____                 | _____                 |
| _____                 | _____                 |
| _____                 | _____                 |
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| _____                 | _____                 |
| _____                 | _____                 |

Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 10/2/14

## TAILGATE SAFETY MEETING RECORD FORM

Date 26-Sep-14 Time (local) 0700 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

### SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical

Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: \_\_\_\_\_

Other topics: \_\_\_\_\_

### Attendees

Name (printed)

Signature

Paul Sokoloff

Paul Sokoloff

Mike Walsh

Mike Walsh

Sam Guimaraes

Sam Guimaraes

Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 10/2/14

Date 29-September-14 Time (local) 0700 Project Number: 100053747

Project Name: New Bedford Harbor Long Term Monitoring

Specific Location: New Bedford Harbor

Type of Work: Grab Sampling, Seiving

Chemicals present: Primary contaminants of interest: PCBs, Metals

**SAFETY TOPICS DISCUSSED**

Protective Clothing/Equipment: Level D

Hazards of Chemicals Present: Sediments: PCBs, Metals

Physical

Hazards: Slips, trips, falls, drowning, lifting heavy objects, weather, pinch points in the Grab

Special hazards: \_\_\_\_\_

Other topics: \_\_\_\_\_

**Attendees**

Name (printed)

Signature

Paul Sokoloff

Paul Sokoloff

Sam Guimaraes

[Signature]

Betsy Curie

[Signature]

Alex Mansfield

[Signature]

Field Team Leader Review and Approval [Signature]

Reviewed/Approved Date 10 / 2 / 14

**Appendix B**  
Surface Sediment Grab Photographs



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Representative photos of the grab samples taken during the New Bedford Harbor LTM VI survey.





Representative photos of the grab samples taken during the New Bedford Harbor LTM VI survey.





Representative photos of the grab samples taken during the New Bedford Harbor LTM VI survey.





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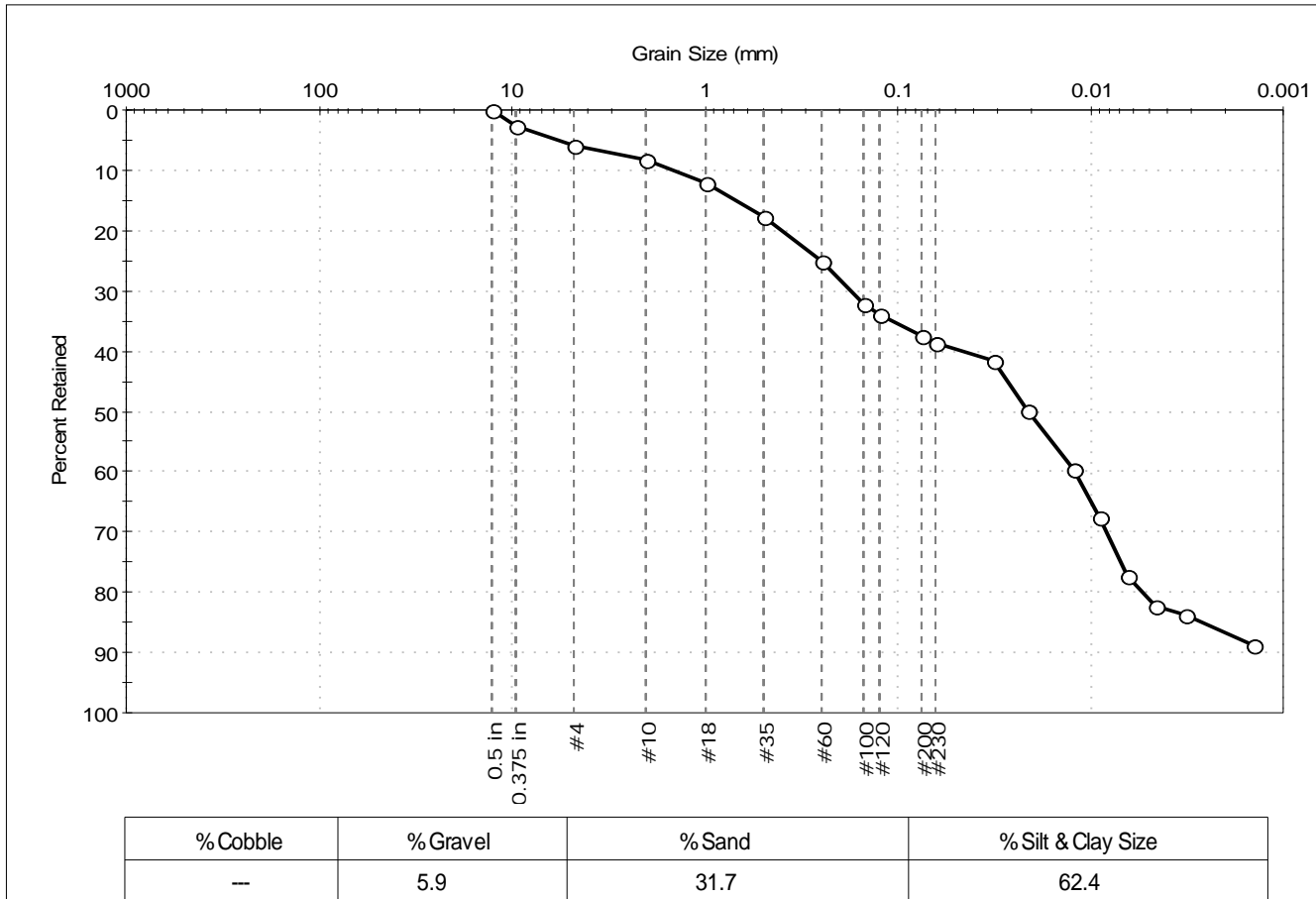
**Appendix C**  
Grain Size Laboratory Data Report

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|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 120-14LTM                                | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0001                               | Test Date: 10/14/14         | Depth: ---                | Test Id: 309447        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 3            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 32           |               |          |
| #120       | 0.12               | 34           |               |          |
| #200       | 0.075              | 38           |               |          |
| #230       | 0.063              | 39           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 42           |               |          |
| ---        | 0.0213             | 50           |               |          |
| ---        | 0.0123             | 59           |               |          |
| ---        | 0.0090             | 68           |               |          |
| ---        | 0.0064             | 77           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6965 mm | D <sub>30</sub> = 0.0083 mm |
| D <sub>60</sub> = 0.0457 mm | D <sub>15</sub> = 0.0026 mm |
| D <sub>50</sub> = 0.0209 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

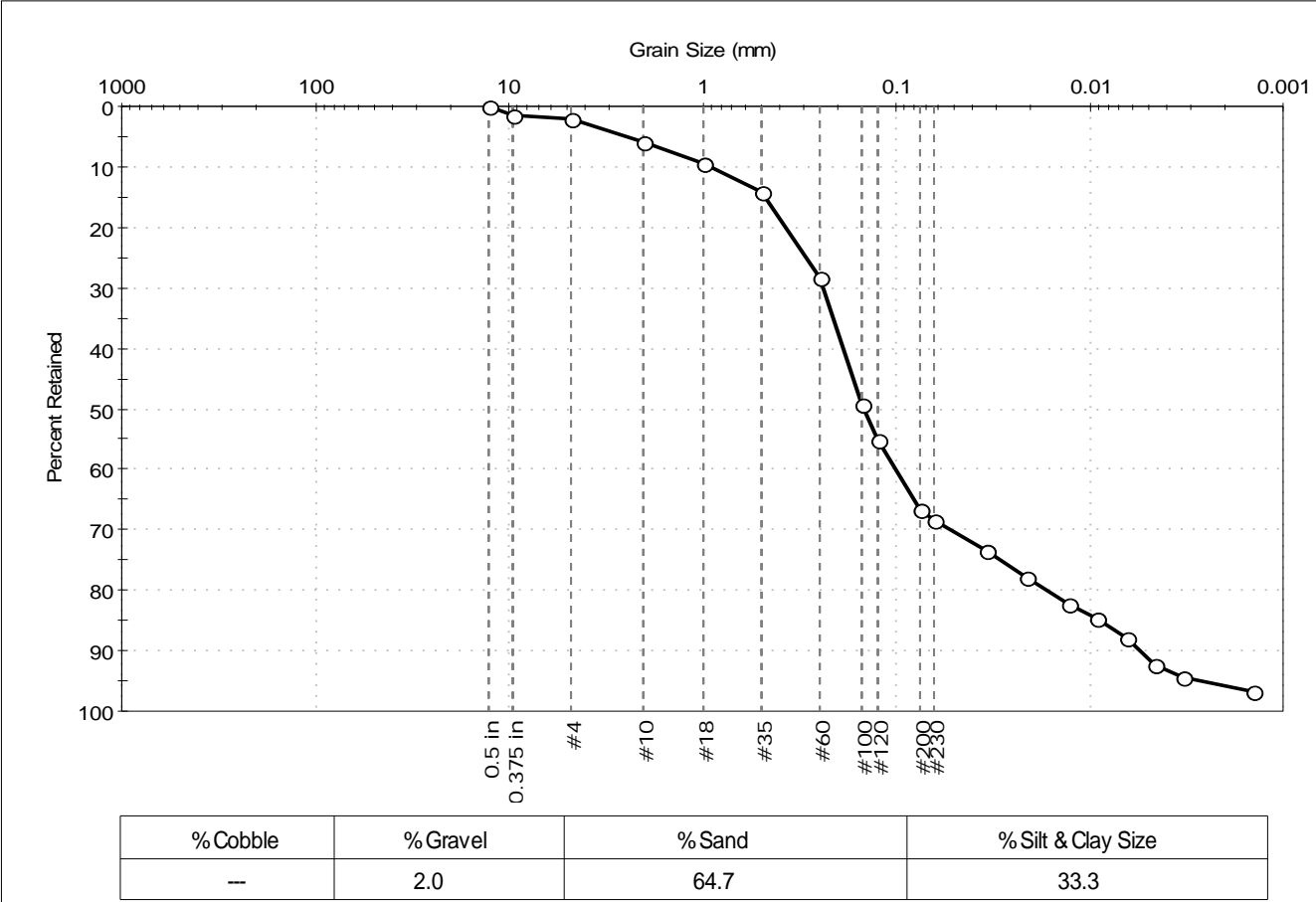
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                   | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 120-14LTM                | Sample Type: bag                              | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0002               | Test Date: 10/23/14                           | Depth: ---                | Test Id: 309448        |
| Test Comment: ---                   | Sample Description: Wet, dark gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 28           |               |          |
| #100       | 0.15               | 49           |               |          |
| #120       | 0.12               | 55           |               |          |
| #200       | 0.075              | 67           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 74           |               |          |
| ---        | 0.0214             | 78           |               |          |
| ---        | 0.0130             | 82           |               |          |
| ---        | 0.0092             | 85           |               |          |
| ---        | 0.0064             | 88           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4816 mm | D <sub>30</sub> = 0.0517 mm |
| D <sub>60</sub> = 0.1876 mm | D <sub>15</sub> = 0.0088 mm |
| D <sub>50</sub> = 0.1463 mm | D <sub>10</sub> = 0.0055 mm |
| C <sub>u</sub> = 34.109     | C <sub>c</sub> = 2.591      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

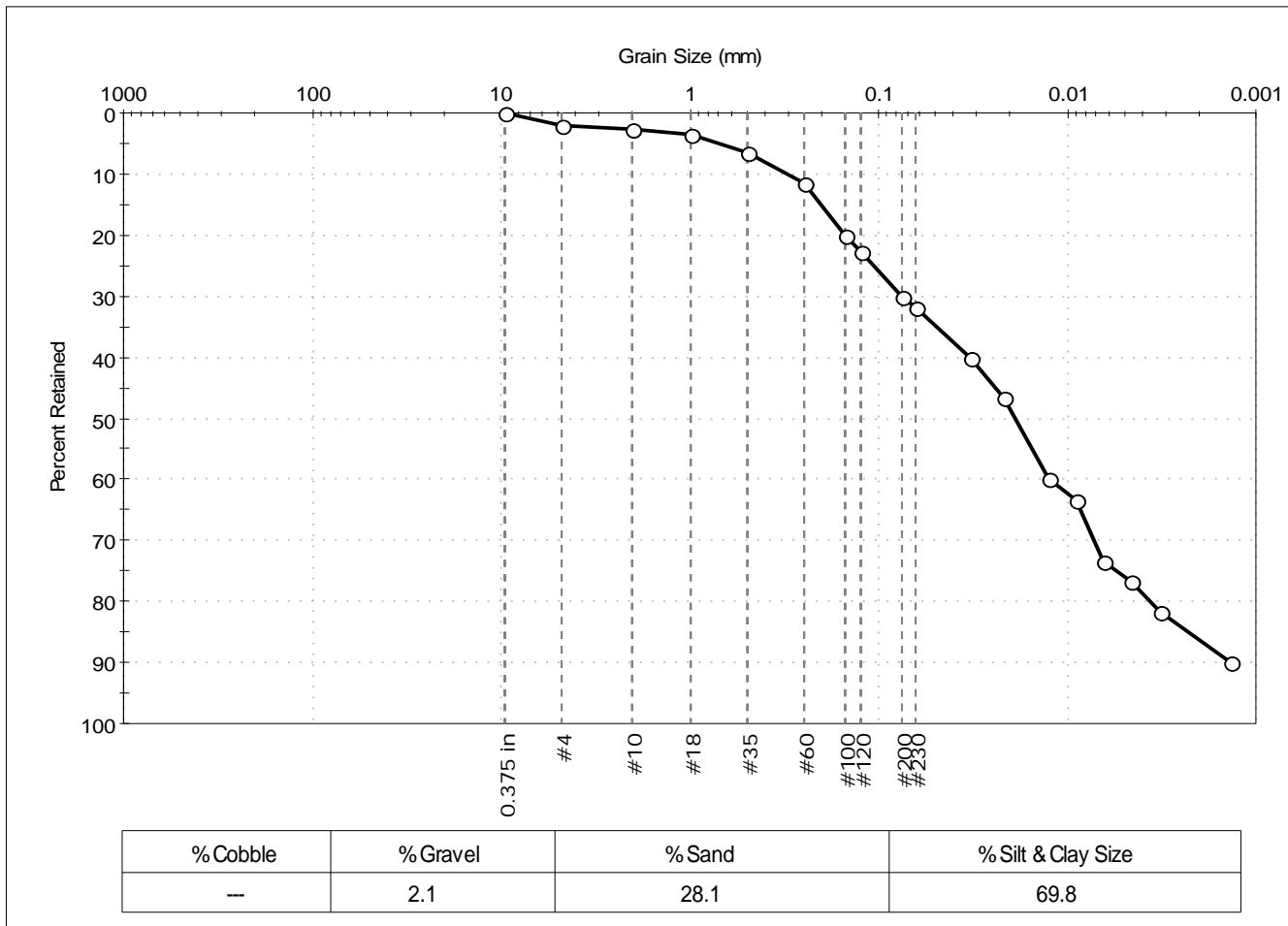
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 120-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0003                  | Test Date:   | 10/16/14   |
| Depth:              | ---                         | Test Id:     | 309449     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark gray sandy silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 23           |               |          |
| #200       | 0.075              | 30           |               |          |
| #230       | 0.063              | 32           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 40           |               |          |
| ---        | 0.0215             | 47           |               |          |
| ---        | 0.0125             | 60           |               |          |
| ---        | 0.0089             | 63           |               |          |
| ---        | 0.0064             | 73           |               |          |
| ---        | 0.0046             | 77           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2032 mm | D <sub>30</sub> = 0.0072 mm |
| D <sub>60</sub> = 0.0324 mm | D <sub>15</sub> = 0.0023 mm |
| D <sub>50</sub> = 0.0188 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

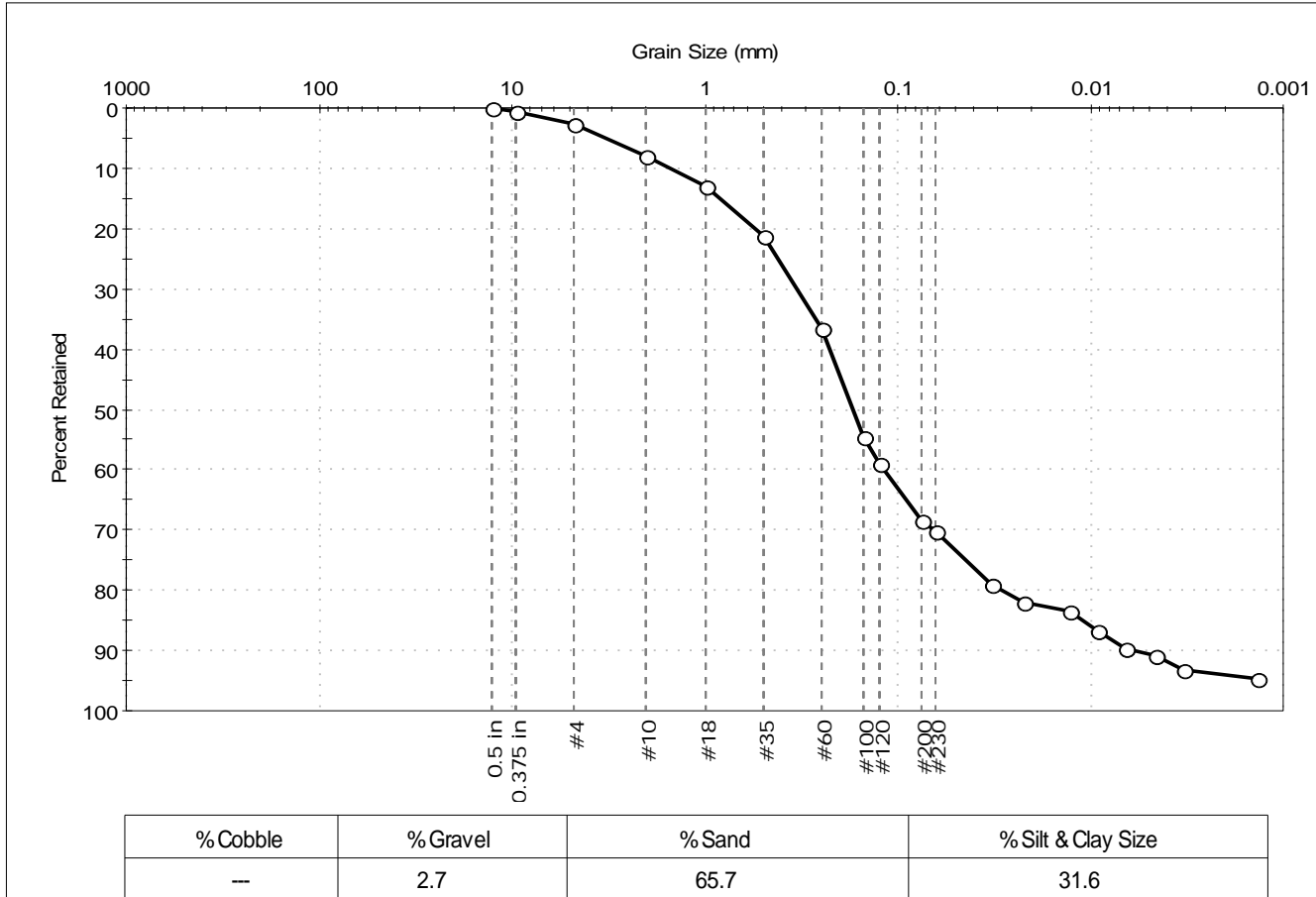
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                    | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 120-14LTM                                   | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0004                                  | Test Date: 10/20/14         | Depth: ---                | Test Id: 309450        |
| Test Comment: ---                                      |                             |                           |                        |
| Sample Description: Wet, dark greenish gray silty sand |                             |                           |                        |
| Sample Comment: ---                                    |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 37           |               |          |
| #100       | 0.15               | 55           |               |          |
| #120       | 0.12               | 59           |               |          |
| #200       | 0.075              | 68           |               |          |
| #230       | 0.063              | 70           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 79           |               |          |
| ---        | 0.0221             | 82           |               |          |
| ---        | 0.0127             | 84           |               |          |
| ---        | 0.0092             | 87           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0047             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8526 mm | D <sub>30</sub> = 0.0645 mm |
| D <sub>60</sub> = 0.2267 mm | D <sub>15</sub> = 0.0110 mm |
| D <sub>50</sub> = 0.1711 mm | D <sub>10</sub> = 0.0060 mm |
| C <sub>u</sub> = 37.783     | C <sub>c</sub> = 3.059      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

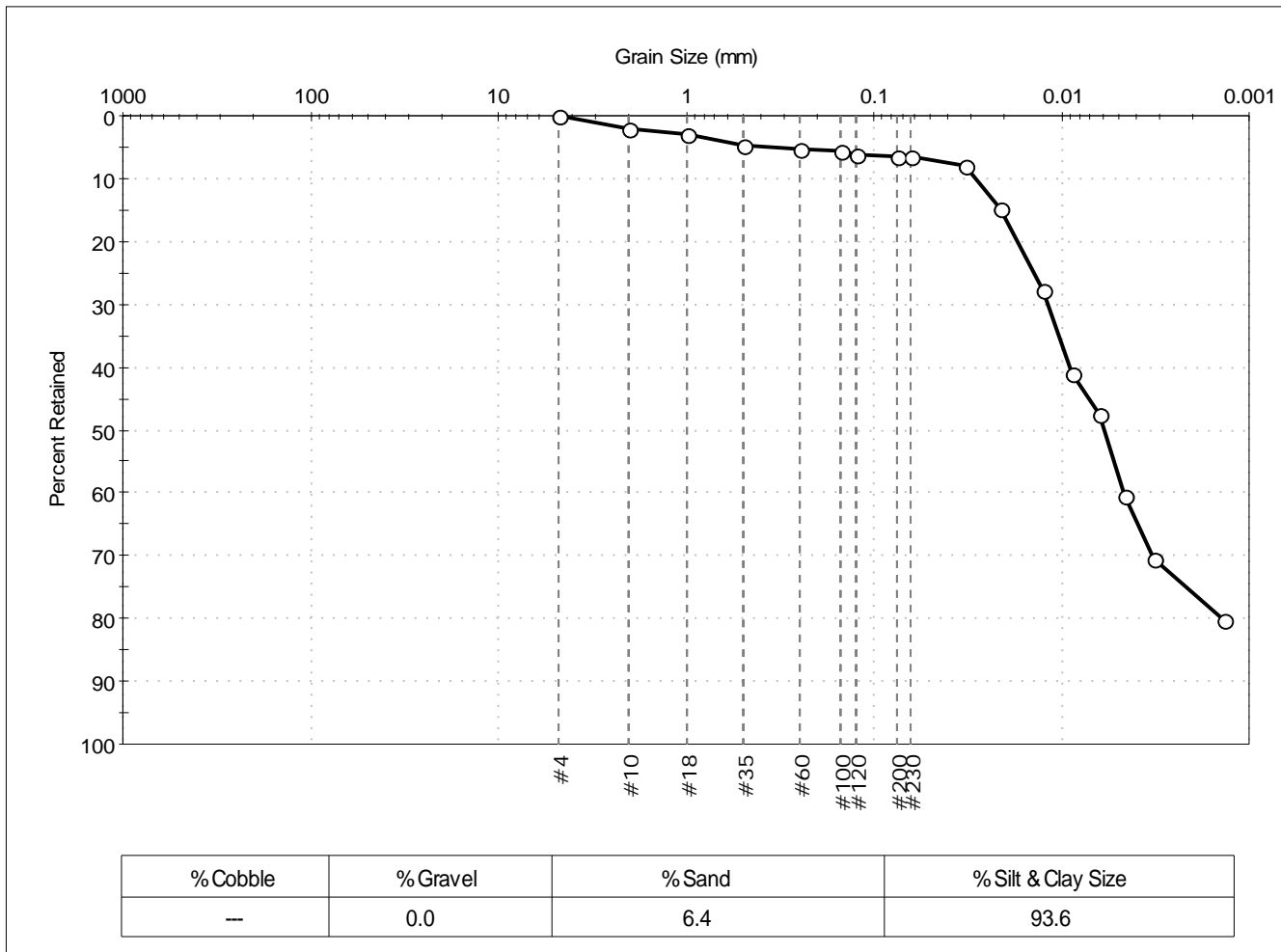
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA               | Project No: GTX-302366 |
| Boring ID: 125-14LTM                | Sample Type: bag            | Tested By: jbr                          | Checked By: jdt        |
| Sample ID: NBH14-0005               | Test Date: 10/16/14         | Test Id: 309451                         |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 6            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 7            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0324             | 8            |               |          |
| ---        | 0.0210             | 15           |               |          |
| ---        | 0.0126             | 28           |               |          |
| ---        | 0.0089             | 41           |               |          |
| ---        | 0.0063             | 47           |               |          |
| ---        | 0.0046             | 61           |               |          |
| ---        | 0.0033             | 70           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0207 mm | D <sub>30</sub> = 0.0033 mm |
| D <sub>60</sub> = 0.0091 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0059 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

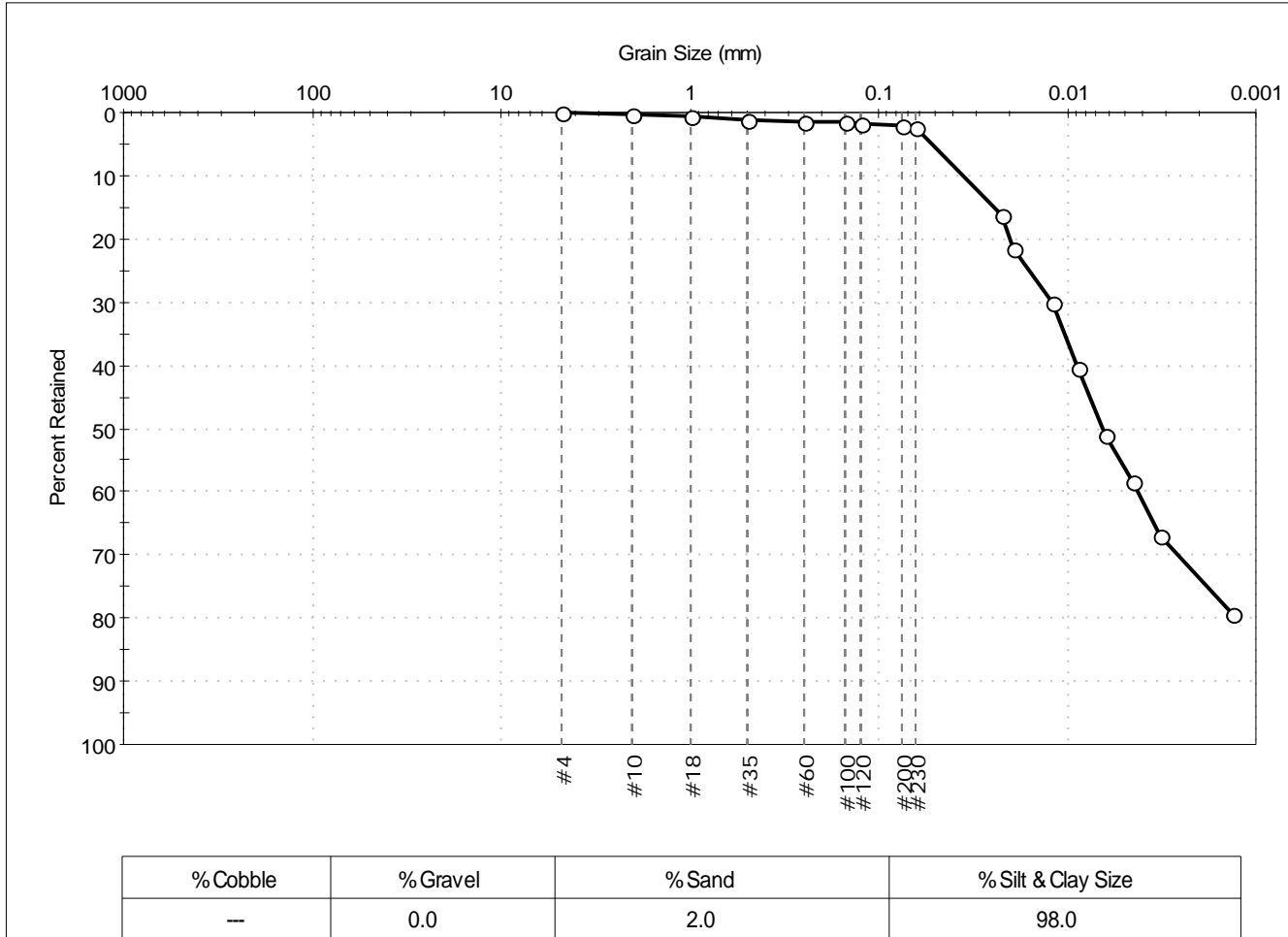
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA               | Project No: GTX-302366 |
| Boring ID: 125-14LTM                | Sample Type: bag            | Tested By: jbr                          | Checked By: jdt        |
| Sample ID: NBH14-0006               | Test Date: 10/14/14         | Test Id: 309452                         |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0223             | 16           |               |          |
| ---        | 0.0192             | 21           |               |          |
| ---        | 0.0120             | 30           |               |          |
| ---        | 0.0087             | 41           |               |          |
| ---        | 0.0063             | 51           |               |          |
| ---        | 0.0045             | 58           |               |          |
| ---        | 0.0032             | 67           |               |          |
| ---        | 0.0013             | 79           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0246 mm | D <sub>30</sub> = 0.0026 mm |
| D <sub>60</sub> = 0.0088 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0065 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

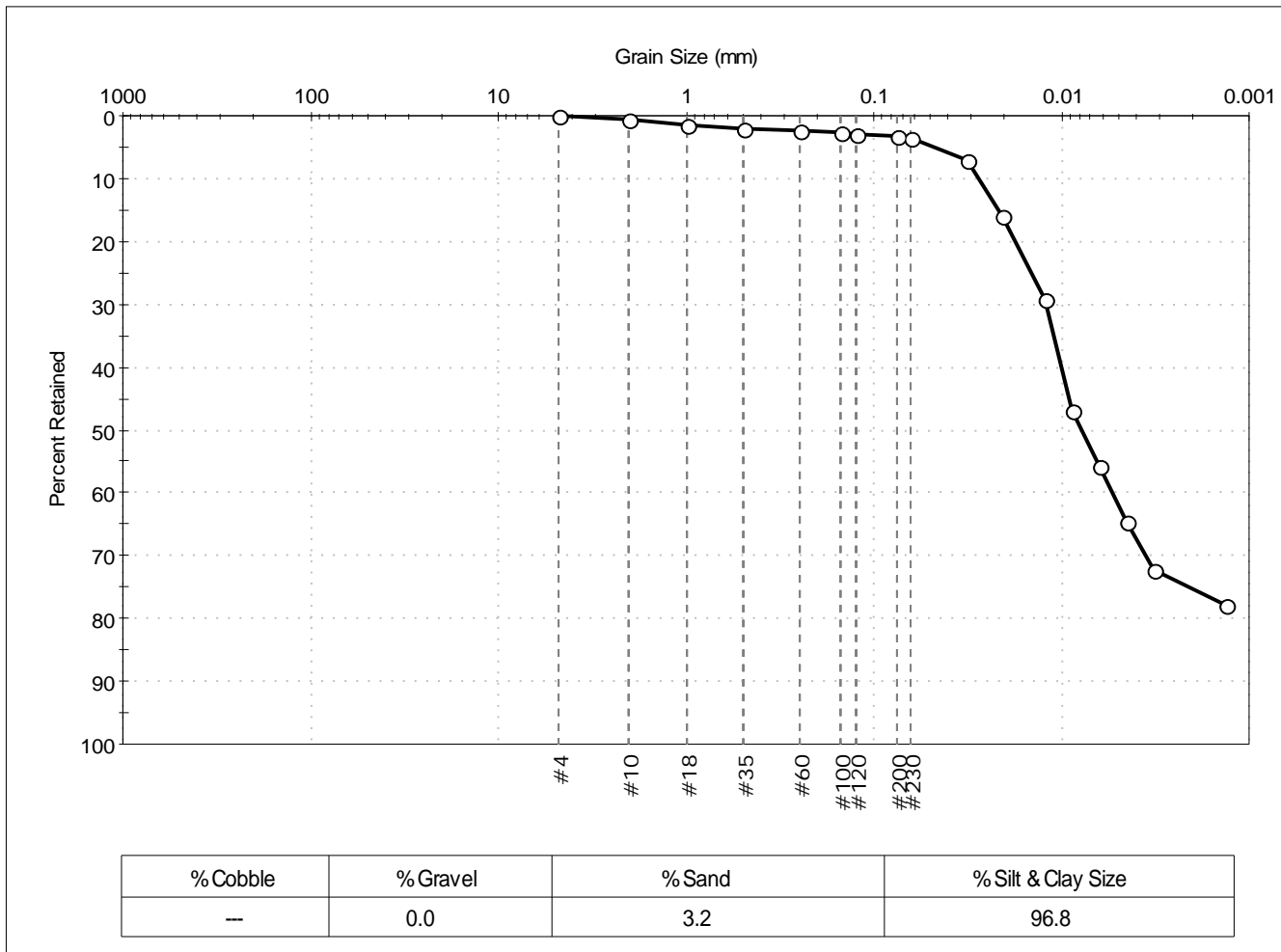
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                   | Project No: GTX-302366 |
| Boring ID: 125-14LTM                | Sample Type: bag            | Tested By: jbr                              | Checked By: jdt        |
| Sample ID: NBH14-0007               | Test Date: 10/16/14         | Test Id: 309453                             |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, greenish gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 7            |               |          |
| ---        | 0.0209             | 16           |               |          |
| ---        | 0.0121             | 29           |               |          |
| ---        | 0.0087             | 47           |               |          |
| ---        | 0.0063             | 56           |               |          |
| ---        | 0.0045             | 65           |               |          |
| ---        | 0.0032             | 72           |               |          |
| ---        | 0.0013             | 78           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0217 mm | D <sub>30</sub> = 0.0036 mm |
| D <sub>60</sub> = 0.0099 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0077 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

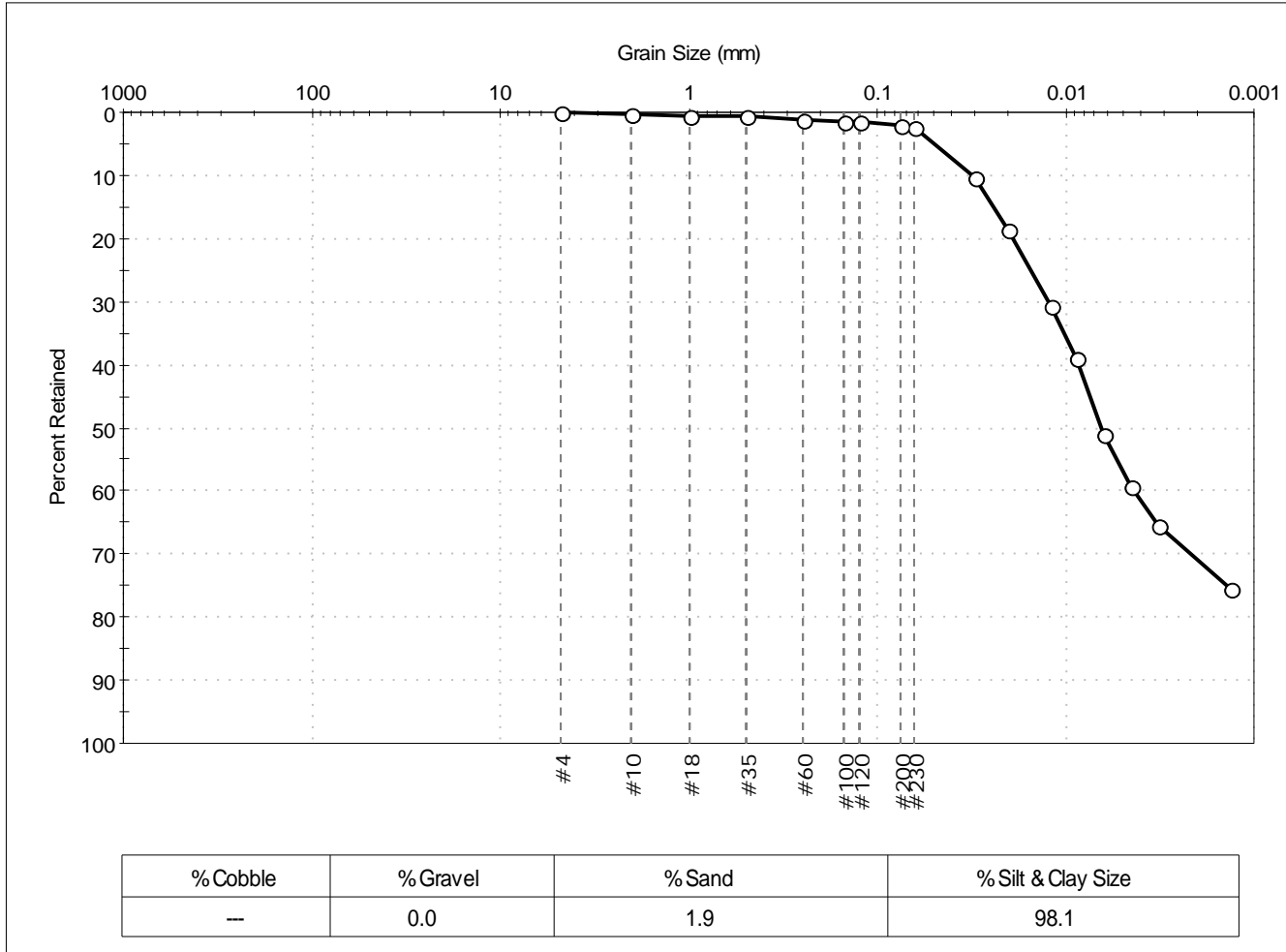
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 125-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0008               | Test Date: 10/16/14         | Test Id: 309454                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive green silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0302             | 10           |               |          |
| ---        | 0.0202             | 18           |               |          |
| ---        | 0.0120             | 31           |               |          |
| ---        | 0.0087             | 39           |               |          |
| ---        | 0.0063             | 51           |               |          |
| ---        | 0.0045             | 59           |               |          |
| ---        | 0.0032             | 65           |               |          |
| ---        | 0.0013             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0240 mm | D <sub>30</sub> = 0.0021 mm |
| D <sub>60</sub> = 0.0084 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0065 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

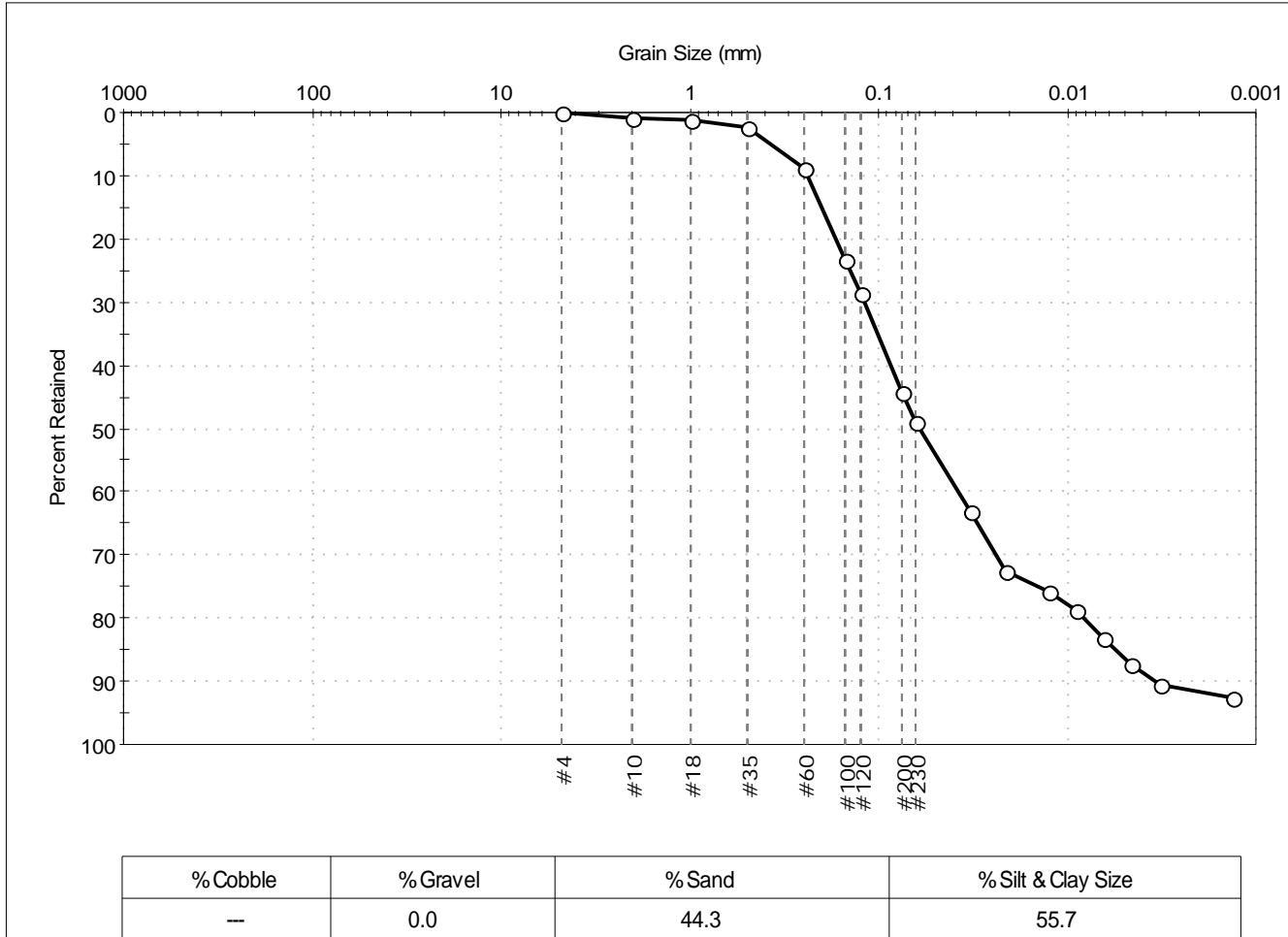
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 130-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0009               | Test Date: 10/23/14         | Test Id: 309455                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 9            |               |          |
| #100       | 0.15               | 23           |               |          |
| #120       | 0.12               | 29           |               |          |
| #200       | 0.075              | 44           |               |          |
| #230       | 0.063              | 49           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 63           |               |          |
| ---        | 0.0213             | 73           |               |          |
| ---        | 0.0125             | 76           |               |          |
| ---        | 0.0090             | 79           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0032             | 90           |               |          |
| ---        | 0.0013             | 93           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2013 mm | D <sub>30</sub> = 0.0239 mm |
| D <sub>60</sub> = 0.0863 mm | D <sub>15</sub> = 0.0055 mm |
| D <sub>50</sub> = 0.0603 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 25.382     | C <sub>c</sub> = 1.947      |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

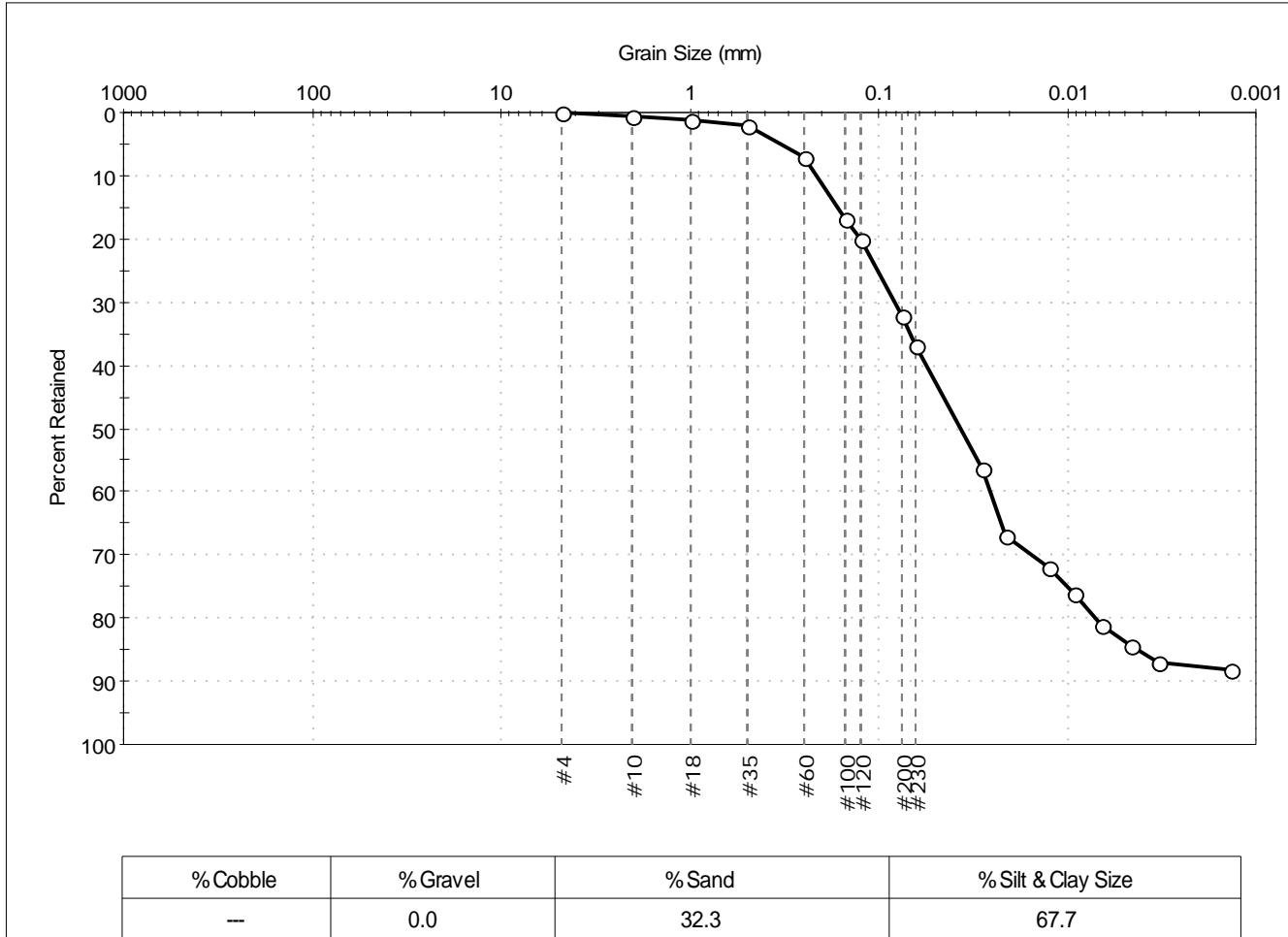
| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 130-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0010               | Test Date: 10/21/14         | Test Id: 309456                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 20           |               |          |
| #200       | 0.075              | 32           |               |          |
| #230       | 0.063              | 37           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0283             | 56           |               |          |
| ---        | 0.0210             | 67           |               |          |
| ---        | 0.0127             | 72           |               |          |
| ---        | 0.0091             | 76           |               |          |
| ---        | 0.0065             | 81           |               |          |
| ---        | 0.0047             | 84           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1649 mm | D <sub>30</sub> = 0.0155 mm |
| D <sub>60</sub> = 0.0553 mm | D <sub>15</sub> = 0.0042 mm |
| D <sub>50</sub> = 0.0367 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

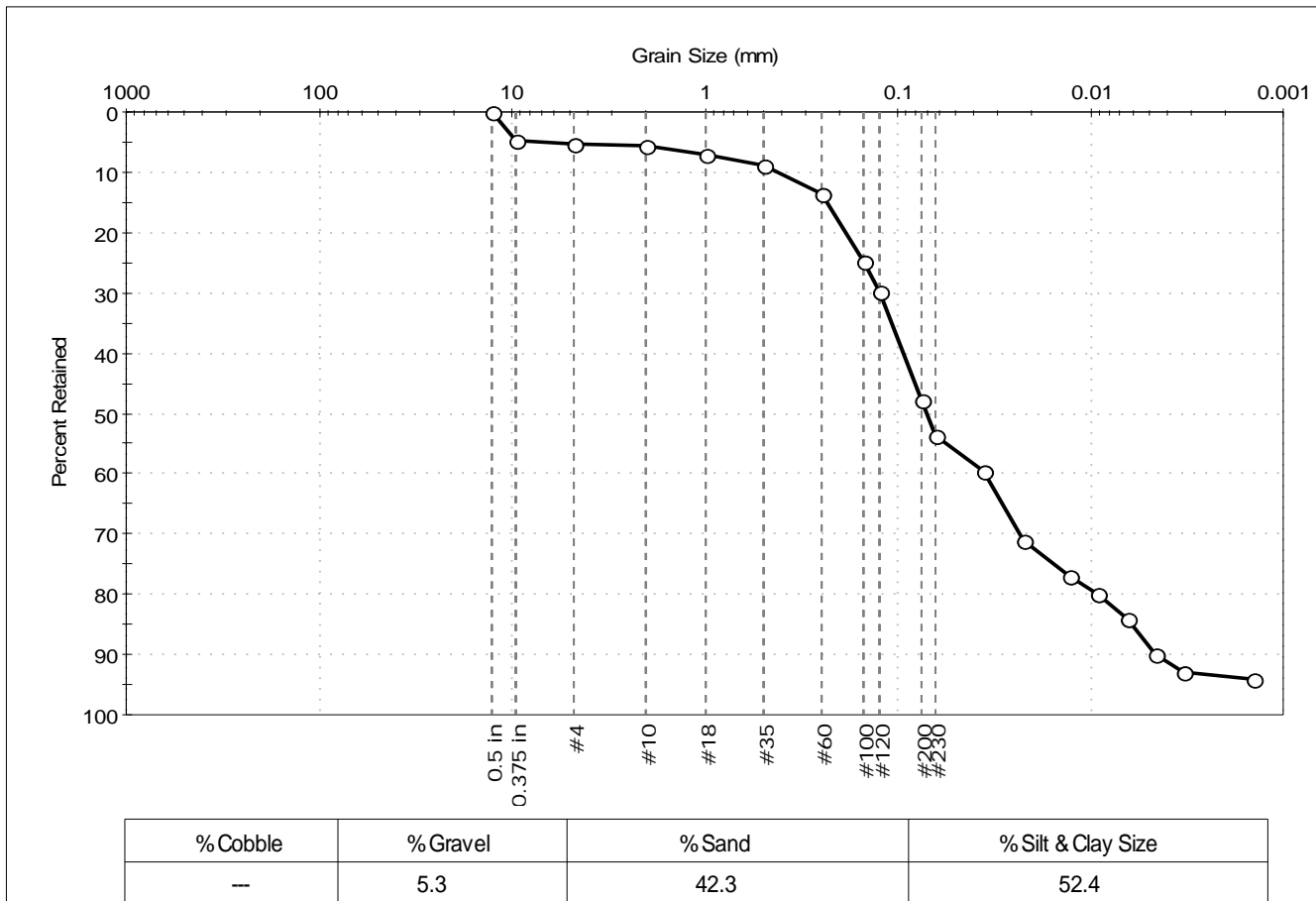
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 130-14LTM Sample Type: bag Tested By: jbr  
 Sample ID: NBH14-0010DUP Test Date: 11/19/14 Checked By: jdt  
 Depth: --- Test Id: 309457  
 Test Comment: ---  
 Sample Description: Wet, dark gray sandy silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 25           |               |          |
| #120       | 0.12               | 30           |               |          |
| #200       | 0.075              | 48           |               |          |
| #230       | 0.063              | 54           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0356             | 60           |               |          |
| ---        | 0.0223             | 71           |               |          |
| ---        | 0.0130             | 77           |               |          |
| ---        | 0.0092             | 80           |               |          |
| ---        | 0.0065             | 84           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 94           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2347 mm | D <sub>30</sub> = 0.0233 mm |
| D <sub>60</sub> = 0.0933 mm | D <sub>15</sub> = 0.0062 mm |
| D <sub>50</sub> = 0.0702 mm | D <sub>10</sub> = 0.0046 mm |
| C <sub>u</sub> = 20.283     | C <sub>c</sub> = 1.265      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

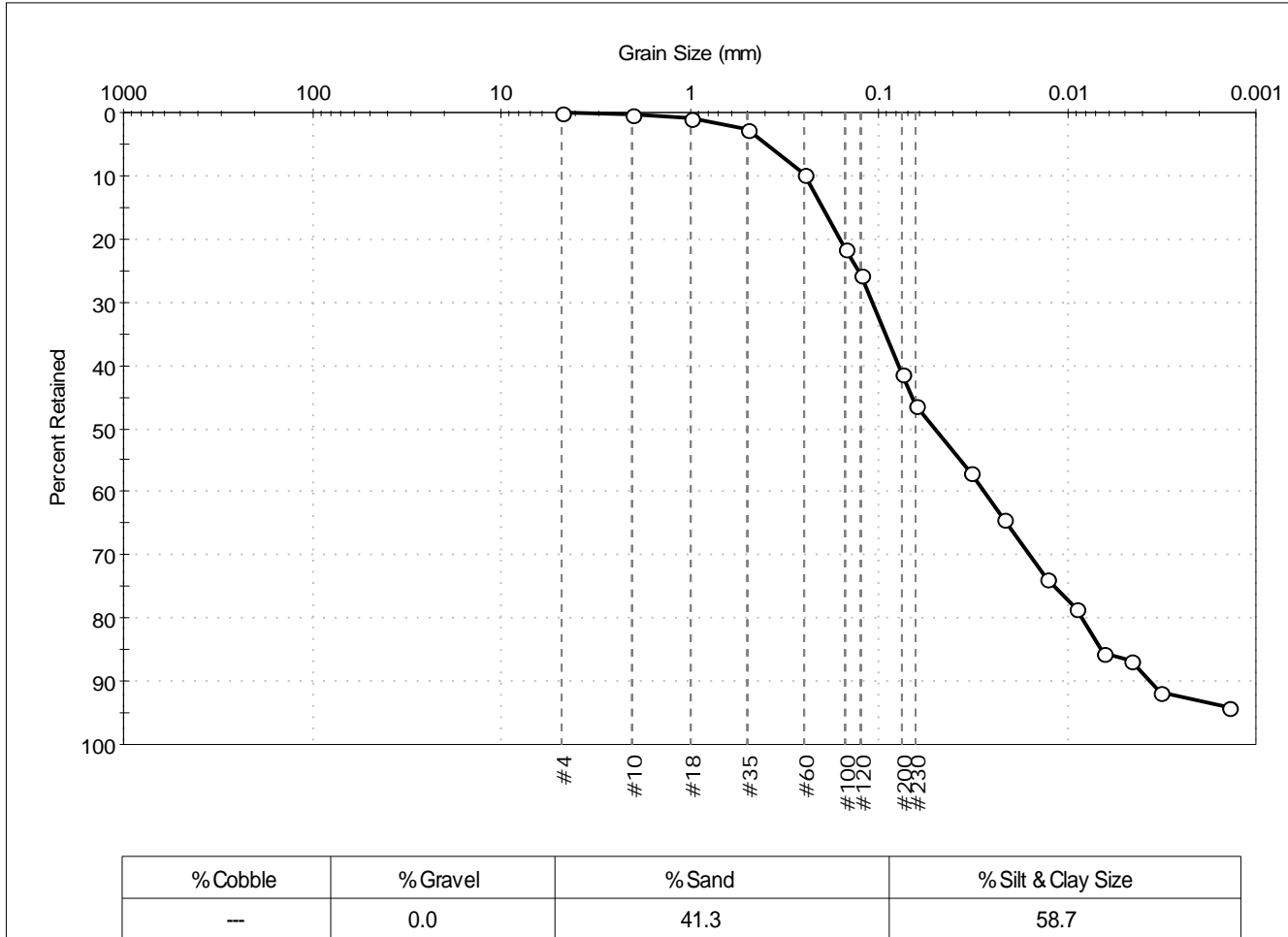
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 130-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0011               | Test Date: 10/23/14         | Test Id: 309458                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 26           |               |          |
| #200       | 0.075              | 41           |               |          |
| #230       | 0.063              | 46           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 57           |               |          |
| ---        | 0.0218             | 64           |               |          |
| ---        | 0.0127             | 74           |               |          |
| ---        | 0.0090             | 78           |               |          |
| ---        | 0.0065             | 86           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0032             | 92           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1992 mm | D <sub>30</sub> = 0.0157 mm |
| D <sub>60</sub> = 0.0782 mm | D <sub>15</sub> = 0.0067 mm |
| D <sub>50</sub> = 0.0502 mm | D <sub>10</sub> = 0.0037 mm |
| C <sub>u</sub> = 21.135     | C <sub>c</sub> = 0.852      |

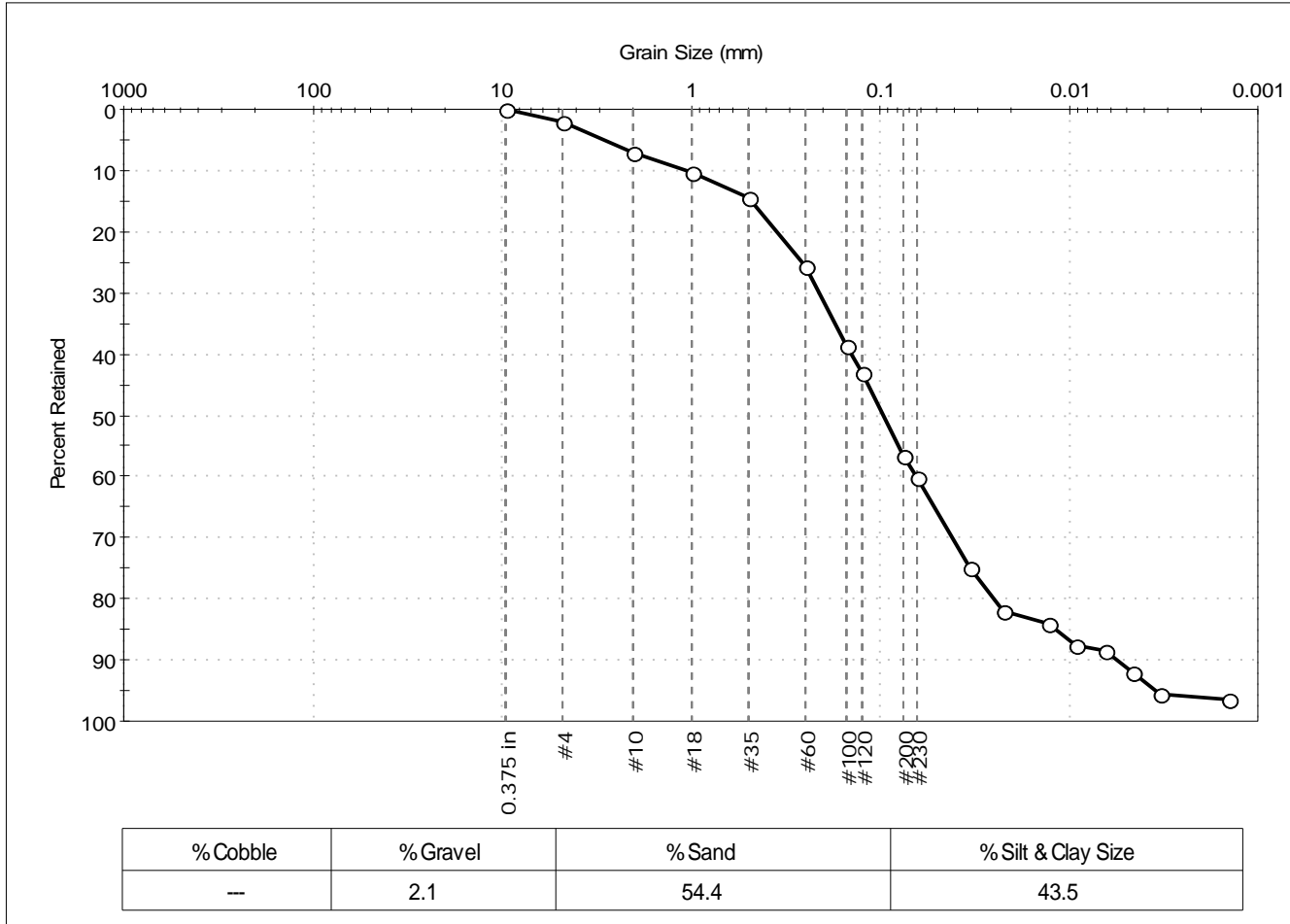
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 130-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0012               | Test Date: 10/23/14         | Test Id: 309459                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 39           |               |          |
| #120       | 0.12               | 43           |               |          |
| #200       | 0.075              | 57           |               |          |
| #230       | 0.063              | 60           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0335             | 75           |               |          |
| ---        | 0.0224             | 82           |               |          |
| ---        | 0.0129             | 84           |               |          |
| ---        | 0.0091             | 88           |               |          |
| ---        | 0.0065             | 88           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4863 mm | D <sub>30</sub> = 0.0415 mm |
| D <sub>60</sub> = 0.1424 mm | D <sub>15</sub> = 0.0116 mm |
| D <sub>50</sub> = 0.0960 mm | D <sub>10</sub> = 0.0055 mm |
| C <sub>u</sub> = 25.891     | C <sub>c</sub> = 2.199      |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

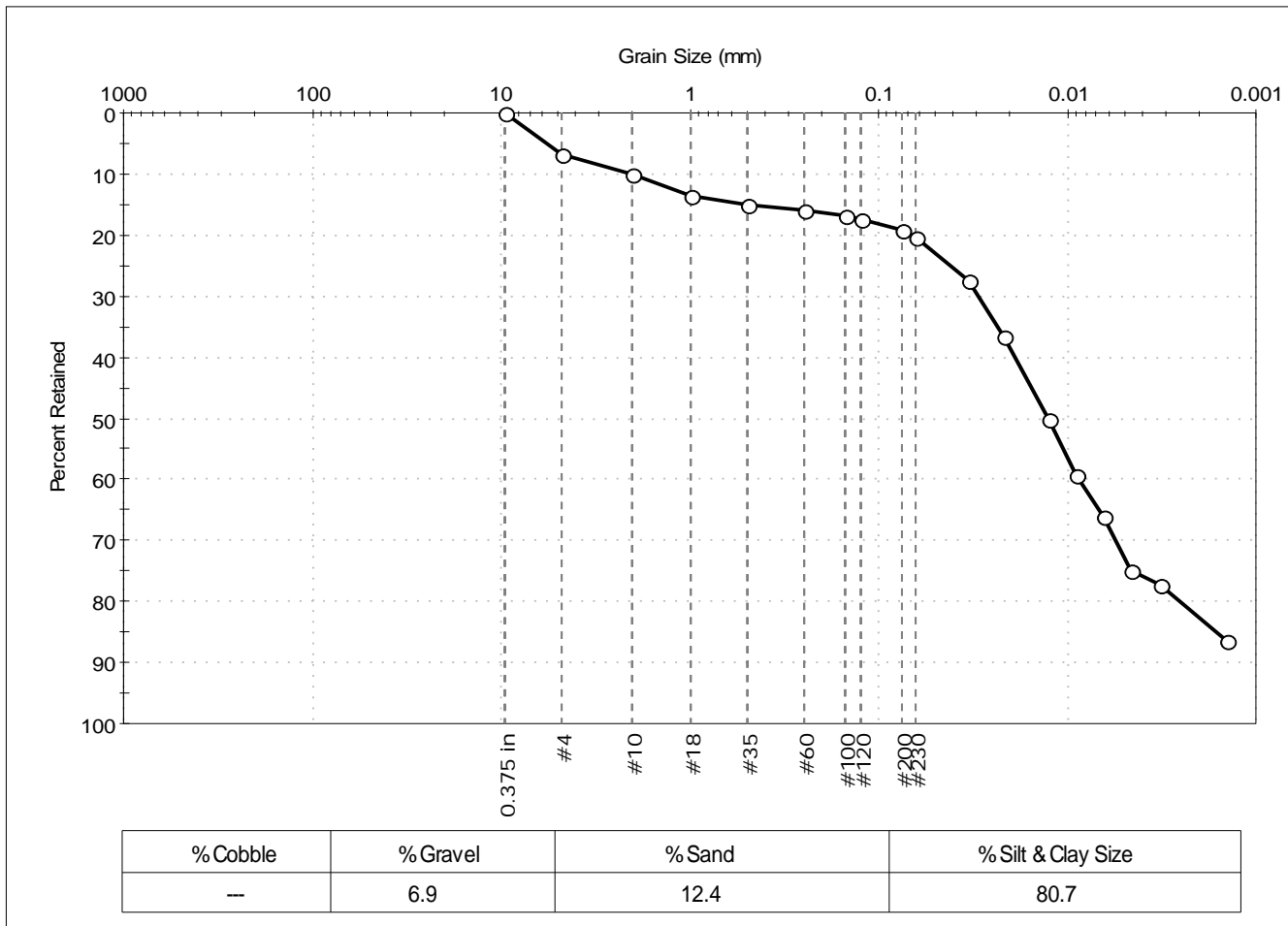
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                     |                               |              |            |
|---------------------|-------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute   |              |            |
| Project:            | New Bedford Harbor            |              |            |
| Location:           | New Bedford, MA               | Project No:  | GTX-302366 |
| Boring ID:          | 134-14LTM                     | Sample Type: | bag        |
| Sample ID:          | NBH14-0013                    | Test Date:   | 10/20/14   |
| Depth:              | ---                           | Test Id:     | 309460     |
| Test Comment:       | ---                           |              |            |
| Sample Description: | Wet, dark gray silt with sand |              |            |
| Sample Comment:     | ---                           |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 7            |               |          |
| #10        | 2.00               | 10           |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 19           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 27           |               |          |
| ---        | 0.0217             | 37           |               |          |
| ---        | 0.0126             | 50           |               |          |
| ---        | 0.0090             | 59           |               |          |
| ---        | 0.0064             | 66           |               |          |
| ---        | 0.0046             | 75           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5150 mm | D <sub>30</sub> = 0.0055 mm |
| D <sub>60</sub> = 0.0189 mm | D <sub>15</sub> = 0.0016 mm |
| D <sub>50</sub> = 0.0127 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

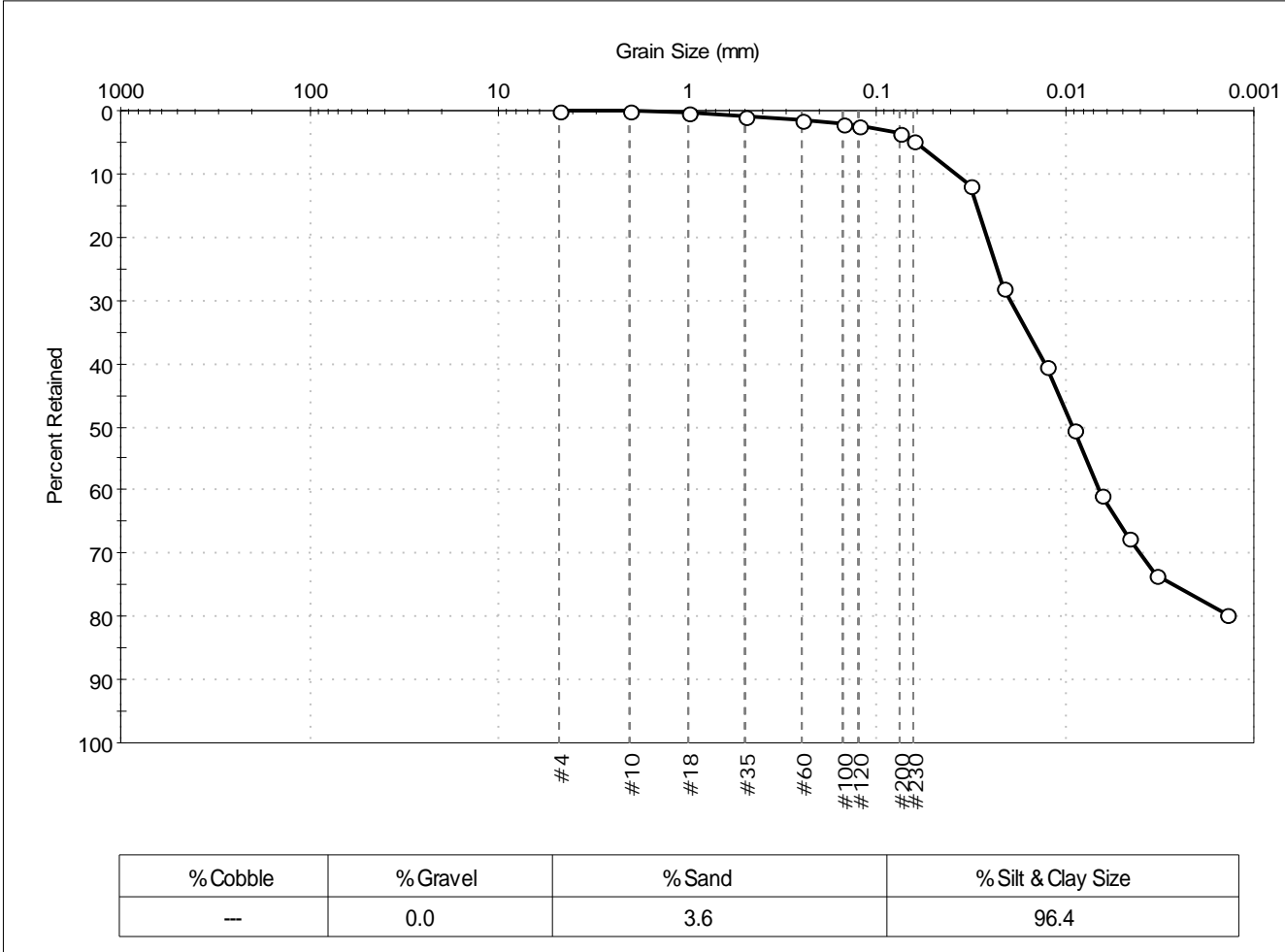
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor             | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 134-14LTM                | Sample Type: bag                        | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0014               | Test Date: 10/14/14                     | Depth: ---                | Test Id: 309461        |
| Test Comment: ---                   | Sample Description: Wet, dark gray silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 12           |               |          |
| ---        | 0.0213             | 28           |               |          |
| ---        | 0.0125             | 40           |               |          |
| ---        | 0.0090             | 50           |               |          |
| ---        | 0.0065             | 61           |               |          |
| ---        | 0.0046             | 67           |               |          |
| ---        | 0.0033             | 74           |               |          |
| ---        | 0.0014             | 80           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0292 mm | D <sub>30</sub> = 0.0040 mm |
| D <sub>60</sub> = 0.0126 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0091 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

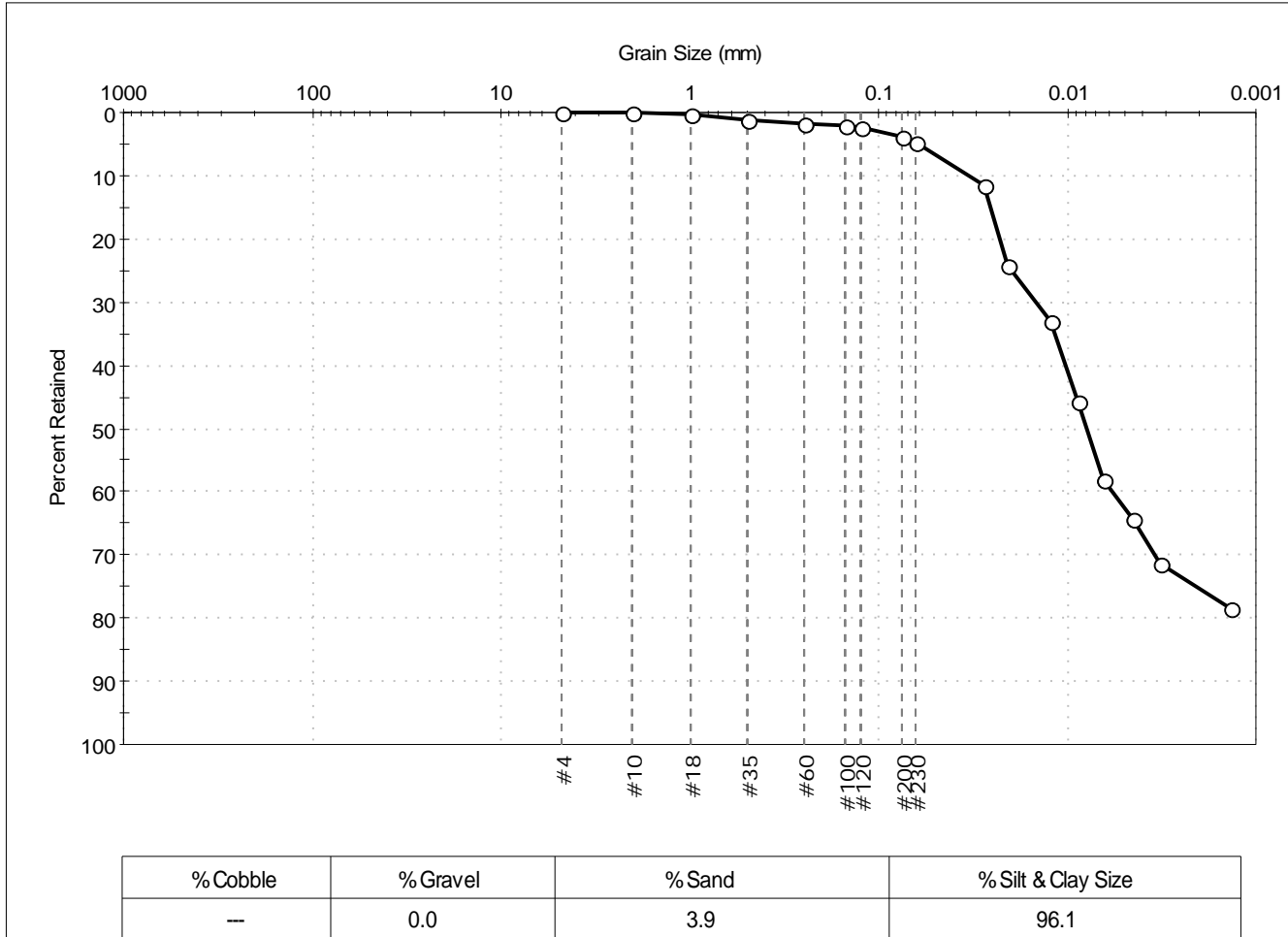
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 134-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0015                  | Test Date:   | 10/14/14   |
| Depth:              | ---                         | Test Id:     | 309462     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark gray silt         |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0278             | 12           |               |          |
| ---        | 0.0208             | 24           |               |          |
| ---        | 0.0123             | 33           |               |          |
| ---        | 0.0088             | 46           |               |          |
| ---        | 0.0064             | 58           |               |          |
| ---        | 0.0045             | 64           |               |          |
| ---        | 0.0032             | 71           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0258 mm | D <sub>30</sub> = 0.0034 mm |
| D <sub>60</sub> = 0.0102 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0079 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

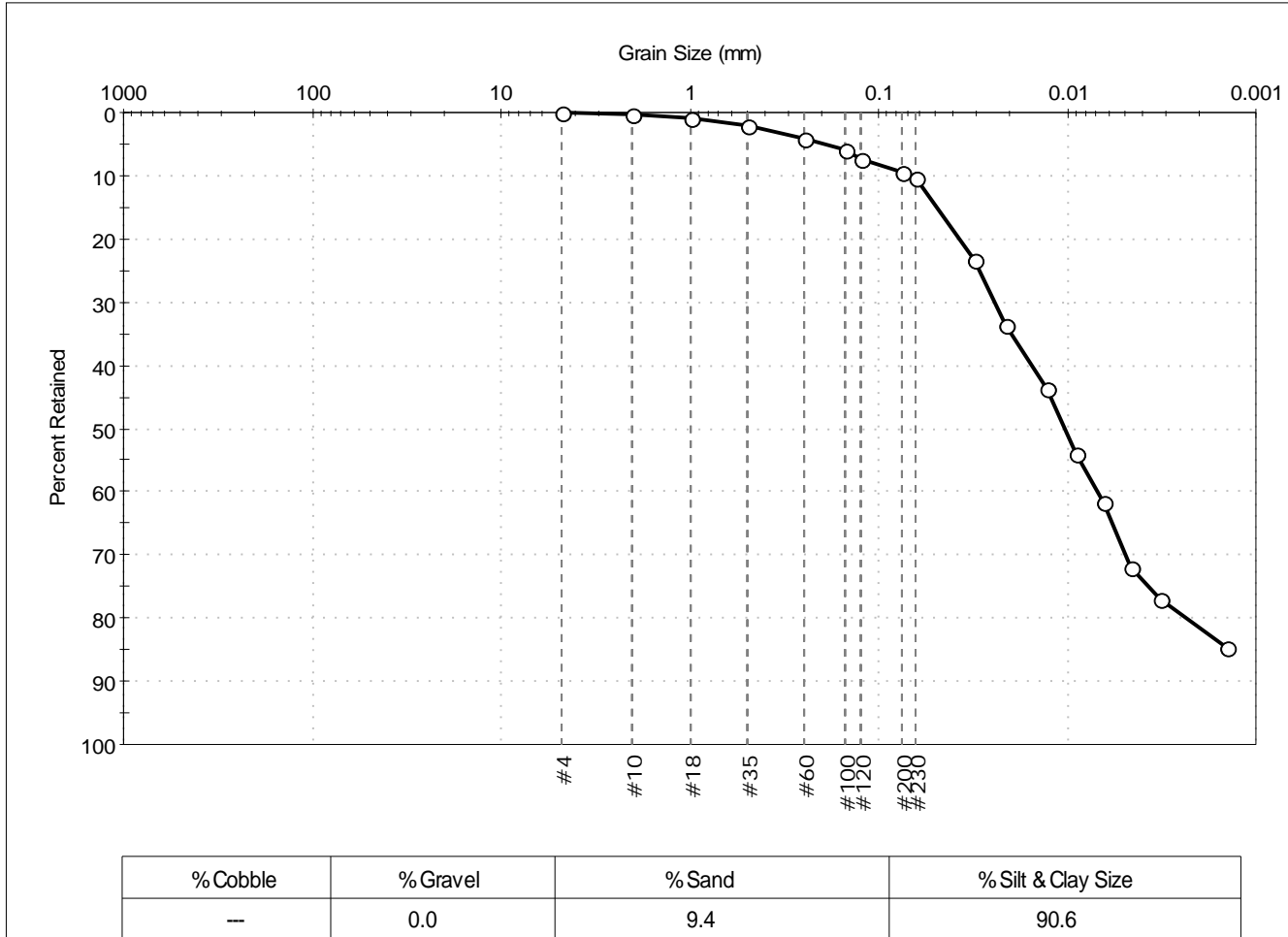
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor             | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 134-14LTM                | Sample Type: bag                        | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0016               | Test Date: 10/20/14                     | Depth: ---                | Test Id: 309463        |
| Test Comment: ---                   | Sample Description: Wet, dark gray silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 10           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0307             | 23           |               |          |
| ---        | 0.0213             | 34           |               |          |
| ---        | 0.0128             | 44           |               |          |
| ---        | 0.0090             | 54           |               |          |
| ---        | 0.0065             | 62           |               |          |
| ---        | 0.0046             | 72           |               |          |
| ---        | 0.0033             | 77           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0486 mm | D <sub>30</sub> = 0.0049 mm |
| D <sub>60</sub> = 0.0154 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0103 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

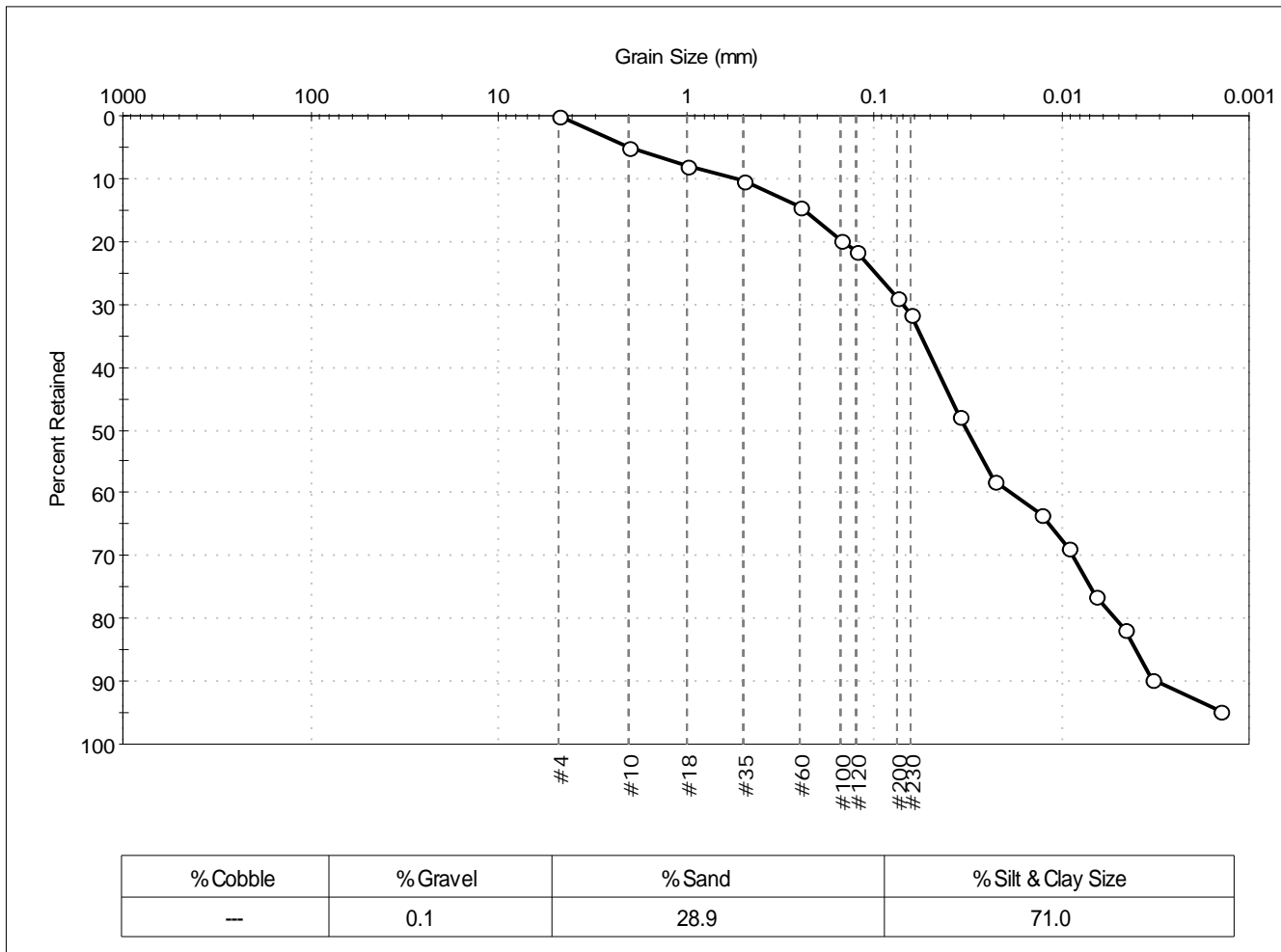
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 150-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0017  
 Test Date: 10/20/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 309464  
 Test Comment: ---  
 Sample Description: Wet, dark gray silt with sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 32           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0348             | 48           |               |          |
| ---        | 0.0228             | 58           |               |          |
| ---        | 0.0128             | 63           |               |          |
| ---        | 0.0091             | 69           |               |          |
| ---        | 0.0065             | 76           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2342 mm | D <sub>30</sub> = 0.0086 mm |
| D <sub>60</sub> = 0.0462 mm | D <sub>15</sub> = 0.0040 mm |
| D <sub>50</sub> = 0.0316 mm | D <sub>10</sub> = 0.0031 mm |
| C <sub>u</sub> = 14.903     | C <sub>c</sub> = 0.516      |

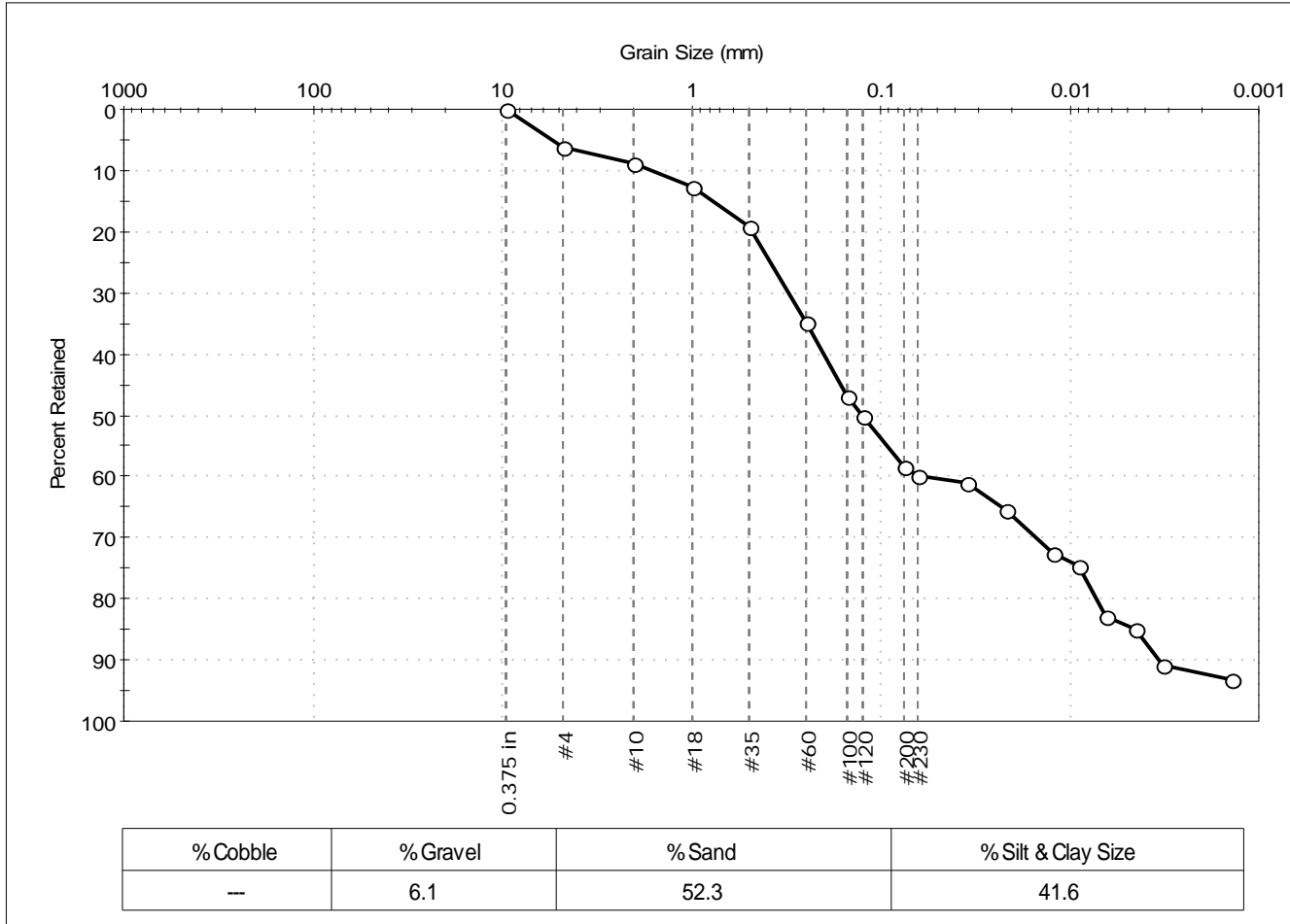
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 150-14LTM                              | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0018                             | Test Date: 10/23/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 309465             |                           |                        |
| Test Comment: ---                                 |                             |                           |                        |
| Sample Description: Wet, greenish gray silty sand |                             |                           |                        |
| Sample Comment: ---                               |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 35           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 50           |               |          |
| #200       | 0.075              | 58           |               |          |
| #230       | 0.063              | 60           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0347             | 61           |               |          |
| ---        | 0.0217             | 66           |               |          |
| ---        | 0.0123             | 72           |               |          |
| ---        | 0.0090             | 75           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0045             | 85           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7858 mm | D <sub>30</sub> = 0.0151 mm |
| D <sub>60</sub> = 0.2010 mm | D <sub>15</sub> = 0.0046 mm |
| D <sub>50</sub> = 0.1270 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 59.118     | C <sub>c</sub> = 0.334      |

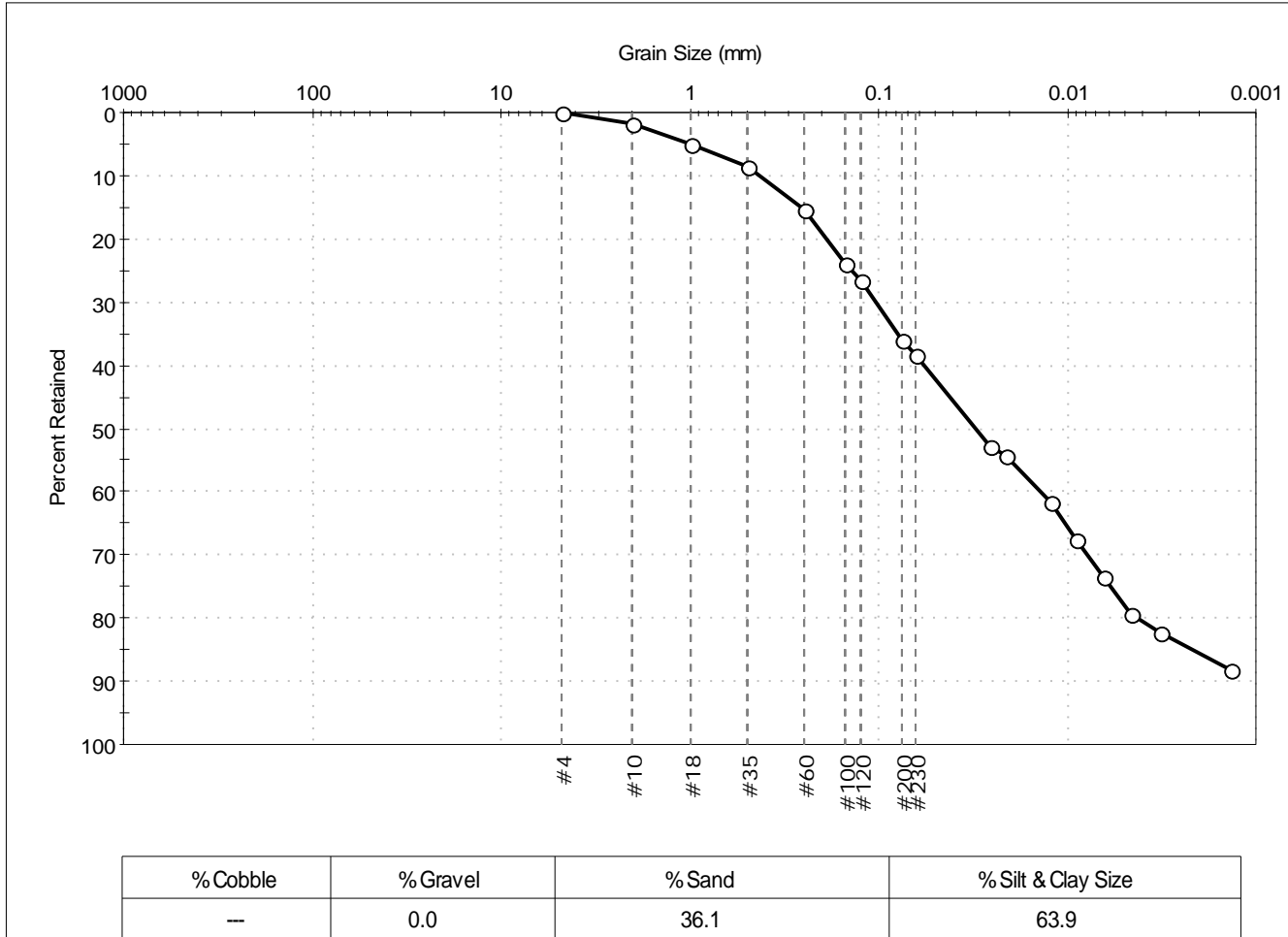
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 150-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0019               | Test Date: 10/16/14         | Test Id: 309466                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 24           |               |          |
| #120       | 0.12               | 27           |               |          |
| #200       | 0.075              | 36           |               |          |
| #230       | 0.063              | 38           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0258             | 53           |               |          |
| ---        | 0.0213             | 54           |               |          |
| ---        | 0.0123             | 62           |               |          |
| ---        | 0.0090             | 68           |               |          |
| ---        | 0.0064             | 73           |               |          |
| ---        | 0.0046             | 79           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0014             | 88           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2575 mm | D <sub>30</sub> = 0.0078 mm |
| D <sub>60</sub> = 0.0573 mm | D <sub>15</sub> = 0.0022 mm |
| D <sub>50</sub> = 0.0308 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

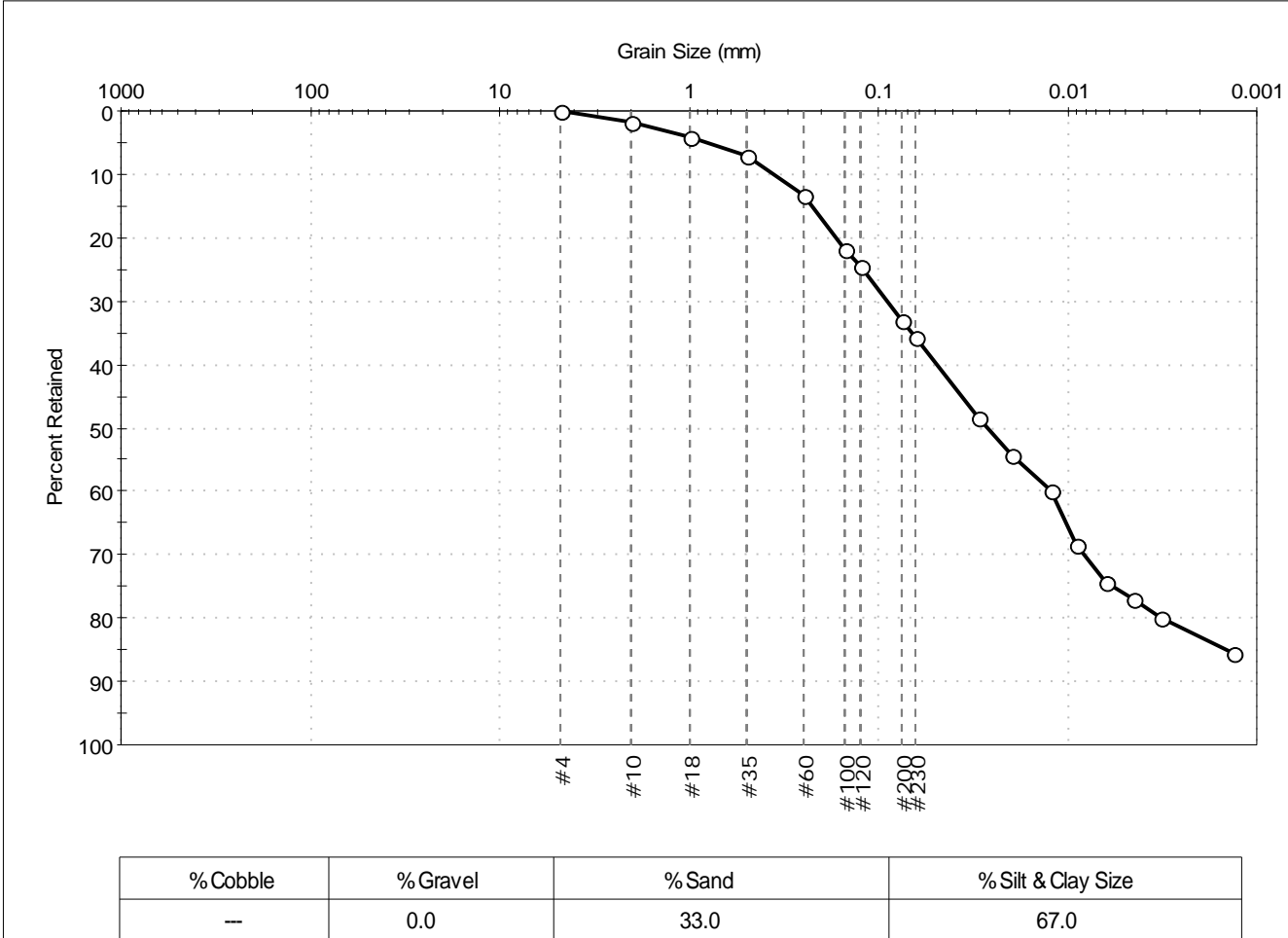
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                            | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 150-14LTM                | Sample Type: bag                                       | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0020               | Test Date: 10/16/14                                    | Depth: ---                | Test Id: 309467        |
| Test Comment: ---                   | Sample Description: Wet, dark greenish gray sandy silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 22           |               |          |
| #120       | 0.12               | 24           |               |          |
| #200       | 0.075              | 33           |               |          |
| #230       | 0.063              | 36           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0298             | 48           |               |          |
| ---        | 0.0198             | 54           |               |          |
| ---        | 0.0123             | 60           |               |          |
| ---        | 0.0089             | 69           |               |          |
| ---        | 0.0064             | 74           |               |          |
| ---        | 0.0045             | 77           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0013             | 86           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2253 mm | D <sub>30</sub> = 0.0082 mm |
| D <sub>60</sub> = 0.0491 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0267 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

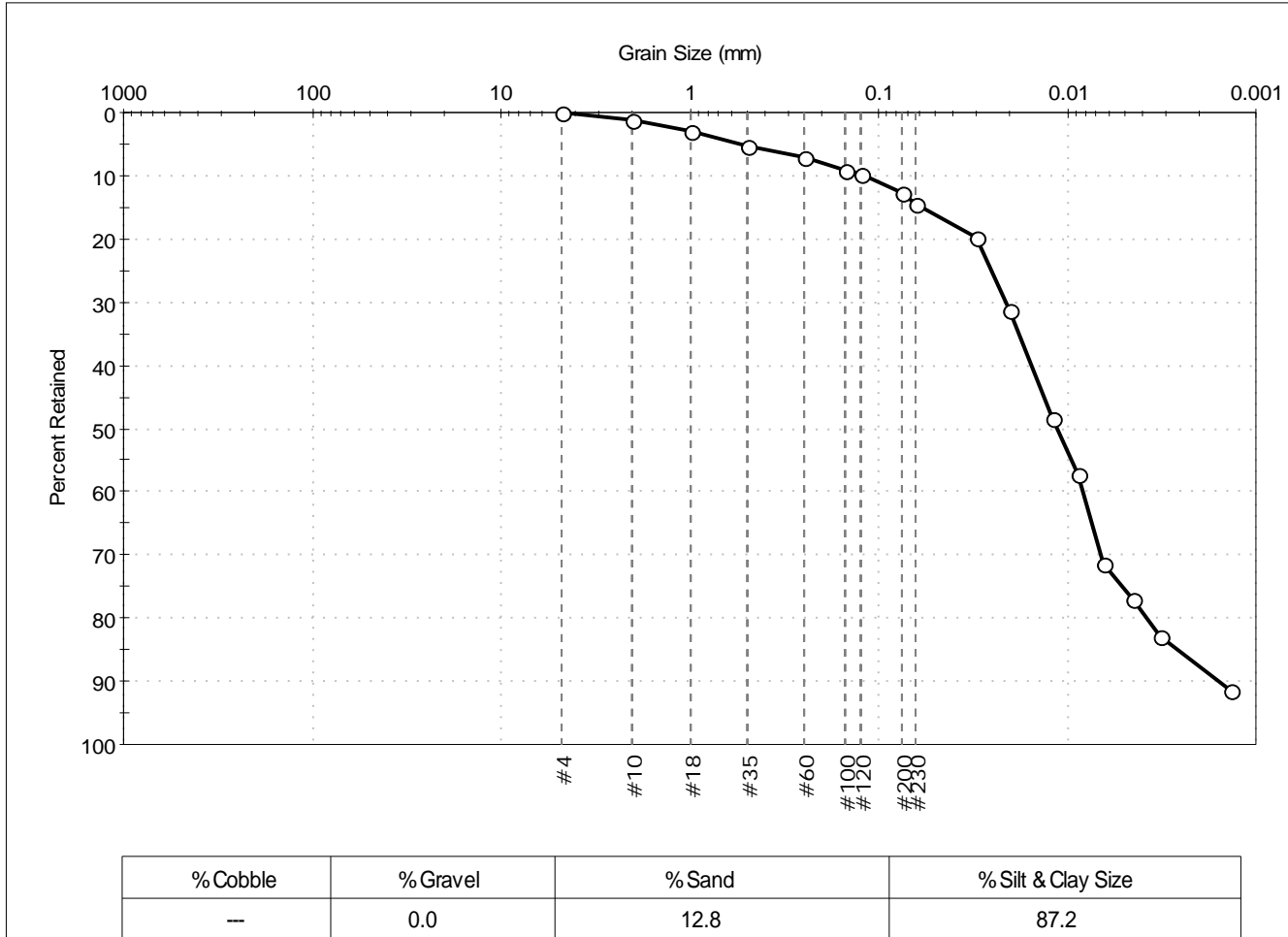
| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |





|                                     |                             |                                     |                        |
|-------------------------------------|-----------------------------|-------------------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA           | Project No: GTX-302366 |
| Boring ID: 253-14LTM                | Sample Type: bag            | Tested By: jbr                      | Checked By: jdt        |
| Sample ID: NBH14-0021               | Test Date: 10/21/14         | Test Id: 309468                     |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 13           |               |          |
| #230       | 0.063              | 14           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0302             | 20           |               |          |
| ---        | 0.0200             | 31           |               |          |
| ---        | 0.0121             | 49           |               |          |
| ---        | 0.0087             | 57           |               |          |
| ---        | 0.0064             | 71           |               |          |
| ---        | 0.0045             | 77           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0582 mm | D <sub>30</sub> = 0.0066 mm |
| D <sub>60</sub> = 0.0155 mm | D <sub>15</sub> = 0.0026 mm |
| D <sub>50</sub> = 0.0114 mm | D <sub>10</sub> = 0.0016 mm |
| C <sub>u</sub> = 9.688      | C <sub>c</sub> = 1.756      |

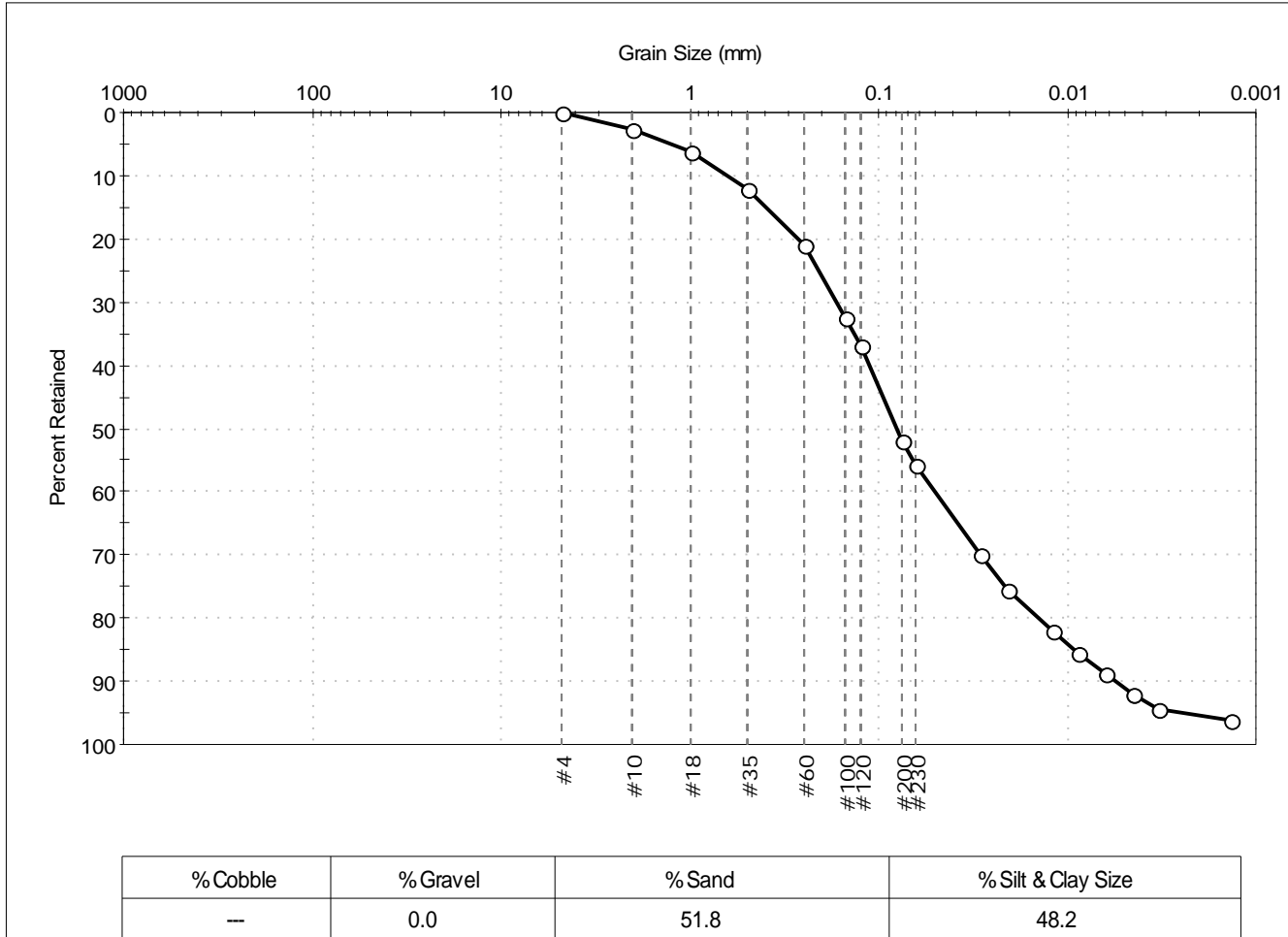
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 253-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0022               | Test Date: 10/21/14         | Test Id: 309469                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 21           |               |          |
| #100       | 0.15               | 32           |               |          |
| #120       | 0.12               | 37           |               |          |
| #200       | 0.075              | 52           |               |          |
| #230       | 0.063              | 56           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0292             | 70           |               |          |
| ---        | 0.0207             | 75           |               |          |
| ---        | 0.0120             | 82           |               |          |
| ---        | 0.0088             | 85           |               |          |
| ---        | 0.0063             | 89           |               |          |
| ---        | 0.0045             | 92           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3969 mm | D <sub>30</sub> = 0.0289 mm |
| D <sub>60</sub> = 0.1122 mm | D <sub>15</sub> = 0.0092 mm |
| D <sub>50</sub> = 0.0797 mm | D <sub>10</sub> = 0.0056 mm |
| C <sub>u</sub> = 20.036     | C <sub>c</sub> = 1.329      |

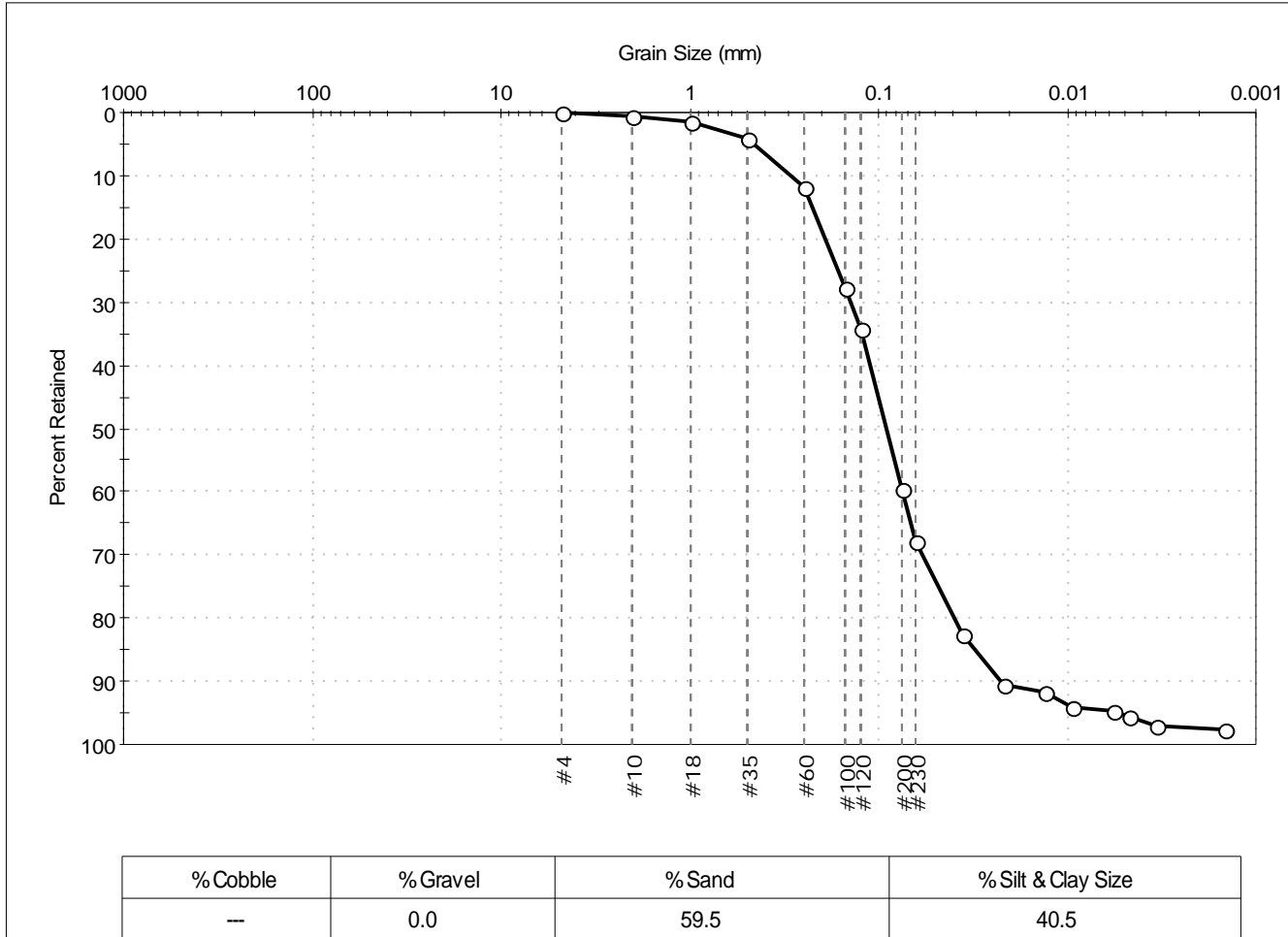
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 253-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0023               | Test Date: 10/15/14         | Test Id: 309470                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 28           |               |          |
| #120       | 0.12               | 34           |               |          |
| #200       | 0.075              | 59           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0355             | 83           |               |          |
| ---        | 0.0218             | 91           |               |          |
| ---        | 0.0132             | 92           |               |          |
| ---        | 0.0094             | 94           |               |          |
| ---        | 0.0057             | 95           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0034             | 97           |               |          |
| ---        | 0.0015             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2257 mm | D <sub>30</sub> = 0.0577 mm |
| D <sub>60</sub> = 0.1112 mm | D <sub>15</sub> = 0.0308 mm |
| D <sub>50</sub> = 0.0908 mm | D <sub>10</sub> = 0.0227 mm |
| C <sub>u</sub> = 4.899      | C <sub>c</sub> = 1.319      |

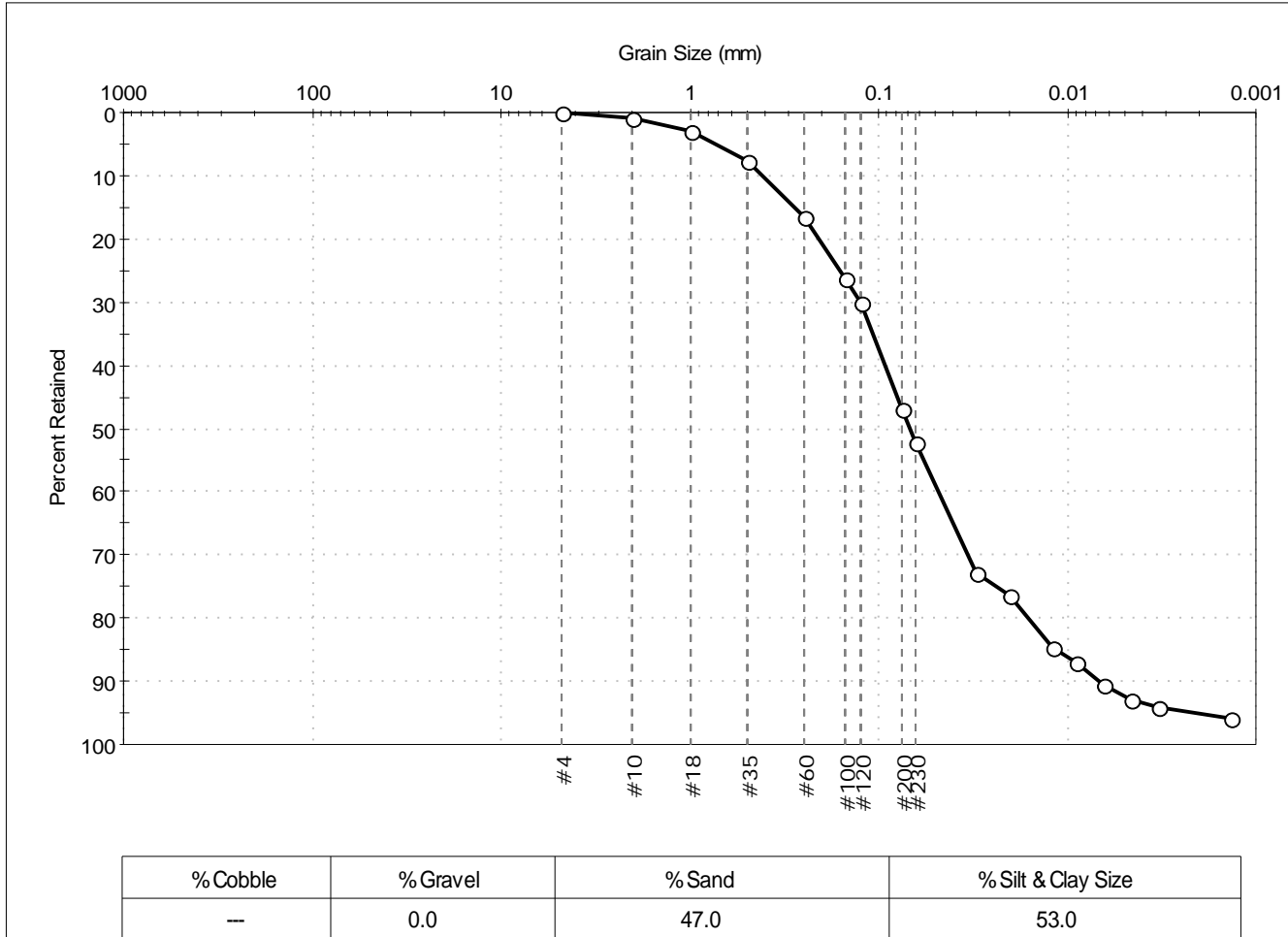
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 253-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0024               | Test Date: 10/21/14         | Test Id: 309471                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 17           |               |          |
| #100       | 0.15               | 26           |               |          |
| #120       | 0.12               | 30           |               |          |
| #200       | 0.075              | 47           |               |          |
| #230       | 0.063              | 52           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0301             | 73           |               |          |
| ---        | 0.0203             | 76           |               |          |
| ---        | 0.0121             | 85           |               |          |
| ---        | 0.0090             | 87           |               |          |
| ---        | 0.0064             | 91           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2819 mm | D <sub>30</sub> = 0.0334 mm |
| D <sub>60</sub> = 0.0928 mm | D <sub>15</sub> = 0.0117 mm |
| D <sub>50</sub> = 0.0677 mm | D <sub>10</sub> = 0.0068 mm |
| C <sub>u</sub> = 13.647     | C <sub>c</sub> = 1.768      |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

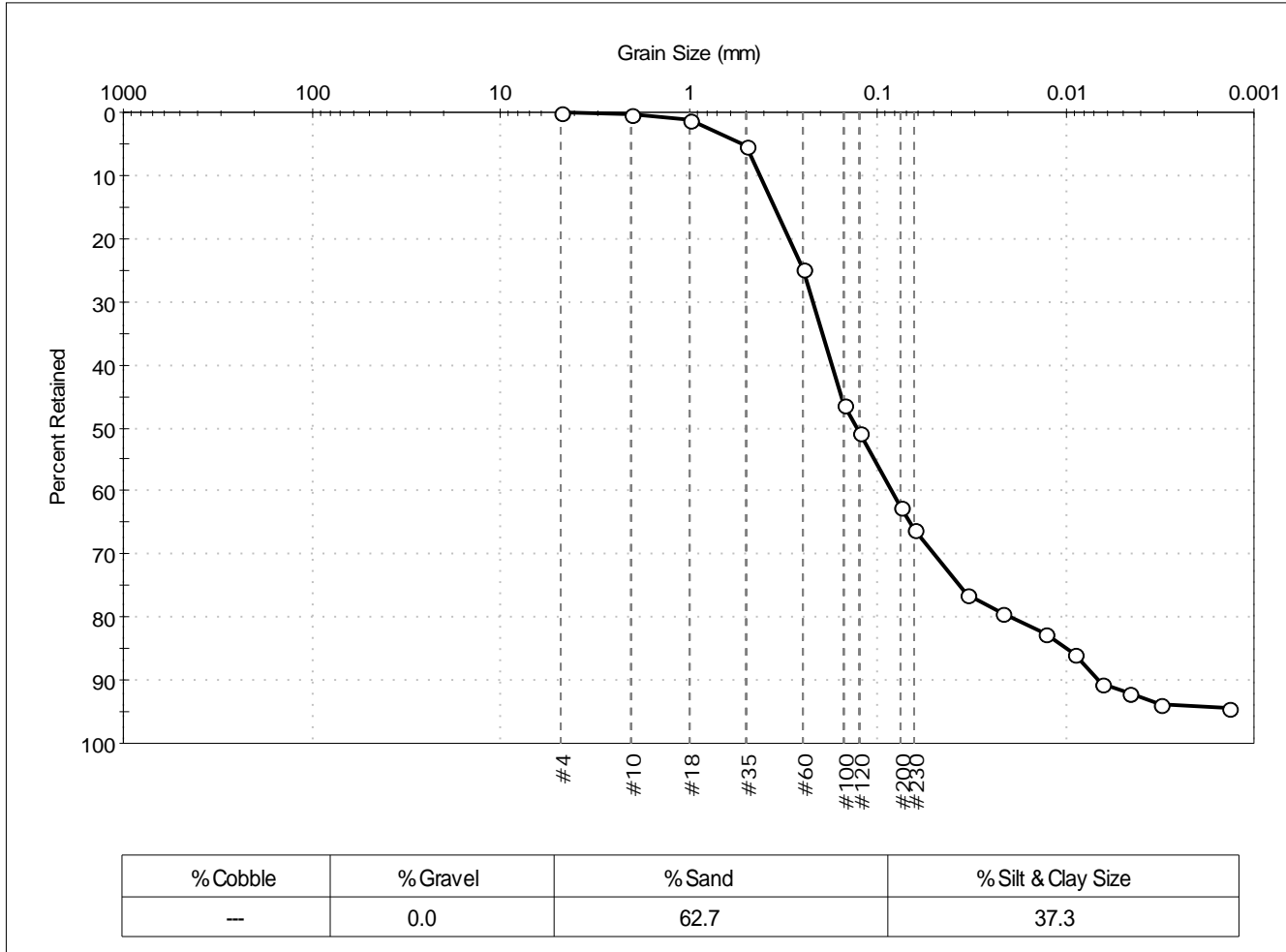
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 216-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0025               | Test Date: 10/14/14         | Test Id: 309472                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 46           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 63           |               |          |
| #230       | 0.063              | 66           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 76           |               |          |
| ---        | 0.0219             | 79           |               |          |
| ---        | 0.0127             | 83           |               |          |
| ---        | 0.0090             | 86           |               |          |
| ---        | 0.0065             | 91           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0032             | 94           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3531 mm | D <sub>30</sub> = 0.0497 mm |
| D <sub>60</sub> = 0.1744 mm | D <sub>15</sub> = 0.0098 mm |
| D <sub>50</sub> = 0.1288 mm | D <sub>10</sub> = 0.0067 mm |
| C <sub>u</sub> = 26.030     | C <sub>c</sub> = 2.114      |

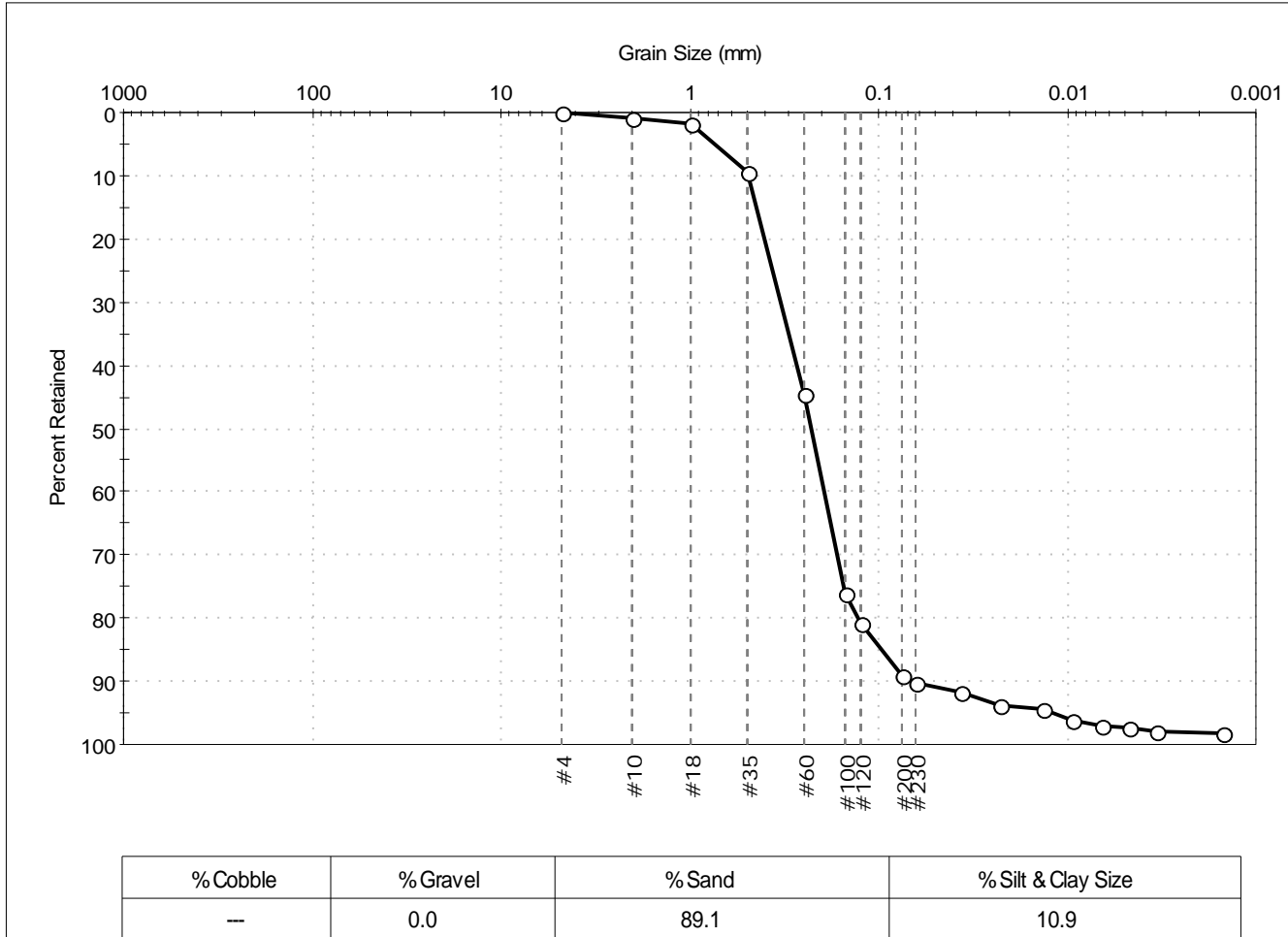
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 216-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0026                     | Test Date:   | 10/16/14   |
| Depth:              | ---                            | Test Id:     | 309473     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, olive gray sand with silt |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 45           |               |          |
| #100       | 0.15               | 76           |               |          |
| #120       | 0.12               | 81           |               |          |
| #200       | 0.075              | 89           |               |          |
| #230       | 0.063              | 90           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0371             | 92           |               |          |
| ---        | 0.0230             | 94           |               |          |
| ---        | 0.0133             | 94           |               |          |
| ---        | 0.0095             | 96           |               |          |
| ---        | 0.0067             | 97           |               |          |
| ---        | 0.0047             | 97           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0015             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4476 mm | D <sub>30</sub> = 0.1659 mm |
| D <sub>60</sub> = 0.2738 mm | D <sub>15</sub> = 0.0968 mm |
| D <sub>50</sub> = 0.2292 mm | D <sub>10</sub> = 0.0661 mm |
| C <sub>u</sub> = 4.142      | C <sub>c</sub> = 1.521      |

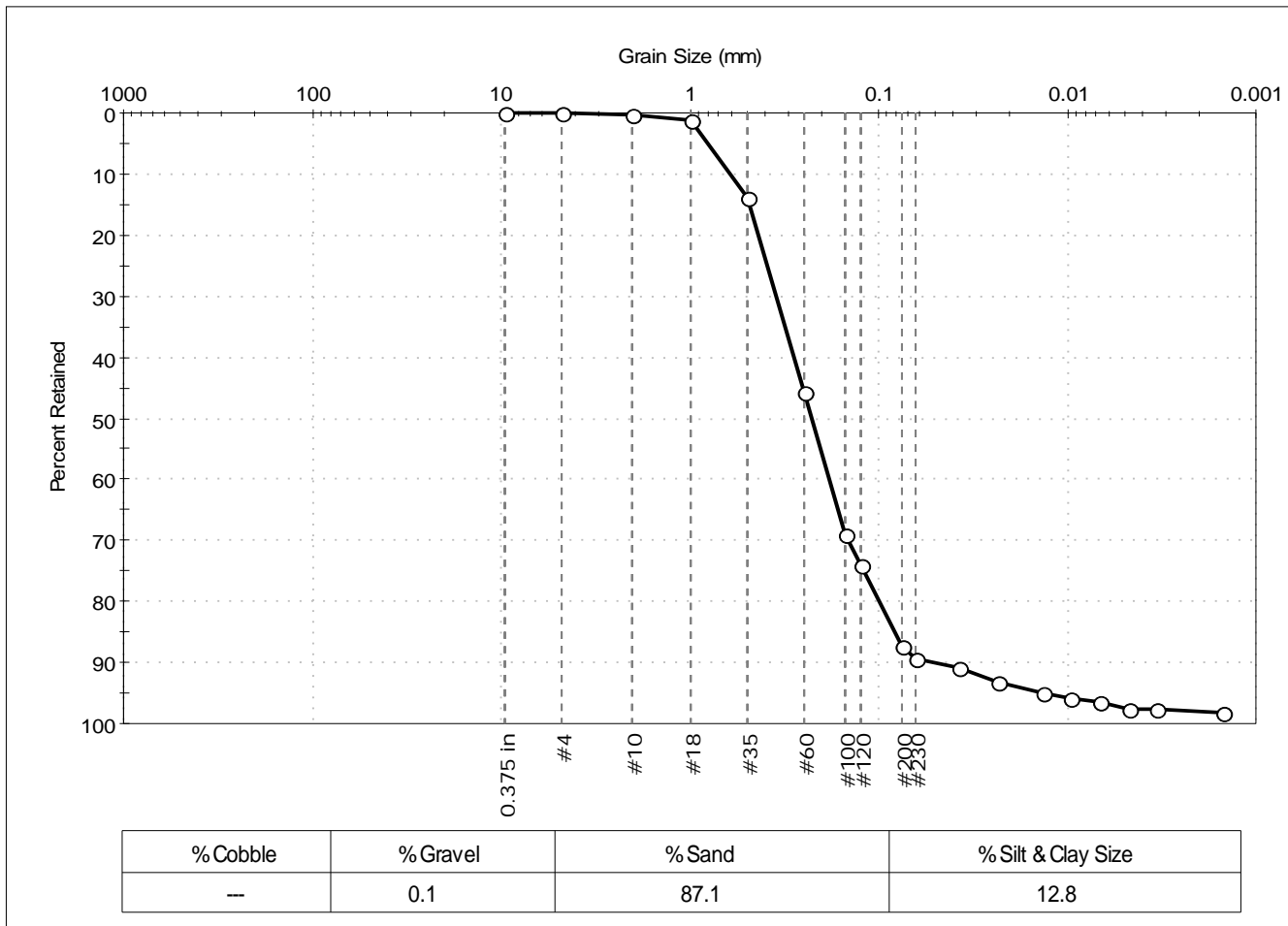
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 216-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0027               | Test Date: 10/16/14         | Test Id: 309474                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 46           |               |          |
| #100       | 0.15               | 69           |               |          |
| #120       | 0.12               | 74           |               |          |
| #200       | 0.075              | 87           |               |          |
| #230       | 0.063              | 89           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0375             | 91           |               |          |
| ---        | 0.0234             | 93           |               |          |
| ---        | 0.0135             | 95           |               |          |
| ---        | 0.0095             | 96           |               |          |
| ---        | 0.0067             | 97           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0015             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4869 mm | D <sub>30</sub> = 0.1444 mm |
| D <sub>60</sub> = 0.2829 mm | D <sub>15</sub> = 0.0818 mm |
| D <sub>50</sub> = 0.2274 mm | D <sub>10</sub> = 0.0517 mm |
| C <sub>u</sub> = 5.472      | C <sub>c</sub> = 1.426      |

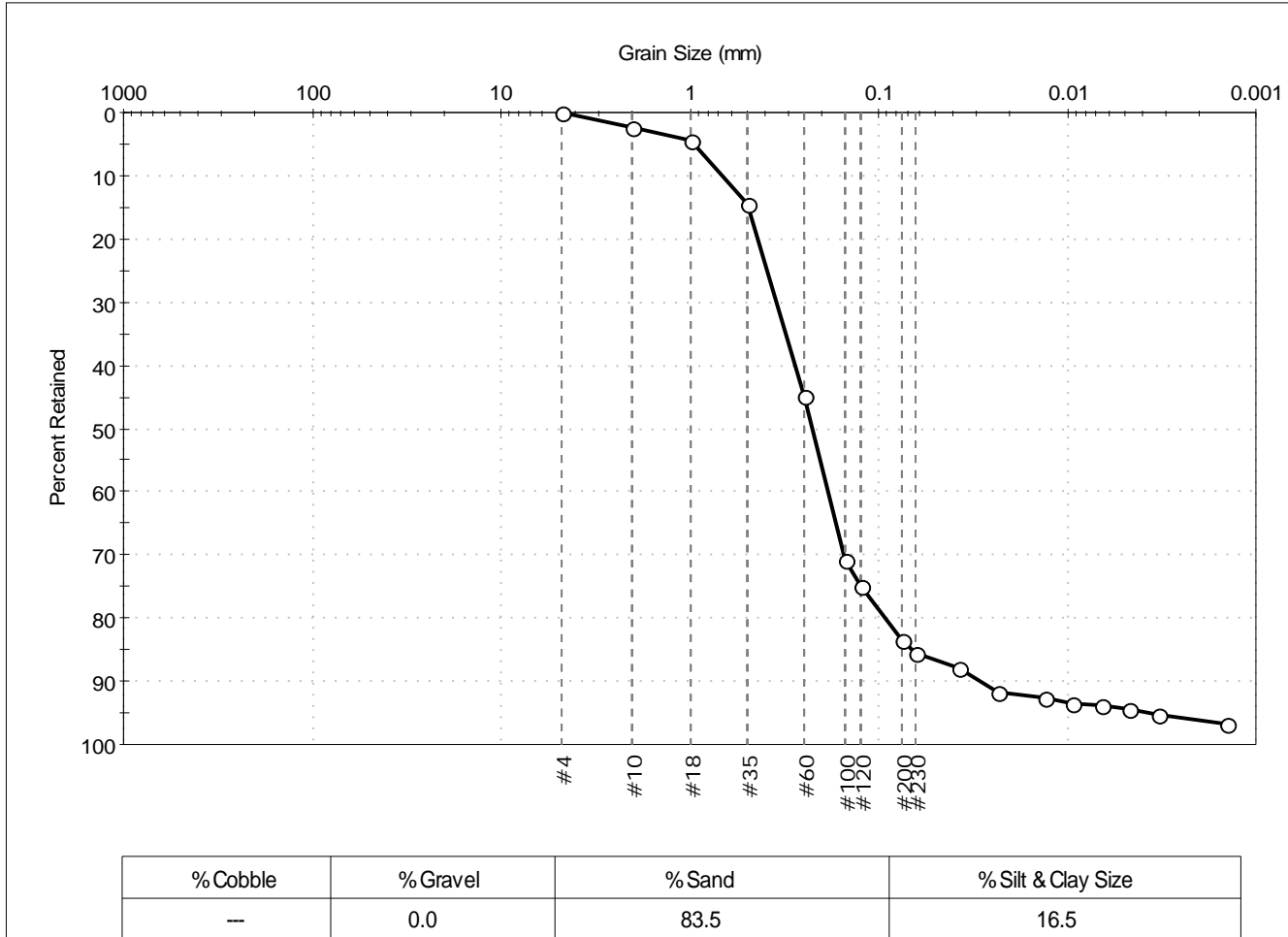
| <u>Classification</u>                               |     |
|---|-----|
| ASTM  | N/A |
| AASHTO Stone Fragments, Gravel and Sand (A-1-b (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 216-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0028                     | Test Date:   | 10/21/14   |
| Depth:              | ---                            | Test Id:     | 309475     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 45           |               |          |
| #100       | 0.15               | 71           |               |          |
| #120       | 0.12               | 75           |               |          |
| #200       | 0.075              | 84           |               |          |
| #230       | 0.063              | 85           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0372             | 88           |               |          |
| ---        | 0.0232             | 92           |               |          |
| ---        | 0.0133             | 93           |               |          |
| ---        | 0.0094             | 93           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4934 mm | D <sub>30</sub> = 0.1522 mm |
| D <sub>60</sub> = 0.2795 mm | D <sub>15</sub> = 0.0654 mm |
| D <sub>50</sub> = 0.2260 mm | D <sub>10</sub> = 0.0284 mm |
| C <sub>u</sub> = 9.842      | C <sub>c</sub> = 2.918      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

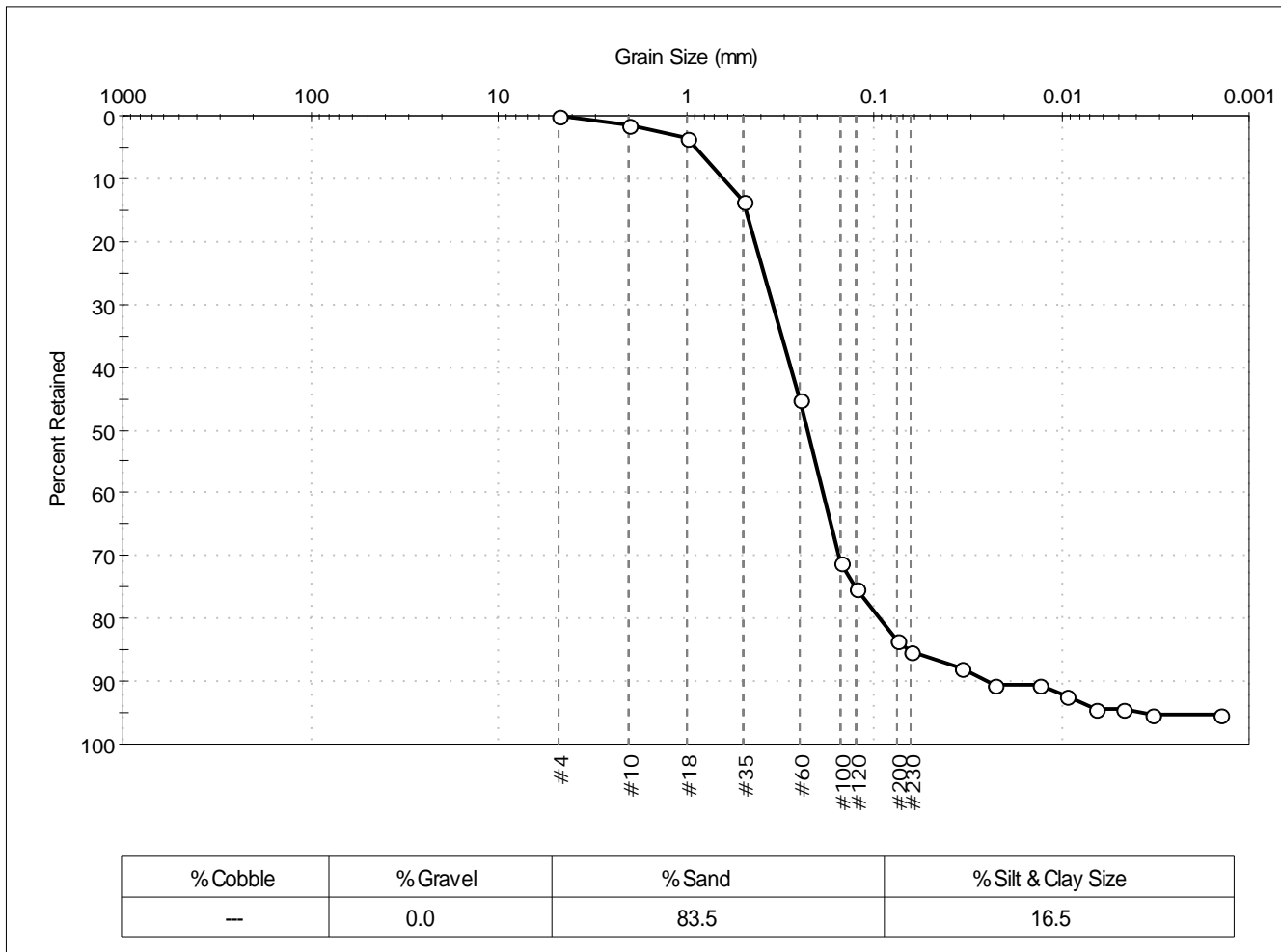
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 216-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0028DUP  
 Test Date: 10/15/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 309478  
 Test Comment: ---  
 Sample Description: Wet, very dark gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 45           |               |          |
| #100       | 0.15               | 71           |               |          |
| #120       | 0.12               | 75           |               |          |
| #200       | 0.075              | 84           |               |          |
| #230       | 0.063              | 85           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0345             | 88           |               |          |
| ---        | 0.0228             | 91           |               |          |
| ---        | 0.0131             | 91           |               |          |
| ---        | 0.0093             | 92           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4856 mm | D <sub>30</sub> = 0.1532 mm |
| D <sub>60</sub> = 0.2794 mm | D <sub>15</sub> = 0.0651 mm |
| D <sub>50</sub> = 0.2268 mm | D <sub>10</sub> = 0.0248 mm |
| C <sub>u</sub> = 11.266     | C <sub>c</sub> = 3.387      |

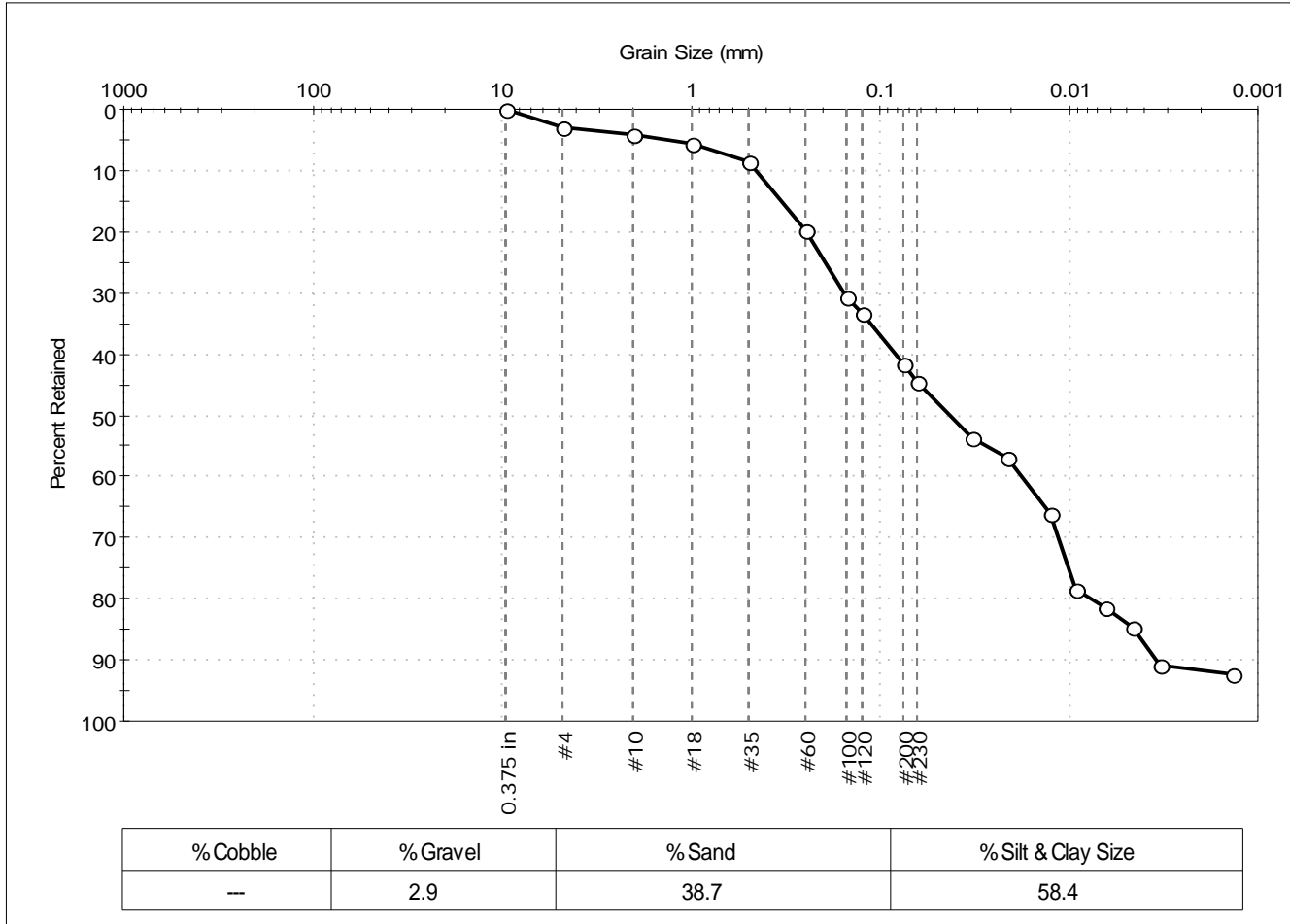
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 220-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0029                     | Test Date:   | 10/21/14   |
| Depth:              | ---                            | Test Id:     | 309476     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray sandy silt |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 20           |               |          |
| #100       | 0.15               | 31           |               |          |
| #120       | 0.12               | 33           |               |          |
| #200       | 0.075              | 42           |               |          |
| #230       | 0.063              | 45           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0330             | 54           |               |          |
| ---        | 0.0211             | 57           |               |          |
| ---        | 0.0125             | 66           |               |          |
| ---        | 0.0091             | 78           |               |          |
| ---        | 0.0065             | 81           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 92           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3376 mm | D <sub>30</sub> = 0.0113 mm |
| D <sub>60</sub> = 0.0829 mm | D <sub>15</sub> = 0.0045 mm |
| D <sub>50</sub> = 0.0429 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 24.382     | C <sub>c</sub> = 0.453      |

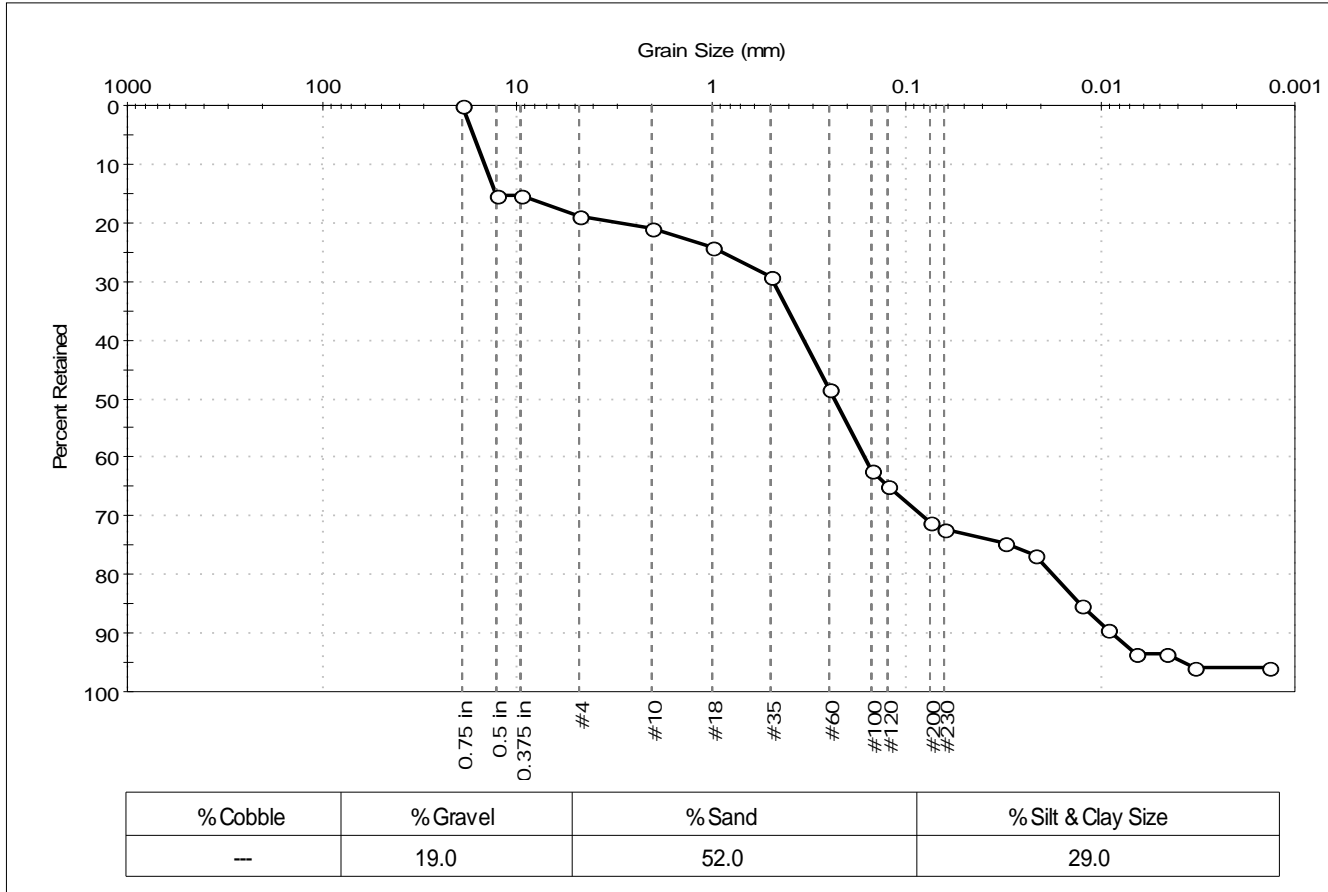
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute                |              |            |
| Project:            | New Bedford Harbor                         |              |            |
| Location:           | New Bedford, MA                            | Project No:  | GTX-302366 |
| Boring ID:          | 220-14LTM                                  | Sample Type: | bag        |
| Sample ID:          | NBH14-0030                                 | Test Date:   | 10/21/14   |
| Depth:              | ---  | Test Id:     | 309477     |
| Test Comment:       | ---  |              |            |
| Sample Description: | Wet, very dark gray silty sand with gravel |              |            |
| Sample Comment:     | ---  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.70              | 15           |               |          |
| 0.375 in   | 9.50               | 15           |               |          |
| #4         | 4.75               | 19           |               |          |
| #10        | 2.00               | 21           |               |          |
| #18        | 1.00               | 24           |               |          |
| #35        | 0.50               | 29           |               |          |
| #60        | 0.25               | 48           |               |          |
| #100       | 0.15               | 62           |               |          |
| #120       | 0.12               | 65           |               |          |
| #200       | 0.075              | 71           |               |          |
| #230       | 0.063              | 72           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0313             | 75           |               |          |
| ---        | 0.0215             | 77           |               |          |
| ---        | 0.0125             | 85           |               |          |
| ---        | 0.0092             | 89           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 12.7817 mm | D <sub>30</sub> = 0.0816 mm |
| D <sub>60</sub> = 0.3378 mm  | D <sub>15</sub> = 0.0126 mm |
| D <sub>50</sub> = 0.2349 mm  | D <sub>10</sub> = 0.0088 mm |
| C <sub>u</sub> = 38.386      | C <sub>c</sub> = 2.240      |

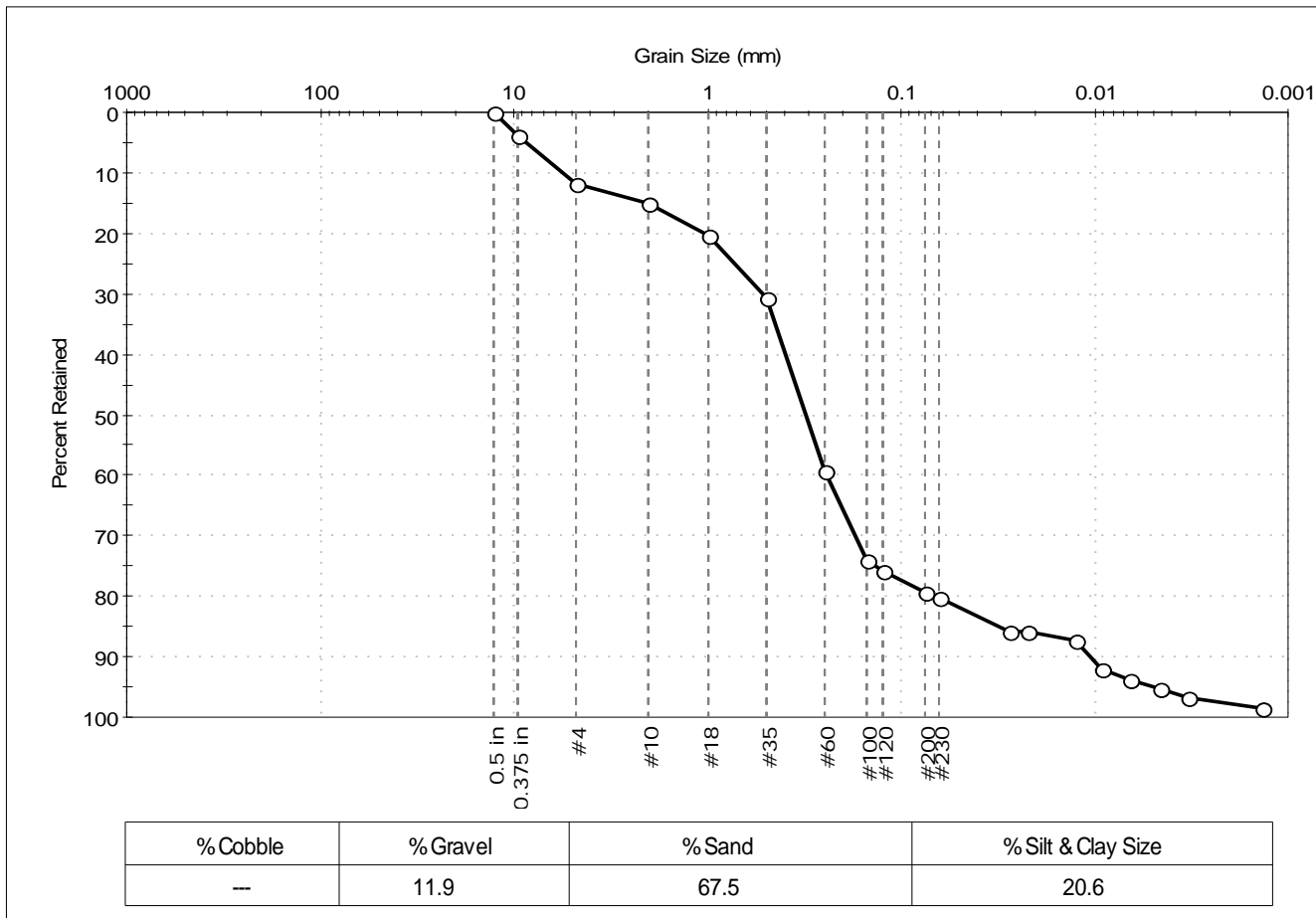
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute                | Project No: GTX-302366 |
| Project: New Bedford Harbor                        |                        |
| Location: New Bedford, MA                          |                        |
| Boring ID: 220-14LTM                               | Sample Type: bag       |
| Sample ID: NBH14-0031                              | Test Date: 10/20/14    |
| Depth: ---   | Test Id: 309479        |
| Test Comment: ---                                  | Tested By: jbr         |
| Sample Description: Wet, very dark gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 15           |               |          |
| #18        | 1.00               | 20           |               |          |
| #35        | 0.50               | 31           |               |          |
| #60        | 0.25               | 59           |               |          |
| #100       | 0.15               | 74           |               |          |
| #120       | 0.12               | 76           |               |          |
| #200       | 0.075              | 79           |               |          |
| #230       | 0.063              | 80           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0273             | 86           |               |          |
| ---        | 0.0224             | 86           |               |          |
| ---        | 0.0126             | 87           |               |          |
| ---        | 0.0092             | 92           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0033             | 97           |               |          |
| ---        | 0.0014             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.9810 mm | D <sub>30</sub> = 0.1729 mm |
| D <sub>60</sub> = 0.3986 mm | D <sub>15</sub> = 0.0307 mm |
| D <sub>50</sub> = 0.3135 mm | D <sub>10</sub> = 0.0106 mm |
| C <sub>u</sub> = 37.604     | C <sub>c</sub> = 7.075      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | N/A  |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

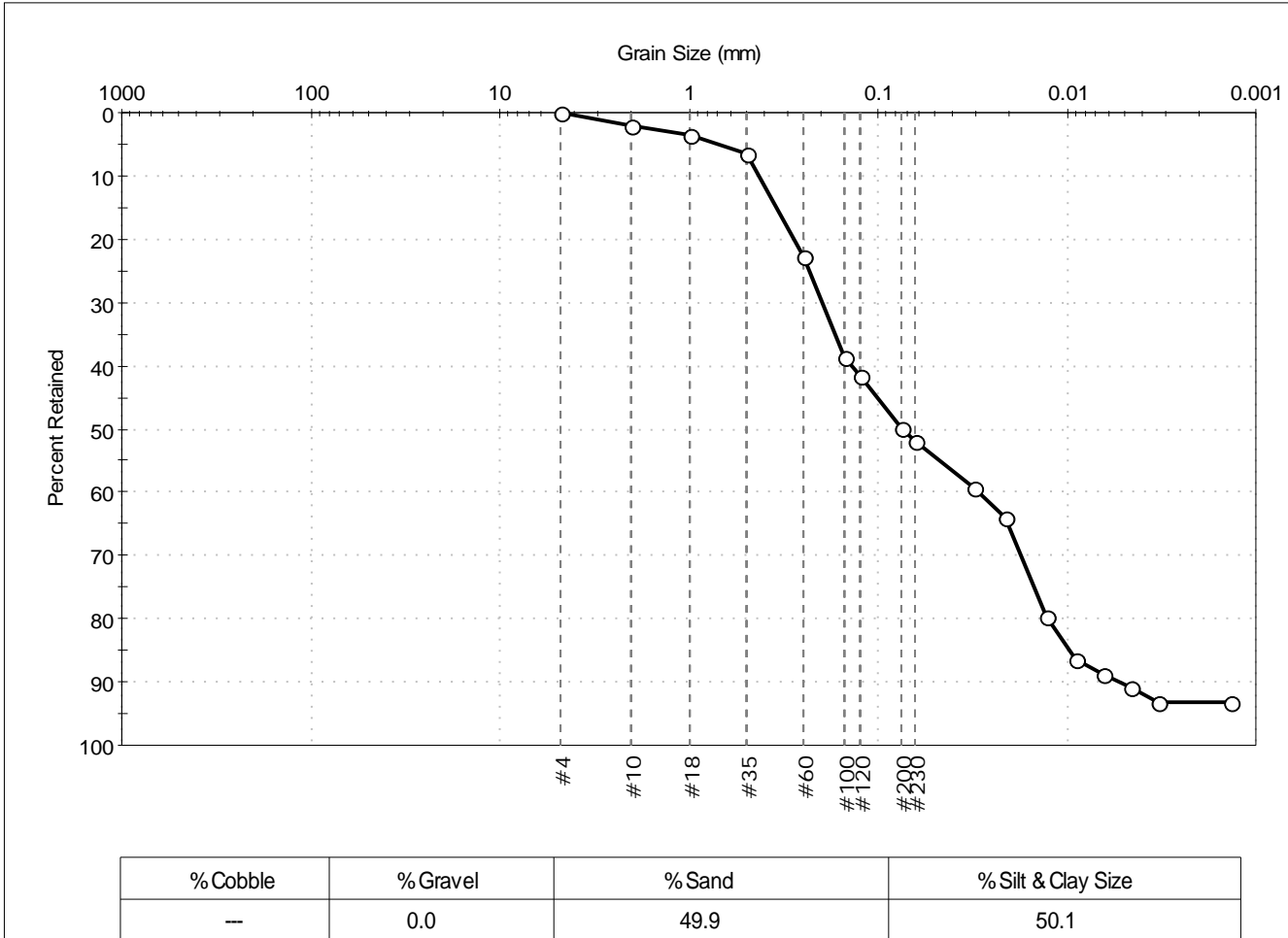
Separation of Sample: #230 Sieve





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                  | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 220-14LTM                                 | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0032                                | Test Date: 10/21/14         | Test Id: 309480           |                        |
| Depth: ---   | Test Comment: ---           |                           |                        |
| Sample Description: Moist, very dark gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 39           |               |          |
| #120       | 0.12               | 42           |               |          |
| #200       | 0.075              | 50           |               |          |
| #230       | 0.063              | 52           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 59           |               |          |
| ---        | 0.0213             | 64           |               |          |
| ---        | 0.0127             | 80           |               |          |
| ---        | 0.0091             | 86           |               |          |
| ---        | 0.0065             | 89           |               |          |
| ---        | 0.0046             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3470 mm | D <sub>30</sub> = 0.0174 mm |
| D <sub>60</sub> = 0.1375 mm | D <sub>15</sub> = 0.0098 mm |
| D <sub>50</sub> = 0.0743 mm | D <sub>10</sub> = 0.0053 mm |
| C <sub>u</sub> = 25.943     | C <sub>c</sub> = 0.415      |

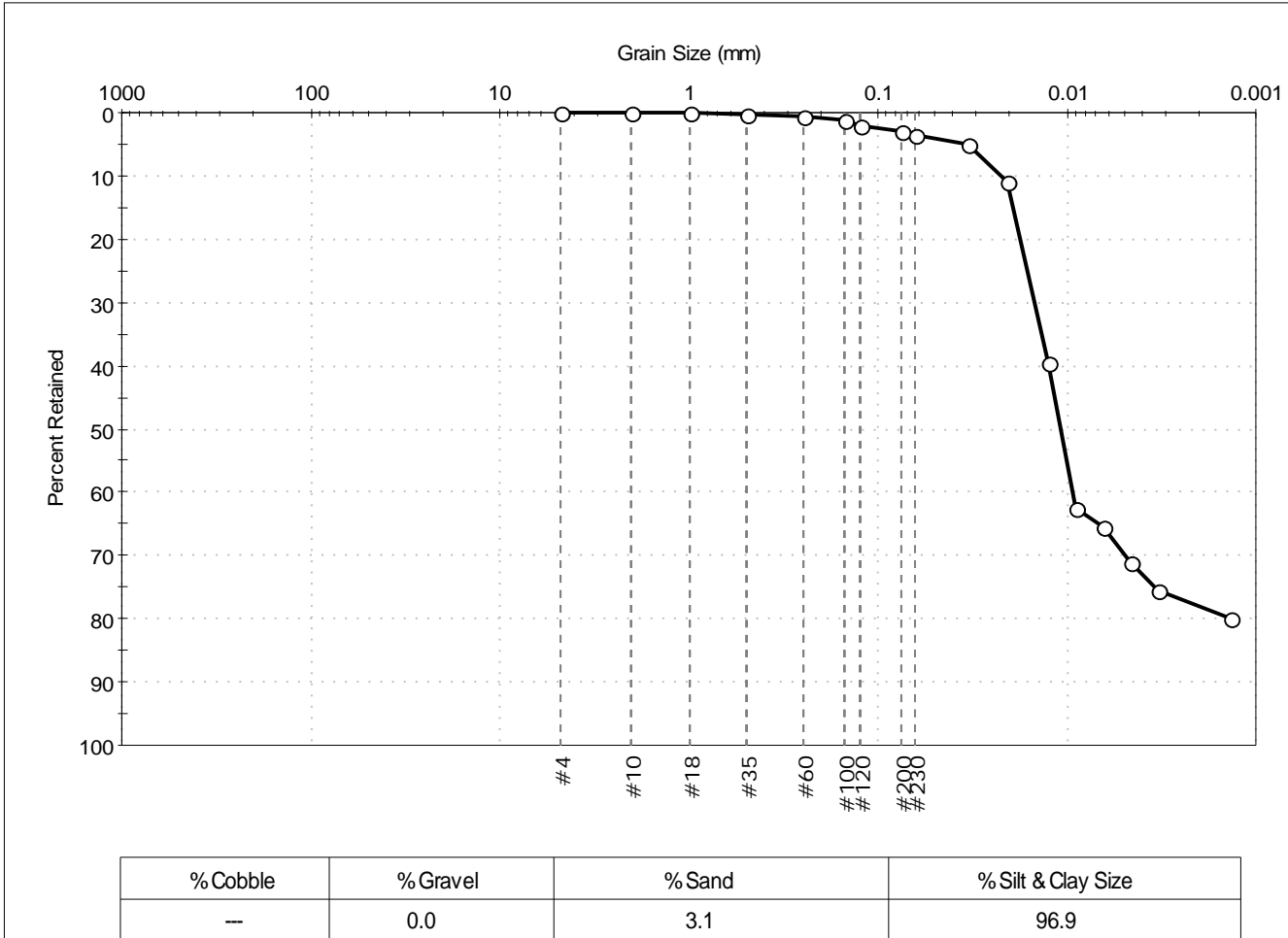
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                   | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 235-14LTM                                  | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0033                                 | Test Date: 10/21/14         | Test Id: 309481           |                        |
| Depth: ---  | Test Comment: ---           |                           |                        |
| Sample Description: Wet, very dark grayish brown silt |                             |                           |                        |
| Sample Comment: ---                                   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 5            |               |          |
| ---        | 0.0207             | 11           |               |          |
| ---        | 0.0126             | 40           |               |          |
| ---        | 0.0091             | 63           |               |          |
| ---        | 0.0065             | 65           |               |          |
| ---        | 0.0046             | 71           |               |          |
| ---        | 0.0033             | 76           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0193 mm | D <sub>30</sub> = 0.0049 mm |
| D <sub>60</sub> = 0.0125 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0109 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

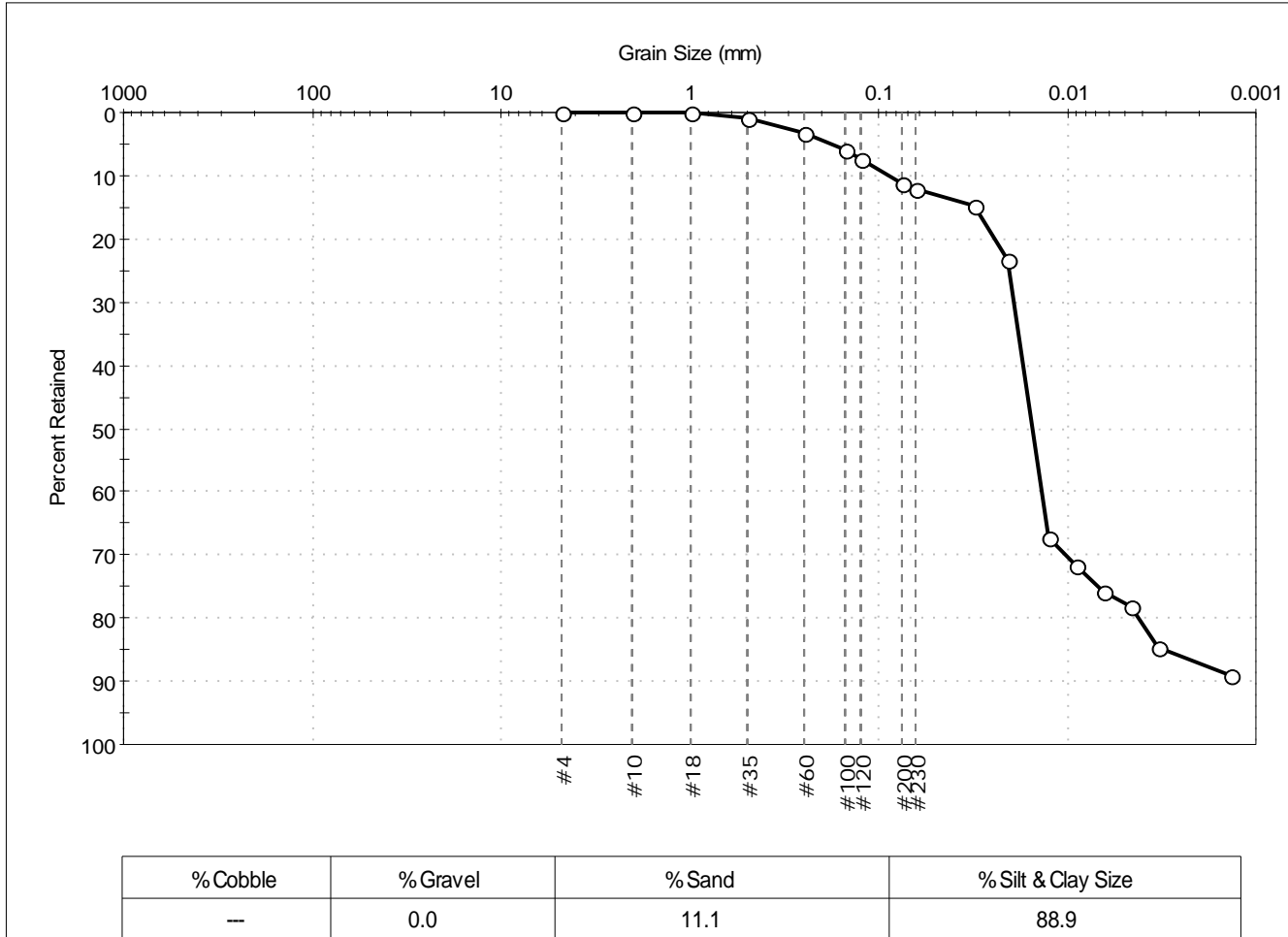
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 235-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0034                  | Test Date:   | 10/20/14   |
| Depth:              | ---                         | Test Id:     | 309482     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, very dark gray silt    |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 12           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 15           |               |          |
| ---        | 0.0209             | 23           |               |          |
| ---        | 0.0127             | 67           |               |          |
| ---        | 0.0091             | 72           |               |          |
| ---        | 0.0065             | 76           |               |          |
| ---        | 0.0046             | 78           |               |          |
| ---        | 0.0033             | 85           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0308 mm | D <sub>30</sub> = 0.0102 mm |
| D <sub>60</sub> = 0.0173 mm | D <sub>15</sub> = 0.0031 mm |
| D <sub>50</sub> = 0.0154 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

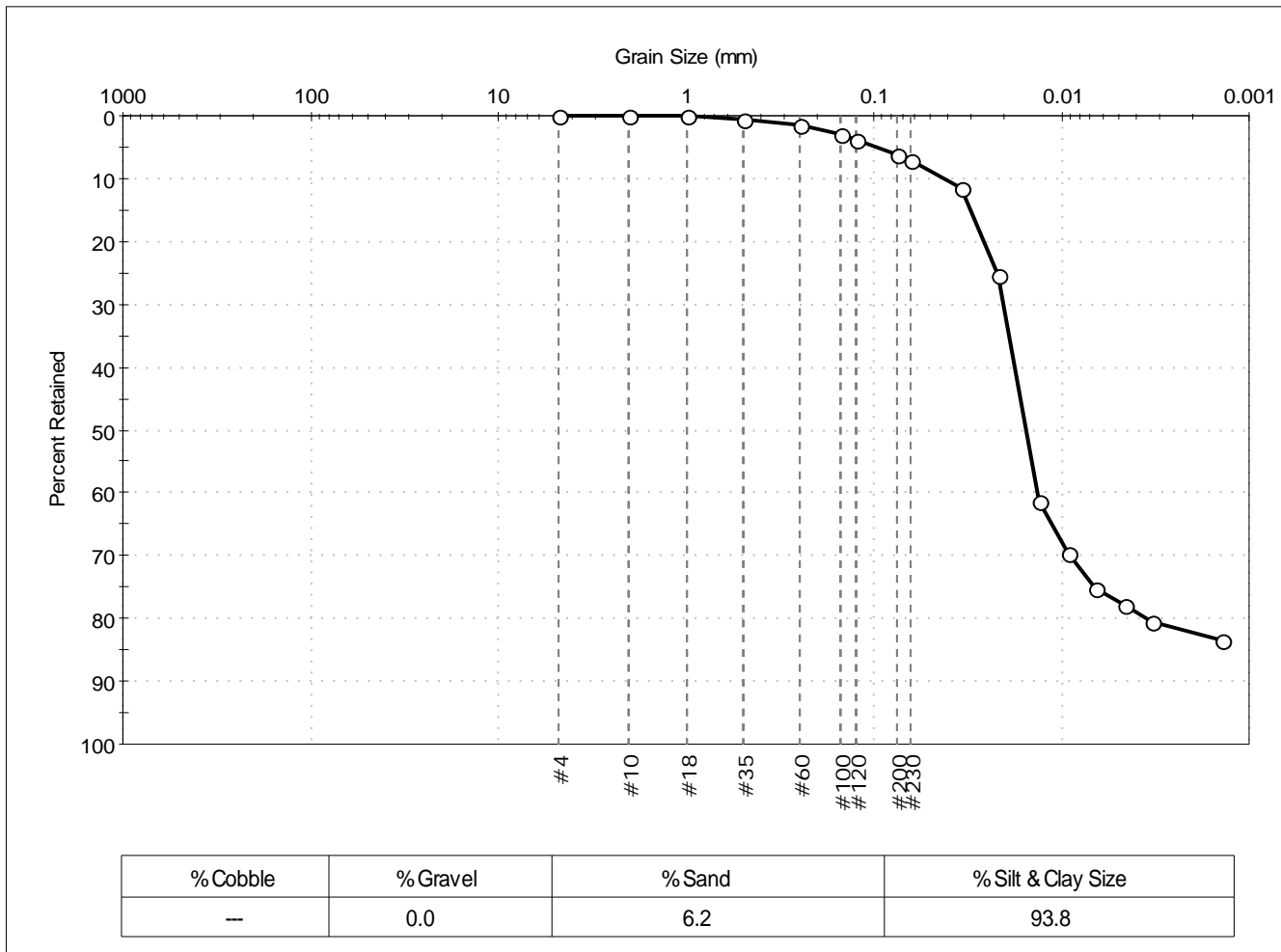
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 235-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0035               | Test Date: 10/23/14         | Test Id: 309483                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 4            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 7            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 12           |               |          |
| ---        | 0.0219             | 25           |               |          |
| ---        | 0.0130             | 61           |               |          |
| ---        | 0.0093             | 70           |               |          |
| ---        | 0.0066             | 75           |               |          |
| ---        | 0.0047             | 78           |               |          |
| ---        | 0.0033             | 81           |               |          |
| ---        | 0.0014             | 83           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0308 mm | D <sub>30</sub> = 0.0091 mm |
| D <sub>60</sub> = 0.0177 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0153 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

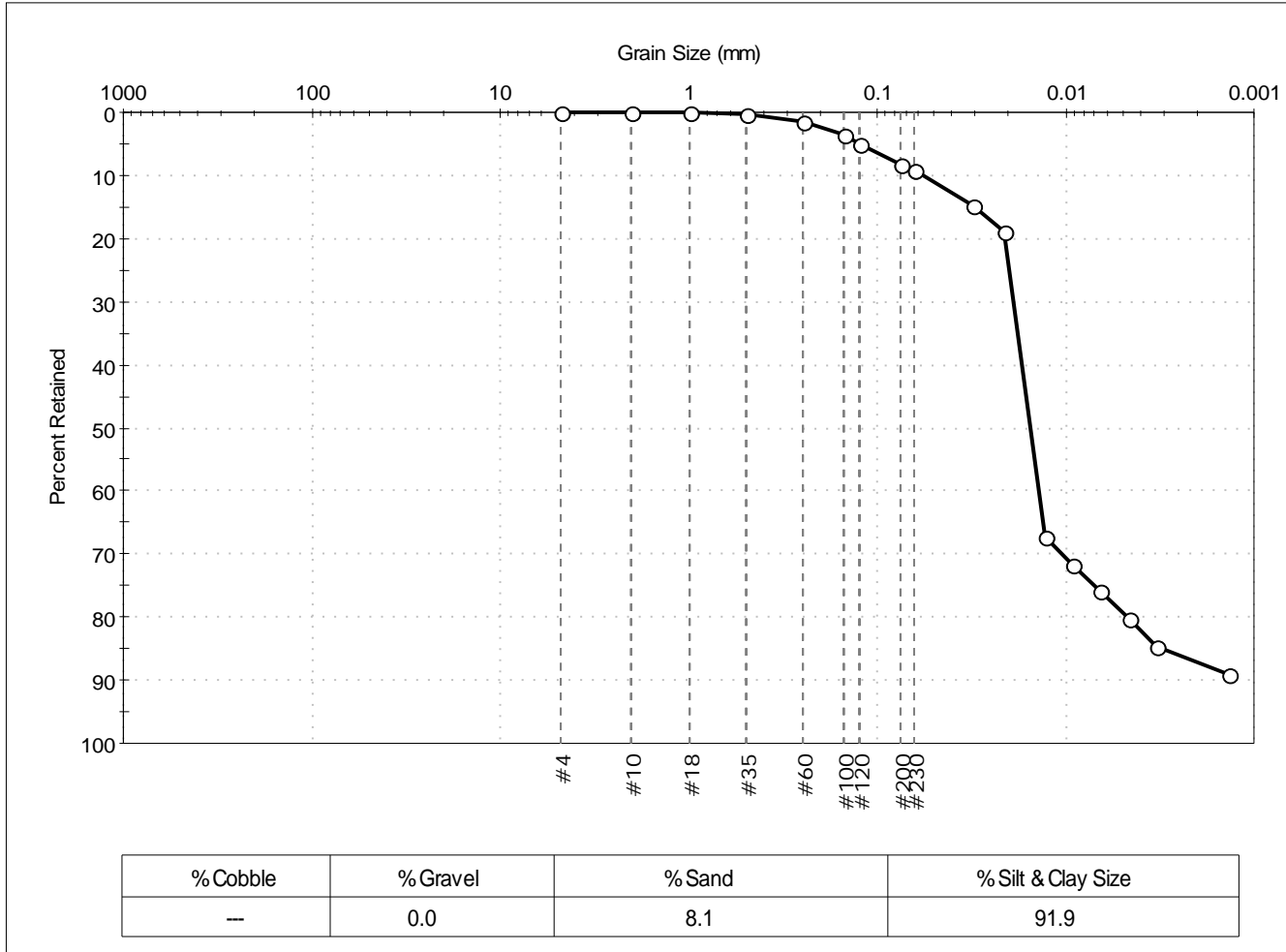
| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 235-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0036               | Test Date: 10/20/14         | Test Id: 309484                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0310             | 15           |               |          |
| ---        | 0.0210             | 19           |               |          |
| ---        | 0.0128             | 67           |               |          |
| ---        | 0.0091             | 72           |               |          |
| ---        | 0.0065             | 76           |               |          |
| ---        | 0.0046             | 80           |               |          |
| ---        | 0.0033             | 85           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0301 mm | D <sub>30</sub> = 0.0103 mm |
| D <sub>60</sub> = 0.0169 mm | D <sub>15</sub> = 0.0031 mm |
| D <sub>50</sub> = 0.0153 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

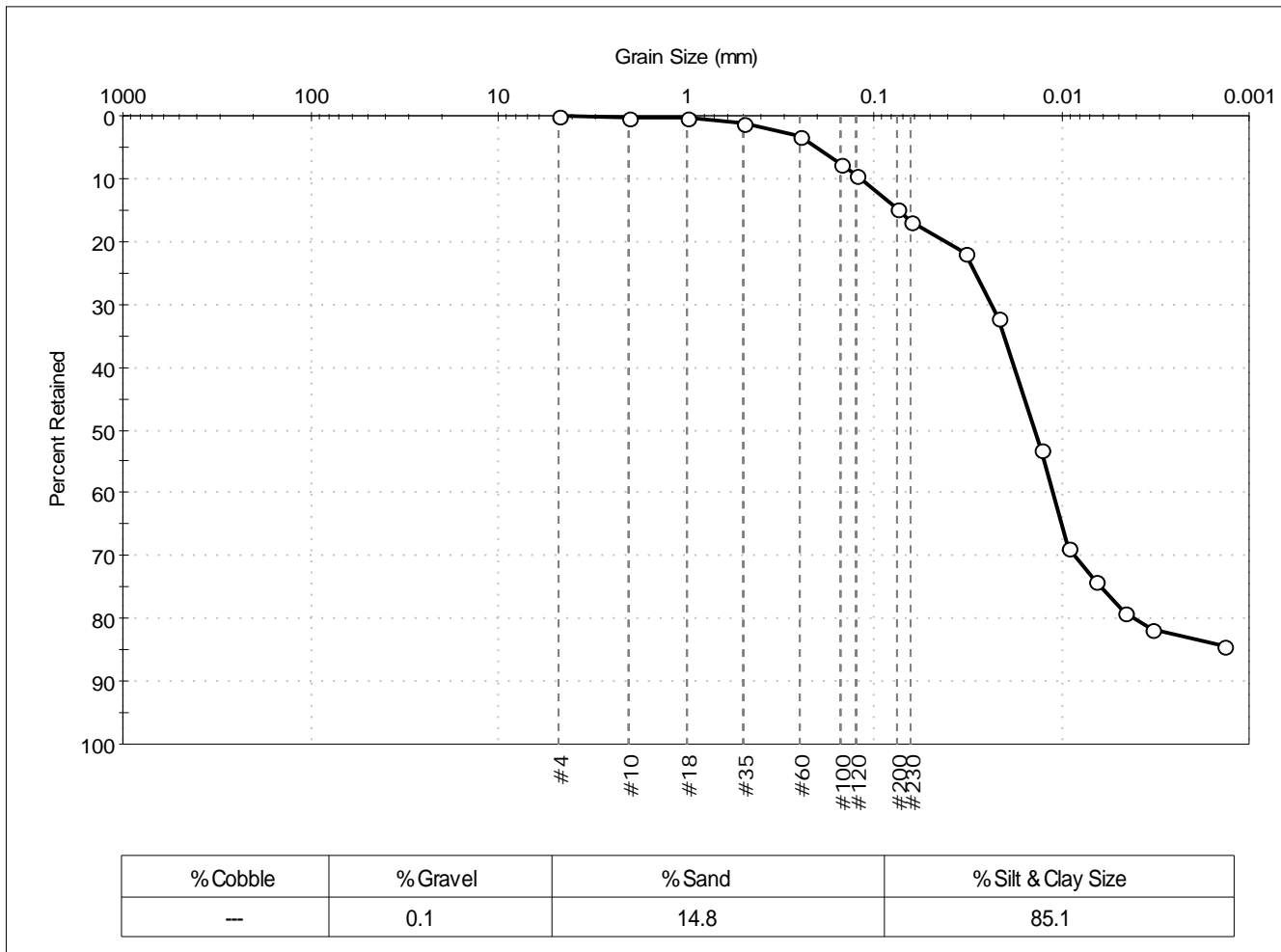
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 240-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0037                  | Test Date:   | 10/21/14   |
| Depth:              | ---                         | Test Id:     | 309485     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, very dark gray silt    |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 9            |               |          |
| #200       | 0.075              | 15           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0330             | 22           |               |          |
| ---        | 0.0217             | 32           |               |          |
| ---        | 0.0128             | 53           |               |          |
| ---        | 0.0092             | 69           |               |          |
| ---        | 0.0065             | 74           |               |          |
| ---        | 0.0046             | 79           |               |          |
| ---        | 0.0033             | 82           |               |          |
| ---        | 0.0014             | 84           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0739 mm | D <sub>30</sub> = 0.0084 mm |
| D <sub>60</sub> = 0.0178 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0139 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

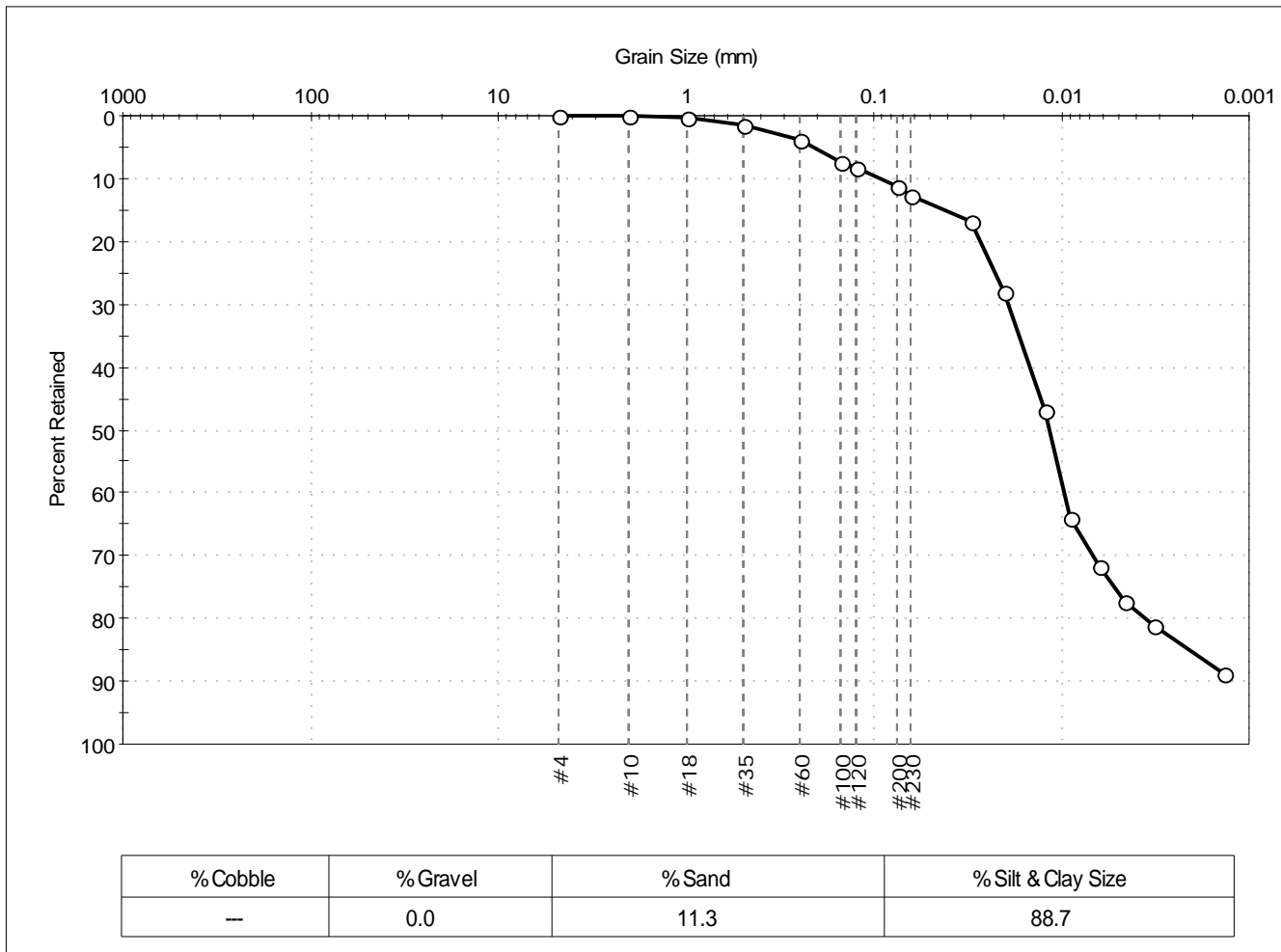
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 240-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0038               | Test Date: 10/23/14         | Test Id: 309486                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 13           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0305             | 17           |               |          |
| ---        | 0.0204             | 28           |               |          |
| ---        | 0.0122             | 47           |               |          |
| ---        | 0.0089             | 64           |               |          |
| ---        | 0.0063             | 72           |               |          |
| ---        | 0.0046             | 77           |               |          |
| ---        | 0.0033             | 81           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0413 mm | D <sub>30</sub> = 0.0068 mm |
| D <sub>60</sub> = 0.0147 mm | D <sub>15</sub> = 0.0021 mm |
| D <sub>50</sub> = 0.0115 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

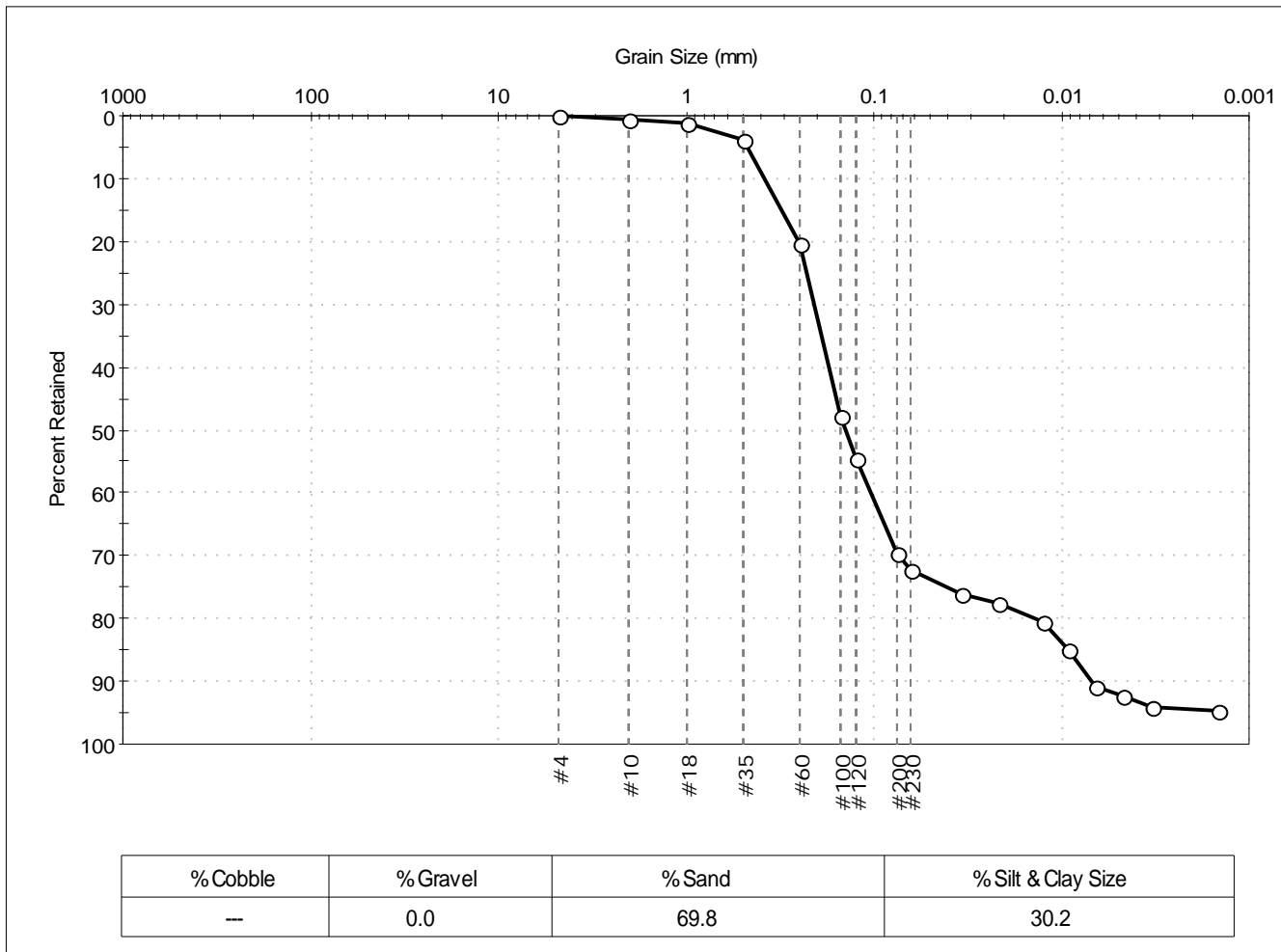
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                     | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 240-14LTM                | Sample Type: bag                                | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0039               | Test Date: 10/20/14                             | Depth: ---                | Test Id: 309487        |
| Test Comment: ---                   | Sample Description: Moist, dark gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 20           |               |          |
| #100       | 0.15               | 48           |               |          |
| #120       | 0.12               | 55           |               |          |
| #200       | 0.075              | 70           |               |          |
| #230       | 0.063              | 72           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 76           |               |          |
| ---        | 0.0218             | 78           |               |          |
| ---        | 0.0127             | 81           |               |          |
| ---        | 0.0091             | 85           |               |          |
| ---        | 0.0066             | 91           |               |          |
| ---        | 0.0047             | 92           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0015             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3121 mm | D <sub>30</sub> = 0.0738 mm |
| D <sub>60</sub> = 0.1735 mm | D <sub>15</sub> = 0.0092 mm |
| D <sub>50</sub> = 0.1417 mm | D <sub>10</sub> = 0.0069 mm |
| C <sub>u</sub> = 25.145     | C <sub>c</sub> = 4.550      |

| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

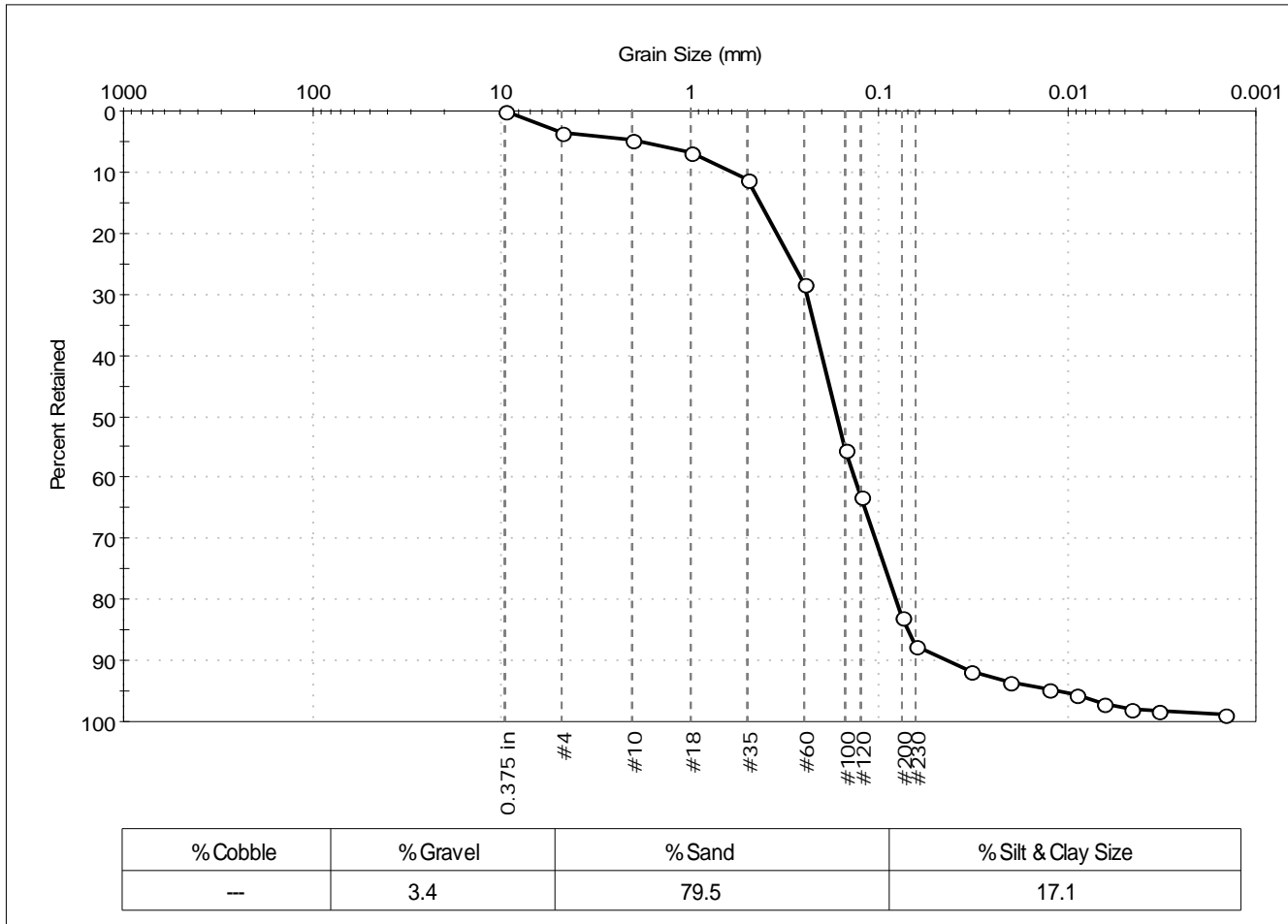
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                     |                               |              |            |
|---------------------|-------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute   |              |            |
| Project:            | New Bedford Harbor            |              |            |
| Location:           | New Bedford, MA               | Project No:  | GTX-302366 |
| Boring ID:          | 240-14LTM                     | Sample Type: | bag        |
| Sample ID:          | NBH14-0040                    | Test Date:   | 11/18/14   |
| Depth:              | ---                           | Test Id:     | 309488     |
| Test Comment:       | ---                           |              |            |
| Sample Description: | Wet, greenish gray silty sand |              |            |
| Sample Comment:     | ---                           |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 28           |               |          |
| #100       | 0.15               | 55           |               |          |
| #120       | 0.12               | 63           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 88           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 92           |               |          |
| ---        | 0.0201             | 93           |               |          |
| ---        | 0.0124             | 95           |               |          |
| ---        | 0.0089             | 96           |               |          |
| ---        | 0.0064             | 97           |               |          |
| ---        | 0.0046             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0015             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4299 mm | D <sub>30</sub> = 0.1048 mm |
| D <sub>60</sub> = 0.2003 mm | D <sub>15</sub> = 0.0694 mm |
| D <sub>50</sub> = 0.1660 mm | D <sub>10</sub> = 0.0428 mm |
| C <sub>u</sub> = 4.680      | C <sub>c</sub> = 1.281      |

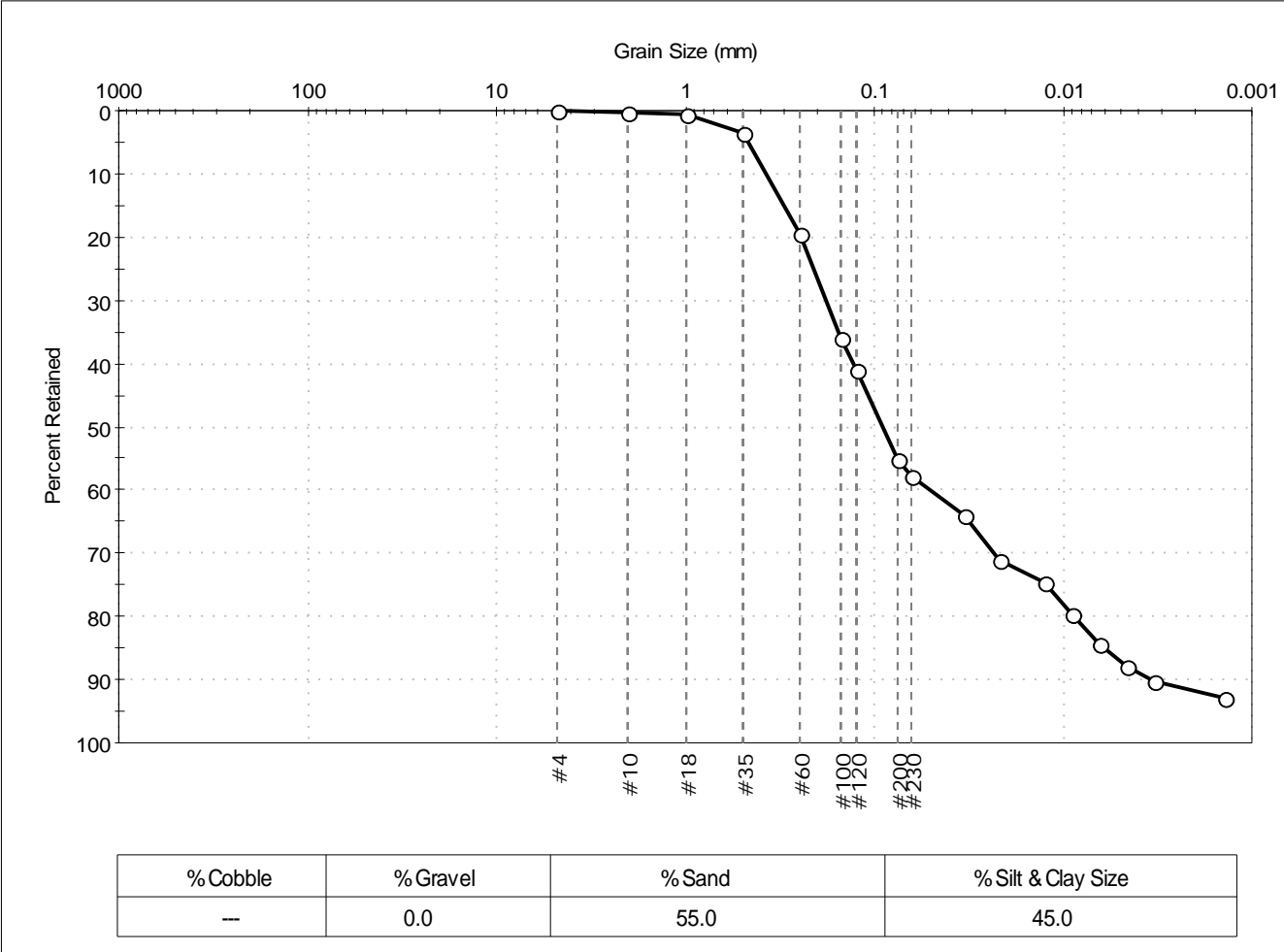
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 245-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0041               | Test Date: 10/21/14         | Test Id: 309489                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 19           |               |          |
| #100       | 0.15               | 36           |               |          |
| #120       | 0.12               | 41           |               |          |
| #200       | 0.075              | 55           |               |          |
| #230       | 0.063              | 58           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 64           |               |          |
| ---        | 0.0216             | 71           |               |          |
| ---        | 0.0126             | 75           |               |          |
| ---        | 0.0090             | 80           |               |          |
| ---        | 0.0064             | 84           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3023 mm | D <sub>30</sub> = 0.0231 mm |
| D <sub>60</sub> = 0.1297 mm | D <sub>15</sub> = 0.0060 mm |
| D <sub>50</sub> = 0.0901 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 38.147     | C <sub>c</sub> = 1.210      |

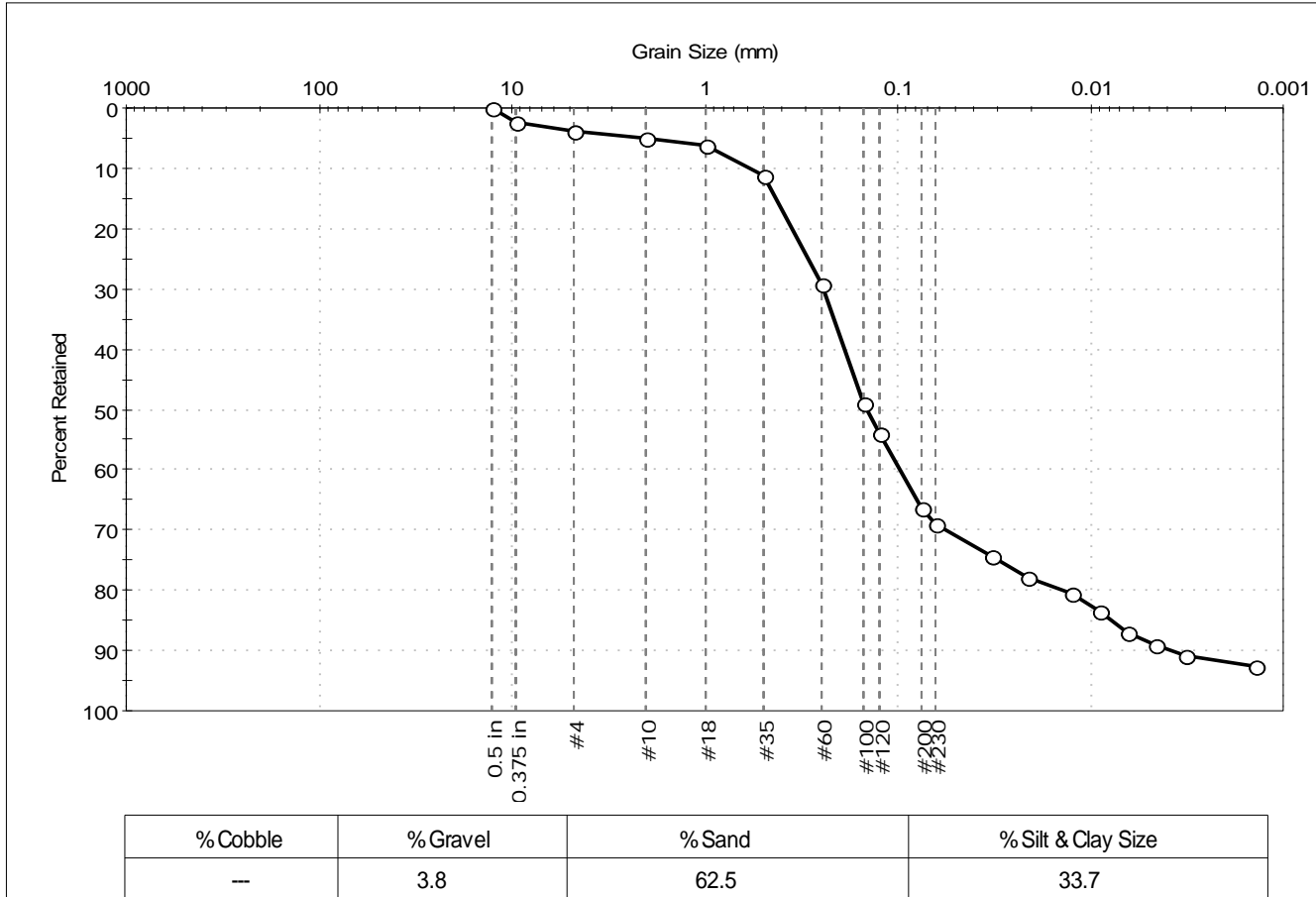
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                          | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 245-14LTM                | Sample Type: bag                                     | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0042               | Test Date: 10/15/14                                  | Depth: ---                | Test Id: 309490        |
| Test Comment: ---                   | Sample Description: Moist, very dark gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 29           |               |          |
| #100       | 0.15               | 49           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 66           |               |          |
| #230       | 0.063              | 69           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 74           |               |          |
| ---        | 0.0211             | 78           |               |          |
| ---        | 0.0127             | 81           |               |          |
| ---        | 0.0090             | 83           |               |          |
| ---        | 0.0065             | 87           |               |          |
| ---        | 0.0046             | 89           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 93           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4319 mm | D <sub>30</sub> = 0.0555 mm |
| D <sub>60</sub> = 0.1891 mm | D <sub>15</sub> = 0.0078 mm |
| D <sub>50</sub> = 0.1445 mm | D <sub>10</sub> = 0.0038 mm |
| C <sub>u</sub> = 49.763     | C <sub>c</sub> = 4.287      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

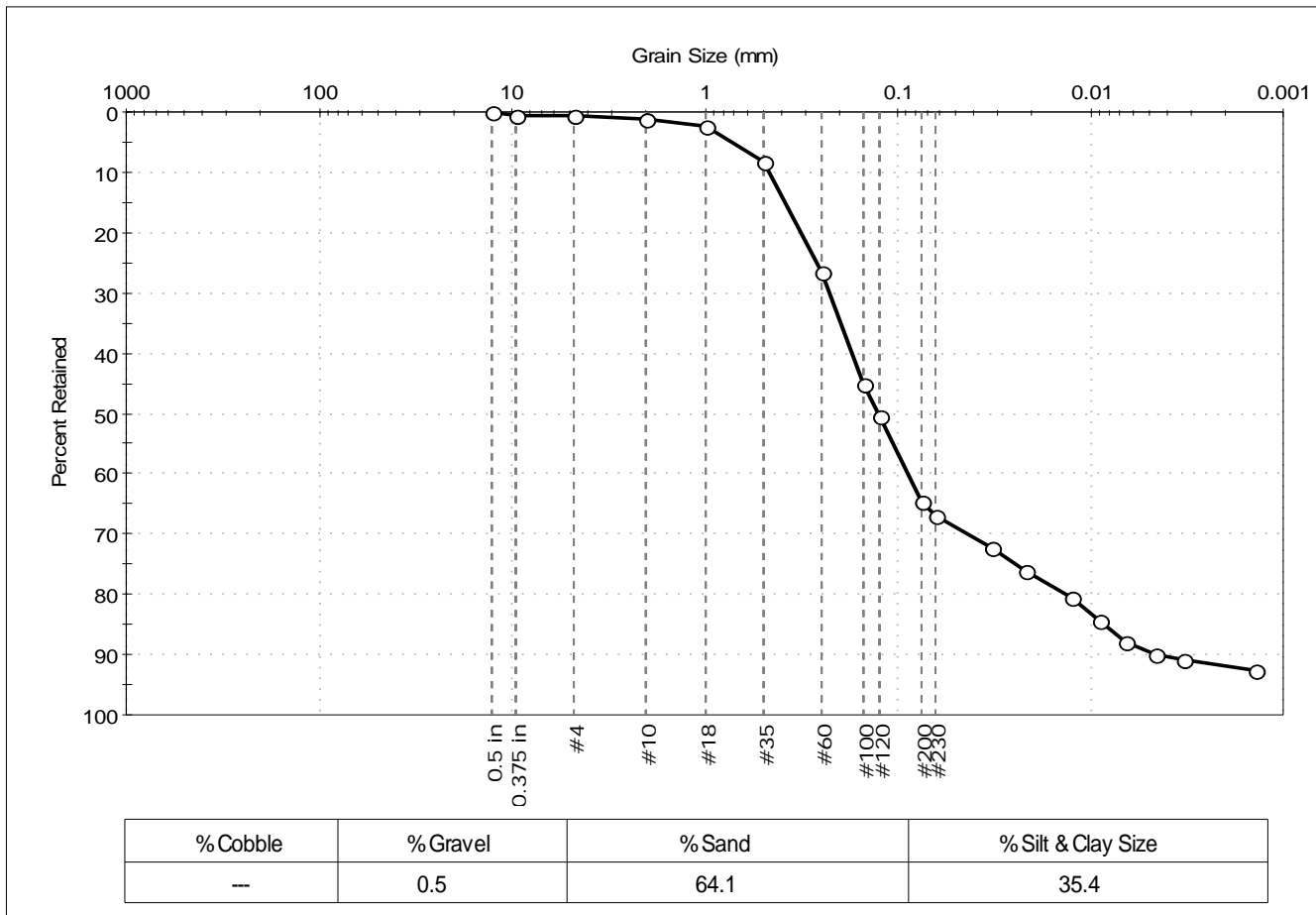
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                     |                                  |              |            |
|---------------------|----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute      |              |            |
| Project:            | New Bedford Harbor               |              |            |
| Location:           | New Bedford, MA                  | Project No:  | GTX-302366 |
| Boring ID:          | 245-14LTM                        | Sample Type: | bag        |
| Sample ID:          | NBH14-0043                       | Test Date:   | 11/18/14   |
| Depth:              | ---                              | Test Id:     | 309491     |
| Test Comment:       | ---                              |              |            |
| Sample Description: | Moist, very dark gray silty sand |              |            |
| Sample Comment:     | ---                              |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 27           |               |          |
| #100       | 0.15               | 45           |               |          |
| #120       | 0.12               | 50           |               |          |
| #200       | 0.075              | 65           |               |          |
| #230       | 0.063              | 67           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 72           |               |          |
| ---        | 0.0217             | 76           |               |          |
| ---        | 0.0127             | 81           |               |          |
| ---        | 0.0091             | 84           |               |          |
| ---        | 0.0065             | 88           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 93           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3889 mm | D <sub>30</sub> = 0.0439 mm |
| D <sub>60</sub> = 0.1731 mm | D <sub>15</sub> = 0.0085 mm |
| D <sub>50</sub> = 0.1264 mm | D <sub>10</sub> = 0.0044 mm |
| C <sub>u</sub> = 39.341     | C <sub>c</sub> = 2.530      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

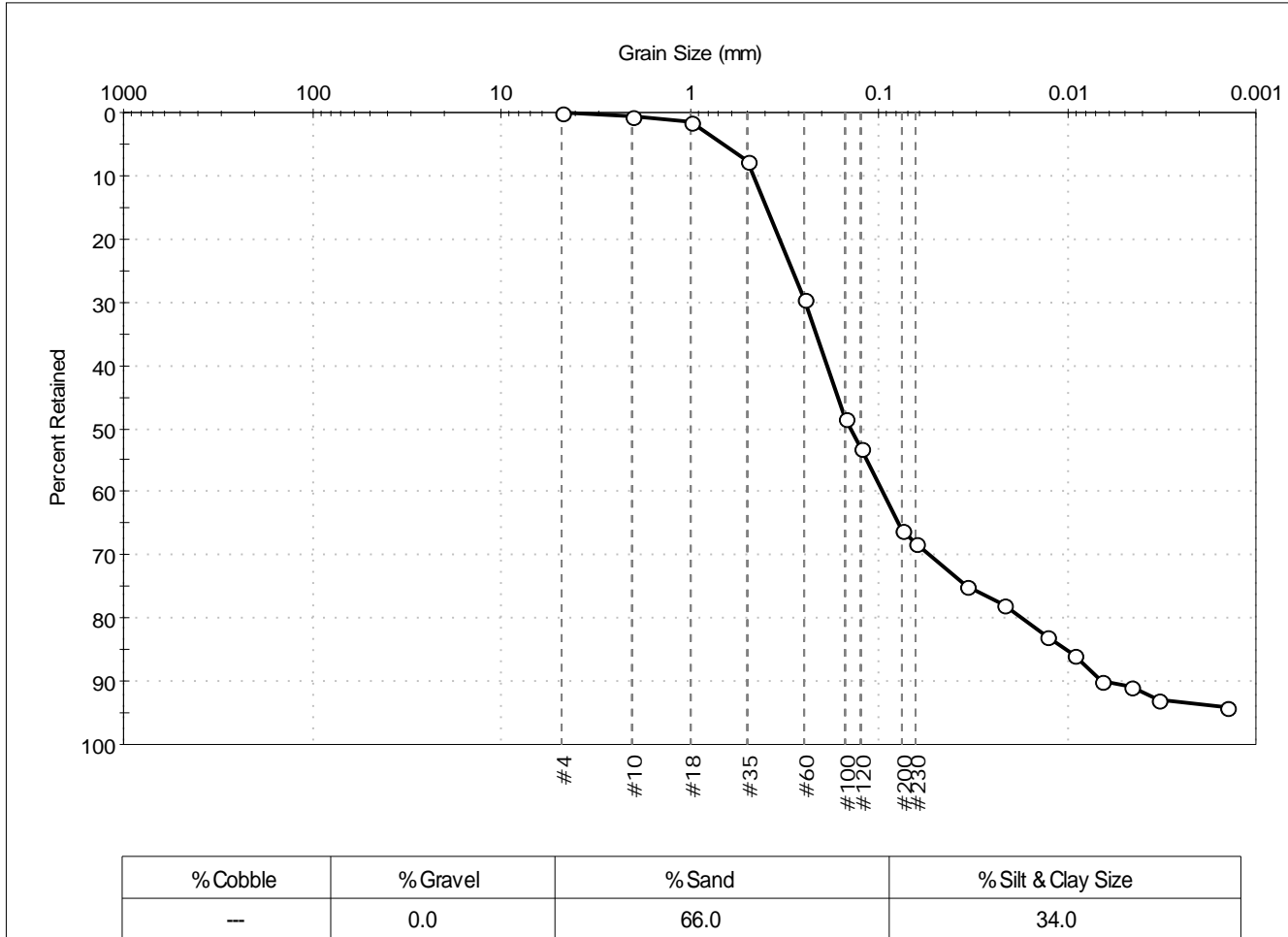
Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 245-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0044               | Test Date: 11/19/14         | Test Id: 309492                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 48           |               |          |
| #120       | 0.12               | 53           |               |          |
| #200       | 0.075              | 66           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 75           |               |          |
| ---        | 0.0216             | 78           |               |          |
| ---        | 0.0128             | 83           |               |          |
| ---        | 0.0091             | 86           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0046             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 94           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3963 mm | D <sub>30</sub> = 0.0531 mm |
| D <sub>60</sub> = 0.1881 mm | D <sub>15</sub> = 0.0101 mm |
| D <sub>50</sub> = 0.1406 mm | D <sub>10</sub> = 0.0064 mm |
| C <sub>u</sub> = 29.391     | C <sub>c</sub> = 2.342      |

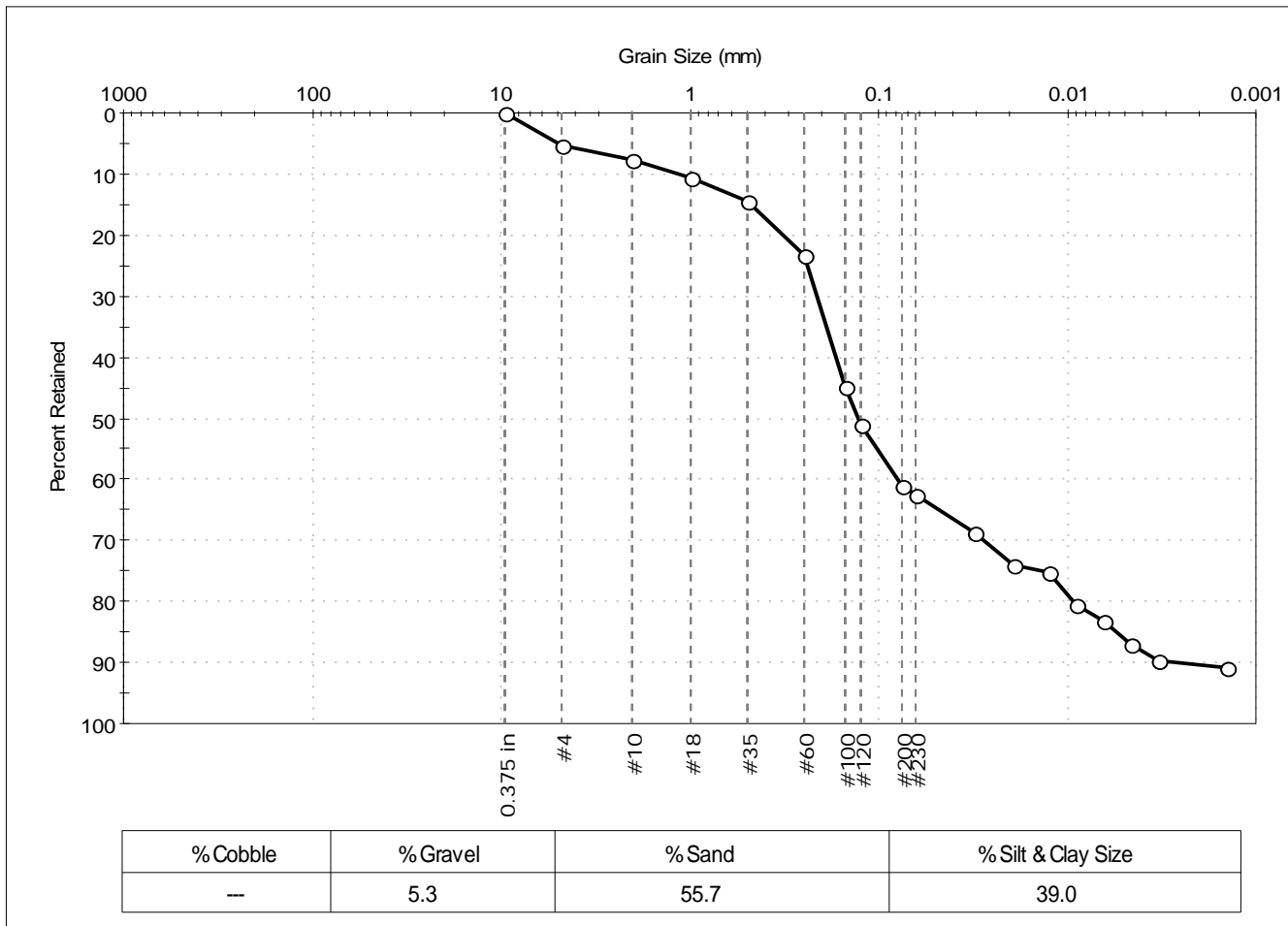
| Classification |                                   |
|----------------|-----------------------------------|
| ASTM           | N/A                               |
| AASHTO         | Silty Gravel and Sand (A-2-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #200 Sieve               |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 146-14LTM                               | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0045                              | Test Date: 11/03/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 309493             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet, very dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 45           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 61           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0310             | 69           |               |          |
| ---        | 0.0192             | 74           |               |          |
| ---        | 0.0126             | 75           |               |          |
| ---        | 0.0091             | 81           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4757 mm | D <sub>30</sub> = 0.0279 mm |
| D <sub>60</sub> = 0.1678 mm | D <sub>15</sub> = 0.0055 mm |
| D <sub>50</sub> = 0.1286 mm | D <sub>10</sub> = 0.0026 mm |
| C <sub>u</sub> = 64.538     | C <sub>c</sub> = 1.784      |

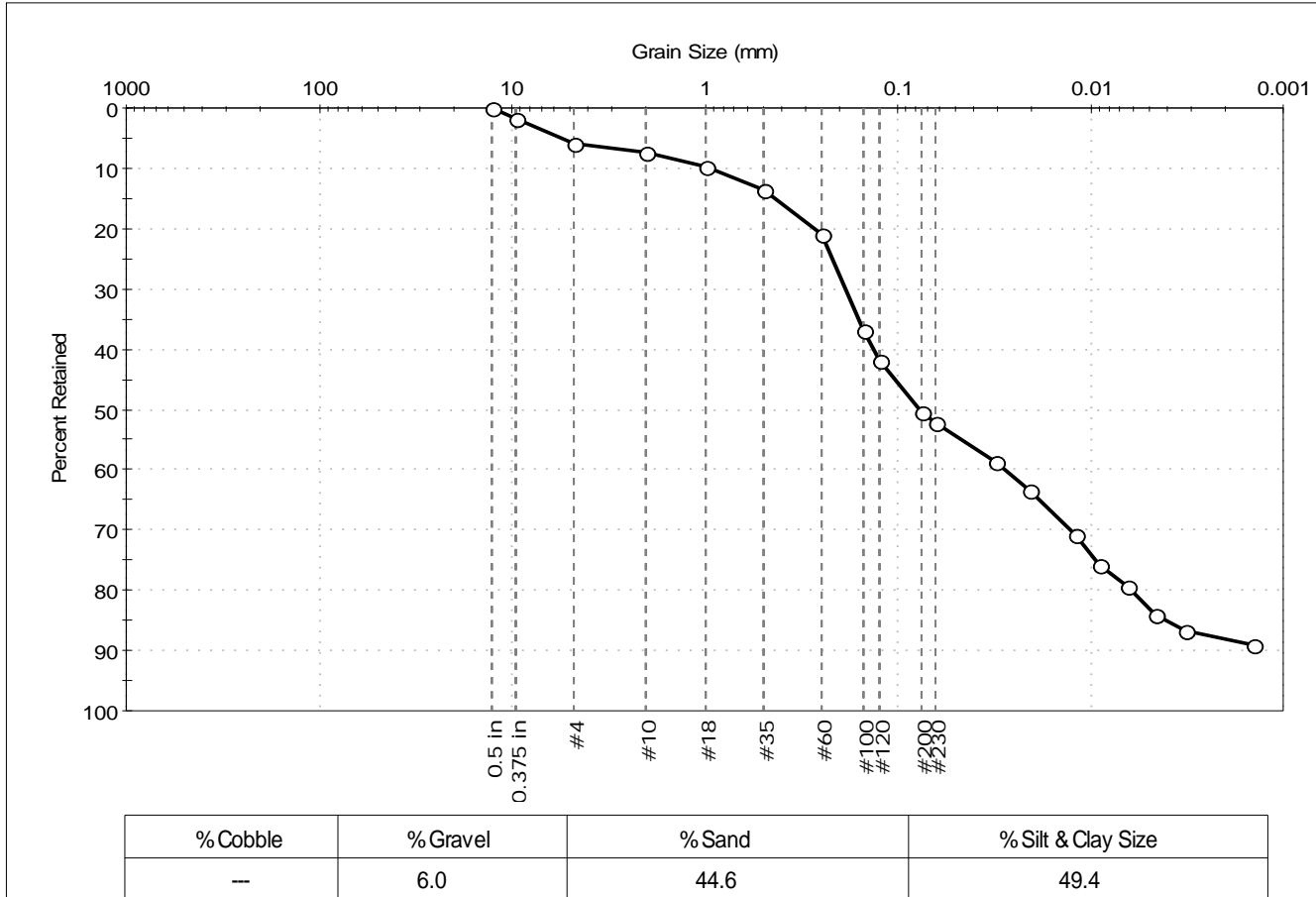
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ROUNDED         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 146-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0046                     | Test Date:   | 10/21/14   |
| Depth:              | ---                            | Test Id:     | 309494     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 21           |               |          |
| #100       | 0.15               | 37           |               |          |
| #120       | 0.12               | 42           |               |          |
| #200       | 0.075              | 51           |               |          |
| #230       | 0.063              | 52           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 59           |               |          |
| ---        | 0.0206             | 64           |               |          |
| ---        | 0.0120             | 71           |               |          |
| ---        | 0.0090             | 76           |               |          |
| ---        | 0.0064             | 79           |               |          |
| ---        | 0.0046             | 84           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0014             | 89           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4317 mm | D <sub>30</sub> = 0.0127 mm |
| D <sub>60</sub> = 0.1337 mm | D <sub>15</sub> = 0.0041 mm |
| D <sub>50</sub> = 0.0774 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

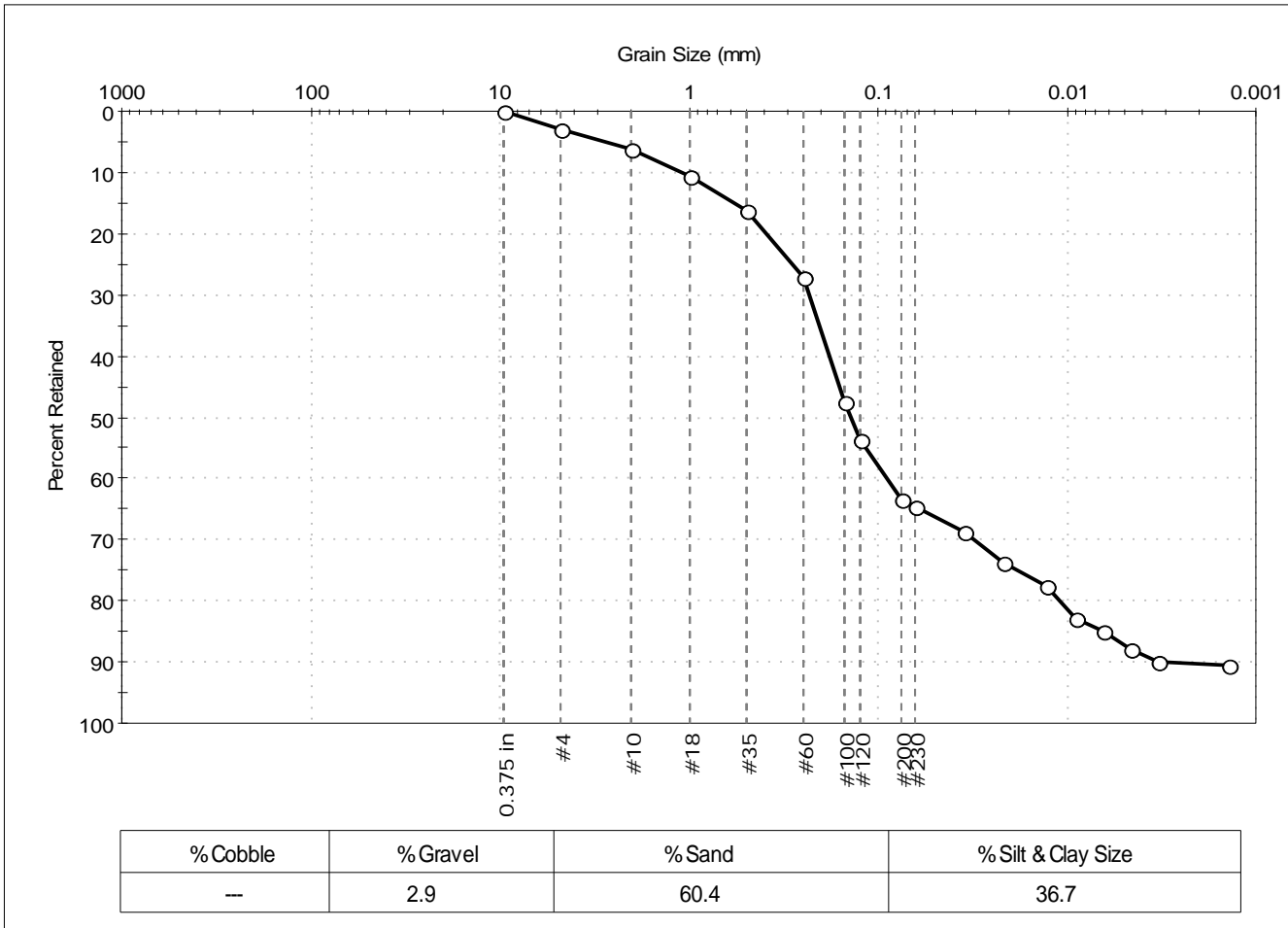
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 146-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0047  
 Test Date: 10/20/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 309495  
 Test Comment: ---  
 Sample Description: Wet, very dark gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 27           |               |          |
| #100       | 0.15               | 48           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 63           |               |          |
| #230       | 0.063              | 65           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0349             | 69           |               |          |
| ---        | 0.0219             | 74           |               |          |
| ---        | 0.0128             | 78           |               |          |
| ---        | 0.0091             | 83           |               |          |
| ---        | 0.0064             | 85           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 91           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5829 mm | D <sub>30</sub> = 0.0307 mm |
| D <sub>60</sub> = 0.1811 mm | D <sub>15</sub> = 0.0063 mm |
| D <sub>50</sub> = 0.1393 mm | D <sub>10</sub> = 0.0028 mm |
| C <sub>u</sub> = 64.679     | C <sub>c</sub> = 1.859      |

**Classification**

|                              |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

**Sample/Test Description**

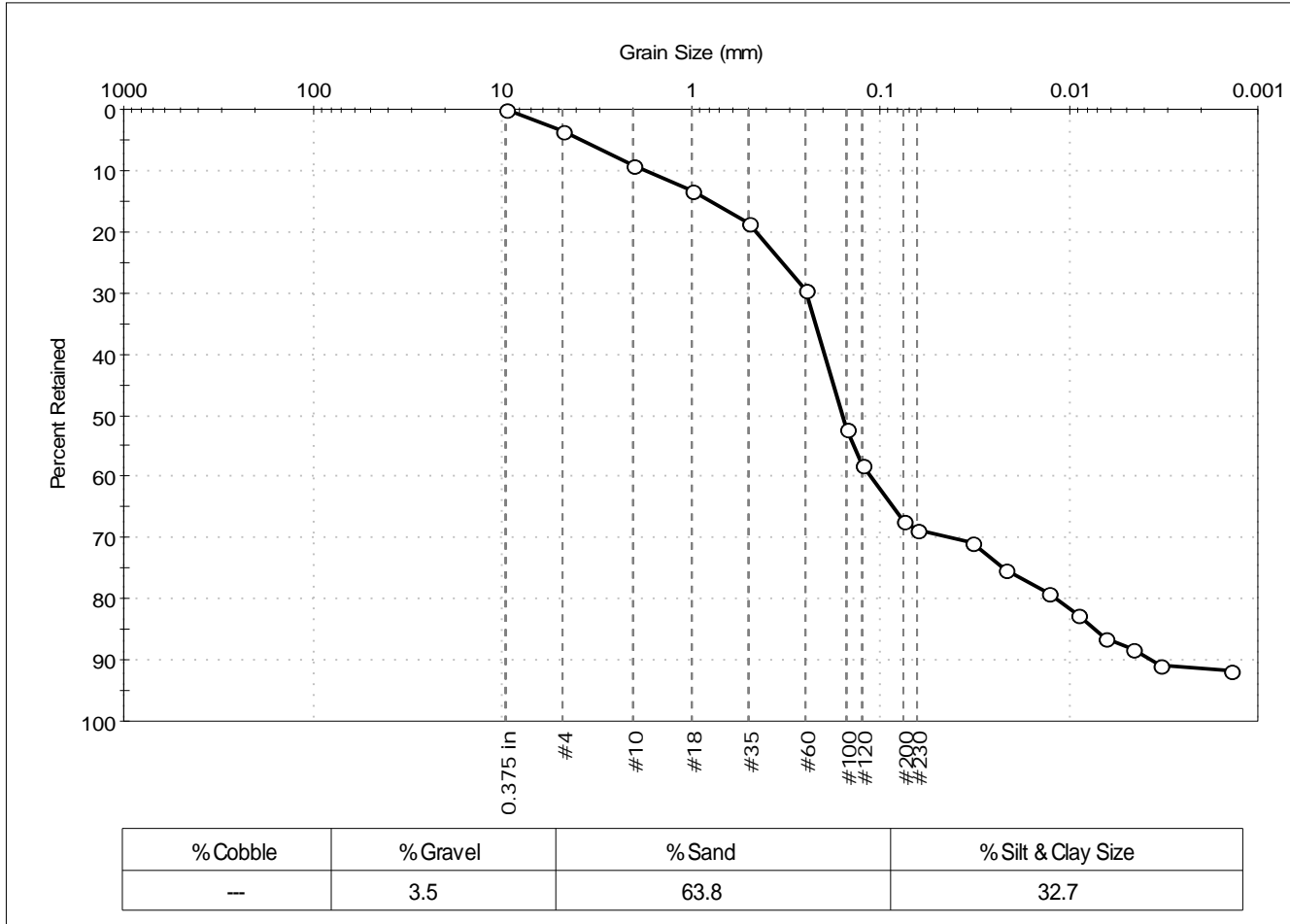
Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve





|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute                | Project No: GTX-302366 |
| Project: New Bedford Harbor                        |                        |
| Location: New Bedford, MA                          |                        |
| Boring ID: 146-14LTM                               | Sample Type: bag       |
| Sample ID: NBH14-0048                              | Test Date: 10/21/14    |
| Depth: ---   | Test Id: 309496        |
| Test Comment: ---                                  | Tested By: jbr         |
| Sample Description: Wet, very dark gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 52           |               |          |
| #120       | 0.12               | 58           |               |          |
| #200       | 0.075              | 67           |               |          |
| #230       | 0.063              | 69           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 71           |               |          |
| ---        | 0.0216             | 75           |               |          |
| ---        | 0.0127             | 79           |               |          |
| ---        | 0.0091             | 83           |               |          |
| ---        | 0.0064             | 86           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7890 mm | D <sub>30</sub> = 0.0414 mm |
| D <sub>60</sub> = 0.1976 mm | D <sub>15</sub> = 0.0073 mm |
| D <sub>50</sub> = 0.1575 mm | D <sub>10</sub> = 0.0036 mm |
| C <sub>u</sub> = 54.889     | C <sub>c</sub> = 2.409      |

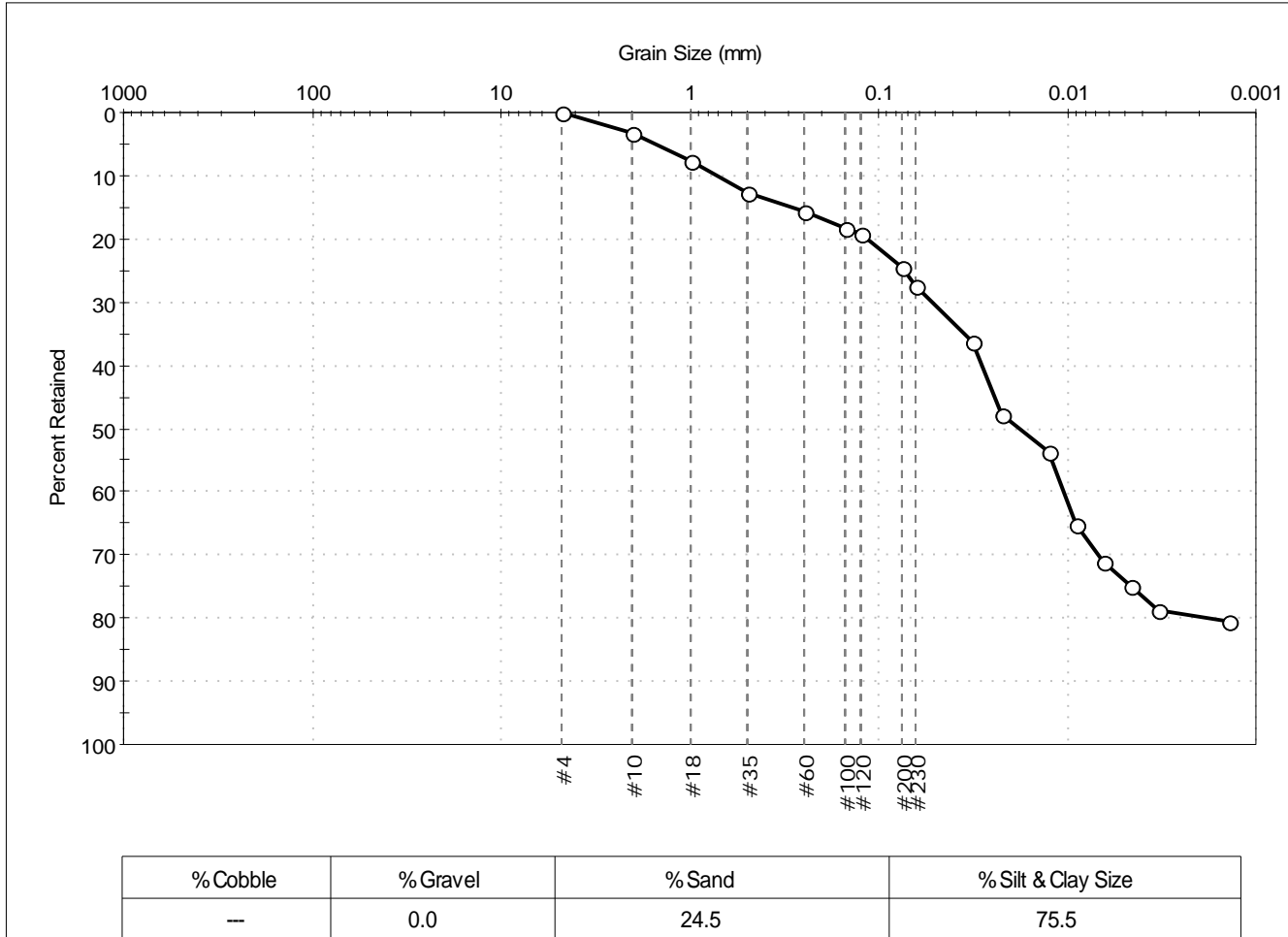
| <u>Classification</u>                    |     |
|--|-----|
| ASTM                                     | N/A |
| AASHTO Silty Gravel and Sand (A-2-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ROUNDED         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                    |              |            |
|---------------------|------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute        |              |            |
| Project:            | New Bedford Harbor                 |              |            |
| Location:           | New Bedford, MA                    | Project No:  | GTX-302366 |
| Boring ID:          | 140-14LTM                          | Sample Type: | bag        |
| Sample ID:          | NBH14-0049                         | Test Date:   | 10/23/14   |
| Depth:              | ---                                | Test Id:     | 309497     |
| Test Comment:       | ---                                |              |            |
| Sample Description: | Wet, very dark gray silt with sand |              |            |
| Sample Comment:     | ---                                |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 18           |               |          |
| #120       | 0.12               | 19           |               |          |
| #200       | 0.075              | 25           |               |          |
| #230       | 0.063              | 27           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 36           |               |          |
| ---        | 0.0220             | 48           |               |          |
| ---        | 0.0127             | 54           |               |          |
| ---        | 0.0091             | 65           |               |          |
| ---        | 0.0065             | 71           |               |          |
| ---        | 0.0046             | 75           |               |          |
| ---        | 0.0033             | 79           |               |          |
| ---        | 0.0014             | 81           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2993 mm | D <sub>30</sub> = 0.0069 mm |
| D <sub>60</sub> = 0.0280 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0179 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

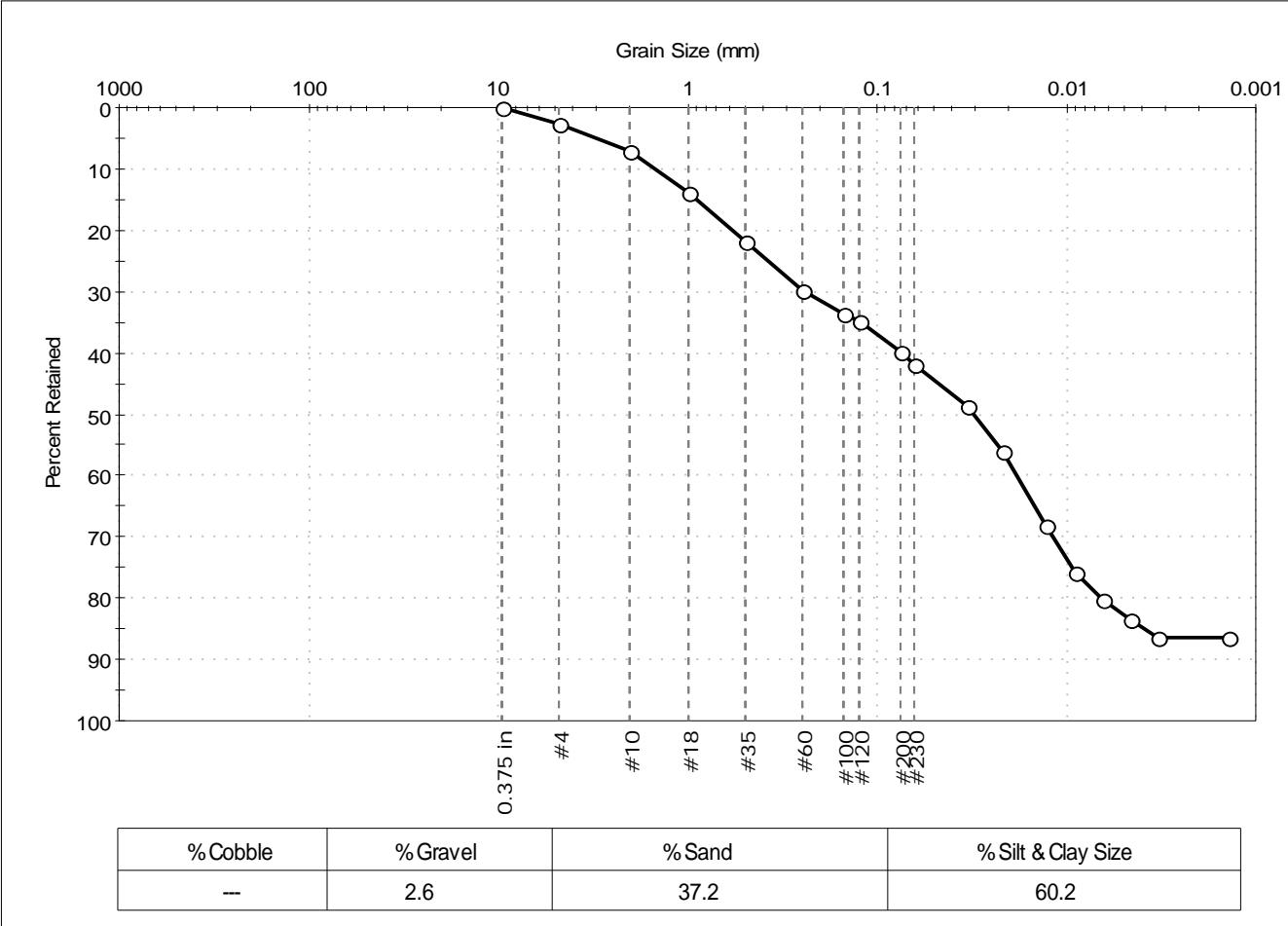
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 140-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0050               | Test Date: 10/14/14         | Test Id: 309498                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 22           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 34           |               |          |
| #120       | 0.12               | 35           |               |          |
| #200       | 0.075              | 40           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 49           |               |          |
| ---        | 0.0218             | 56           |               |          |
| ---        | 0.0128             | 68           |               |          |
| ---        | 0.0091             | 76           |               |          |
| ---        | 0.0065             | 80           |               |          |
| ---        | 0.0046             | 83           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.9074 mm | D <sub>30</sub> = 0.0118 mm |
| D <sub>60</sub> = 0.0735 mm | D <sub>15</sub> = 0.0038 mm |
| D <sub>50</sub> = 0.0310 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

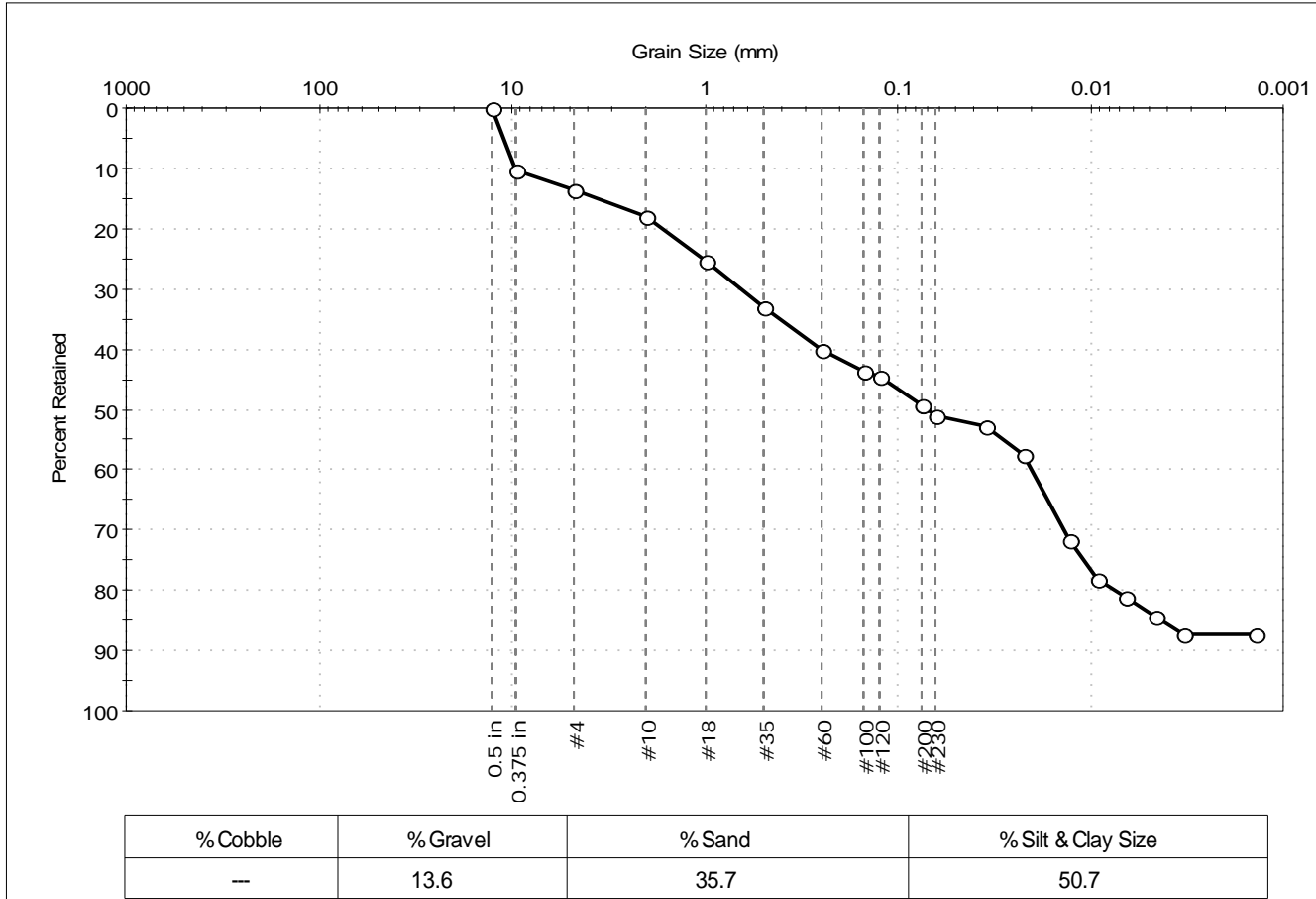
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 140-14LTM                               | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0050DUP                           | Test Date: 10/14/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 309499             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet, very dark gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 10           |               |          |
| #4         | 4.75               | 14           |               |          |
| #10        | 2.00               | 18           |               |          |
| #18        | 1.00               | 26           |               |          |
| #35        | 0.50               | 33           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 44           |               |          |
| #120       | 0.12               | 45           |               |          |
| #200       | 0.075              | 49           |               |          |
| #230       | 0.063              | 51           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0350             | 53           |               |          |
| ---        | 0.0220             | 58           |               |          |
| ---        | 0.0129             | 72           |               |          |
| ---        | 0.0092             | 78           |               |          |
| ---        | 0.0065             | 81           |               |          |
| ---        | 0.0047             | 84           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.6533 mm | D <sub>30</sub> = 0.0138 mm |
| D <sub>60</sub> = 0.2496 mm | D <sub>15</sub> = 0.0043 mm |
| D <sub>50</sub> = 0.0699 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

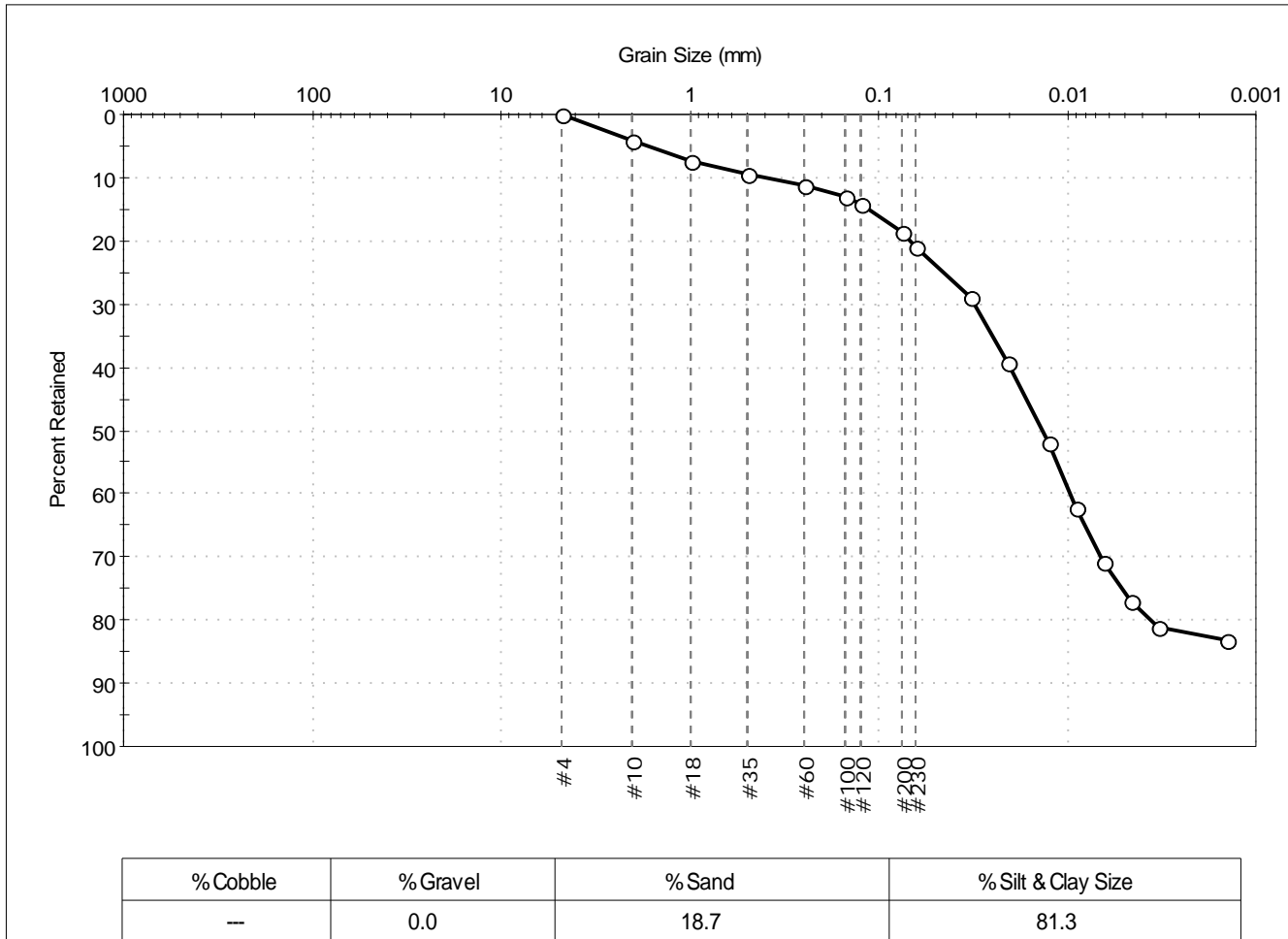
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 140-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0051               | Test Date: 10/14/14         | Test Id: 309500  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 13           |               |          |
| #120       | 0.12               | 14           |               |          |
| #200       | 0.075              | 19           |               |          |
| #230       | 0.063              | 21           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 29           |               |          |
| ---        | 0.0206             | 39           |               |          |
| ---        | 0.0124             | 52           |               |          |
| ---        | 0.0090             | 62           |               |          |
| ---        | 0.0065             | 71           |               |          |
| ---        | 0.0046             | 77           |               |          |
| ---        | 0.0033             | 81           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1141 mm | D <sub>30</sub> = 0.0066 mm |
| D <sub>60</sub> = 0.0200 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0134 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

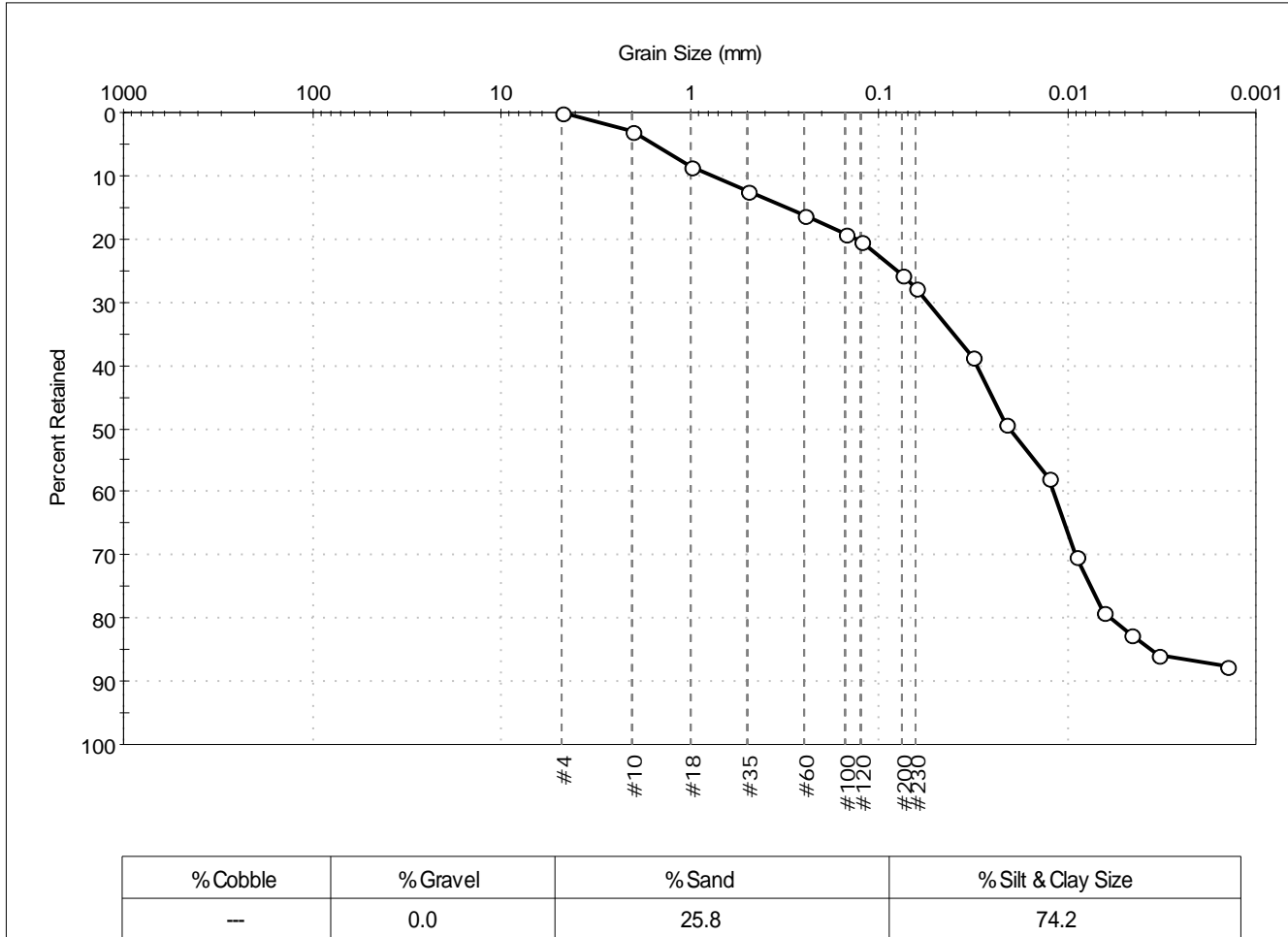
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 140-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0052               | Test Date: 10/14/14         | Test Id: 309501  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 19           |               |          |
| #120       | 0.12               | 20           |               |          |
| #200       | 0.075              | 26           |               |          |
| #230       | 0.063              | 28           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0321             | 39           |               |          |
| ---        | 0.0211             | 49           |               |          |
| ---        | 0.0125             | 58           |               |          |
| ---        | 0.0091             | 70           |               |          |
| ---        | 0.0065             | 79           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 88           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3091 mm | D <sub>30</sub> = 0.0091 mm |
| D <sub>60</sub> = 0.0303 mm | D <sub>15</sub> = 0.0036 mm |
| D <sub>50</sub> = 0.0200 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

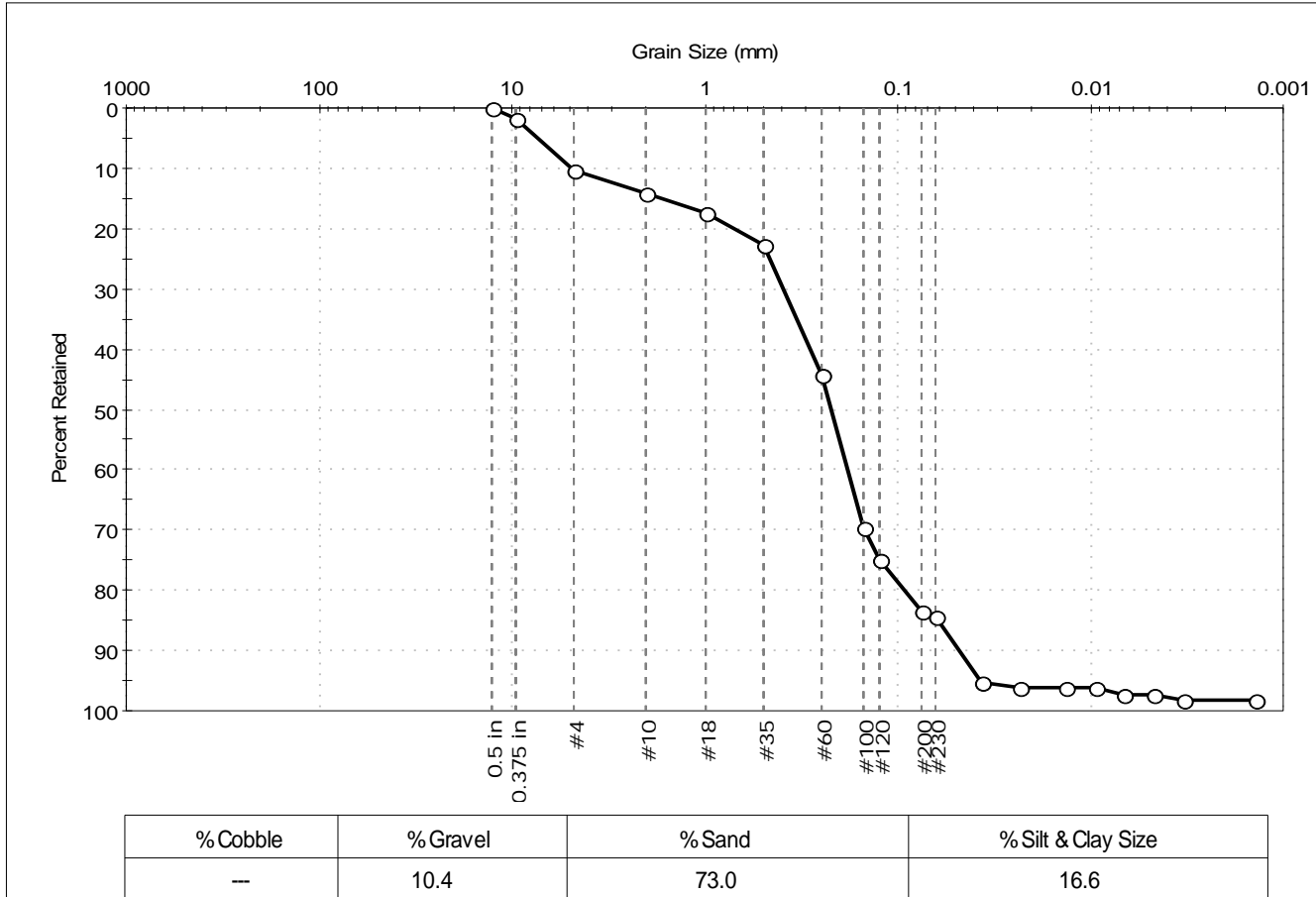
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                        | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 202-14LTM                | Sample Type: bag                                   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0053               | Test Date: 10/24/14                                | Depth: ---                | Test Id: 309502        |
| Test Comment: ---                   | Sample Description: Wet, very dark gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 10           |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 17           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 44           |               |          |
| #100       | 0.15               | 70           |               |          |
| #120       | 0.12               | 75           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 84           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0365             | 95           |               |          |
| ---        | 0.0232             | 96           |               |          |
| ---        | 0.0134             | 96           |               |          |
| ---        | 0.0094             | 96           |               |          |
| ---        | 0.0067             | 97           |               |          |
| ---        | 0.0047             | 97           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0014             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.6475 mm | D <sub>30</sub> = 0.1476 mm |
| D <sub>60</sub> = 0.2870 mm | D <sub>15</sub> = 0.0613 mm |
| D <sub>50</sub> = 0.2227 mm | D <sub>10</sub> = 0.0478 mm |
| C <sub>u</sub> = 6.004      | C <sub>c</sub> = 1.588      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

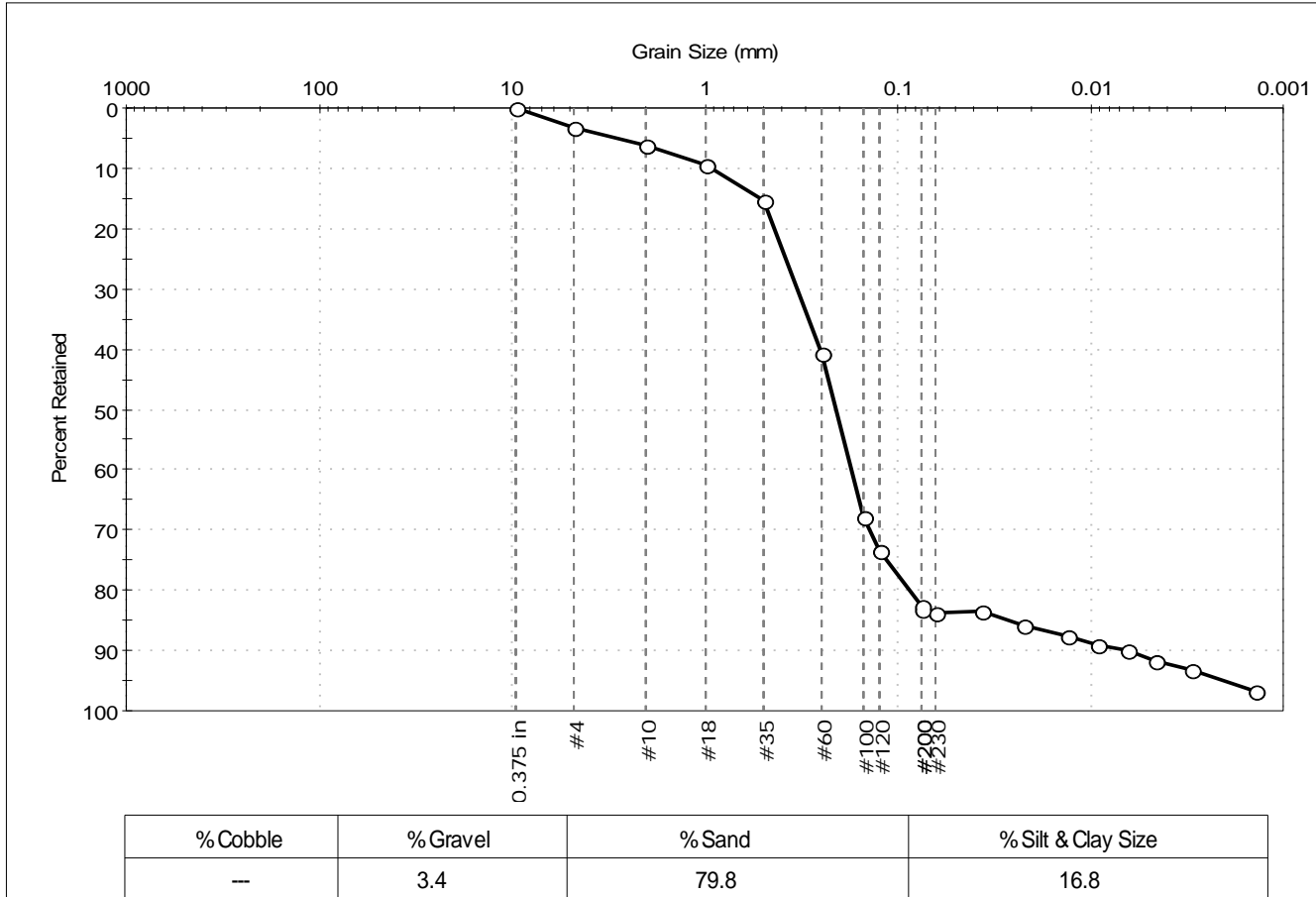
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 202-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0054               | Test Date: 10/20/14         | Test Id: 309503                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: wet, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 41           |               |          |
| #100       | 0.15               | 68           |               |          |
| #120       | 0.12               | 74           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 84           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 83           |               |          |
| ---        | 0.0222             | 86           |               |          |
| ---        | 0.0130             | 88           |               |          |
| ---        | 0.0093             | 89           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0030             | 93           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5178 mm | D <sub>30</sub> = 0.1400 mm |
| D <sub>60</sub> = 0.2540 mm | D <sub>15</sub> = 0.0264 mm |
| D <sub>50</sub> = 0.2096 mm | D <sub>10</sub> = 0.0066 mm |
| C <sub>u</sub> = 38.485     | C <sub>c</sub> = 11.692     |

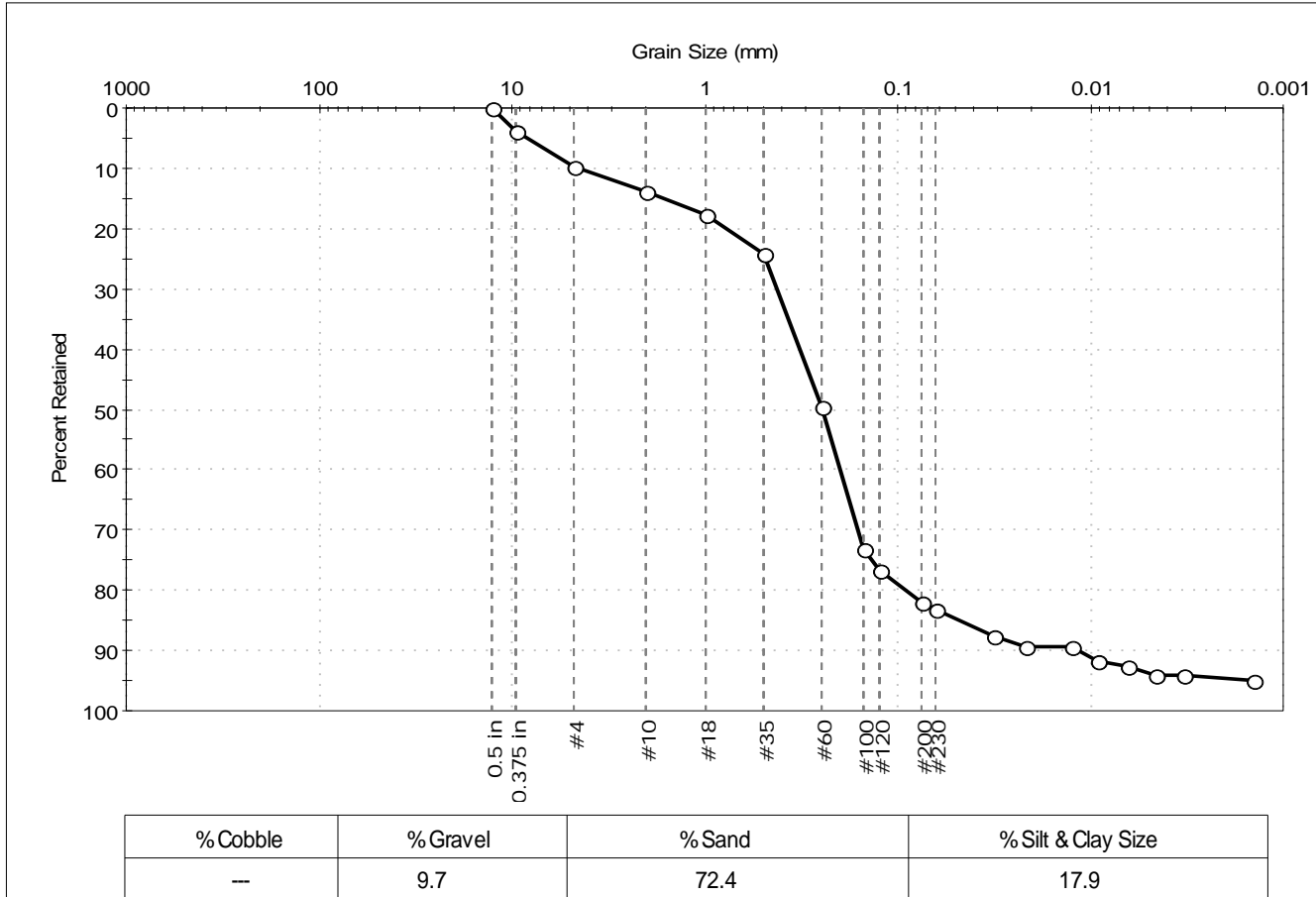
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ROUNDED         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 202-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0055                     | Test Date:   | 10/21/14   |
| Depth:              | ---                            | Test Id:     | 309504     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 10           |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 18           |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 50           |               |          |
| #100       | 0.15               | 73           |               |          |
| #120       | 0.12               | 77           |               |          |
| #200       | 0.075              | 82           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 88           |               |          |
| ---        | 0.0217             | 89           |               |          |
| ---        | 0.0127             | 89           |               |          |
| ---        | 0.0092             | 92           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.6662 mm | D <sub>30</sub> = 0.1606 mm |
| D <sub>60</sub> = 0.3243 mm | D <sub>15</sub> = 0.0470 mm |
| D <sub>50</sub> = 0.2476 mm | D <sub>10</sub> = 0.0115 mm |
| C <sub>u</sub> = 28.200     | C <sub>c</sub> = 6.916      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

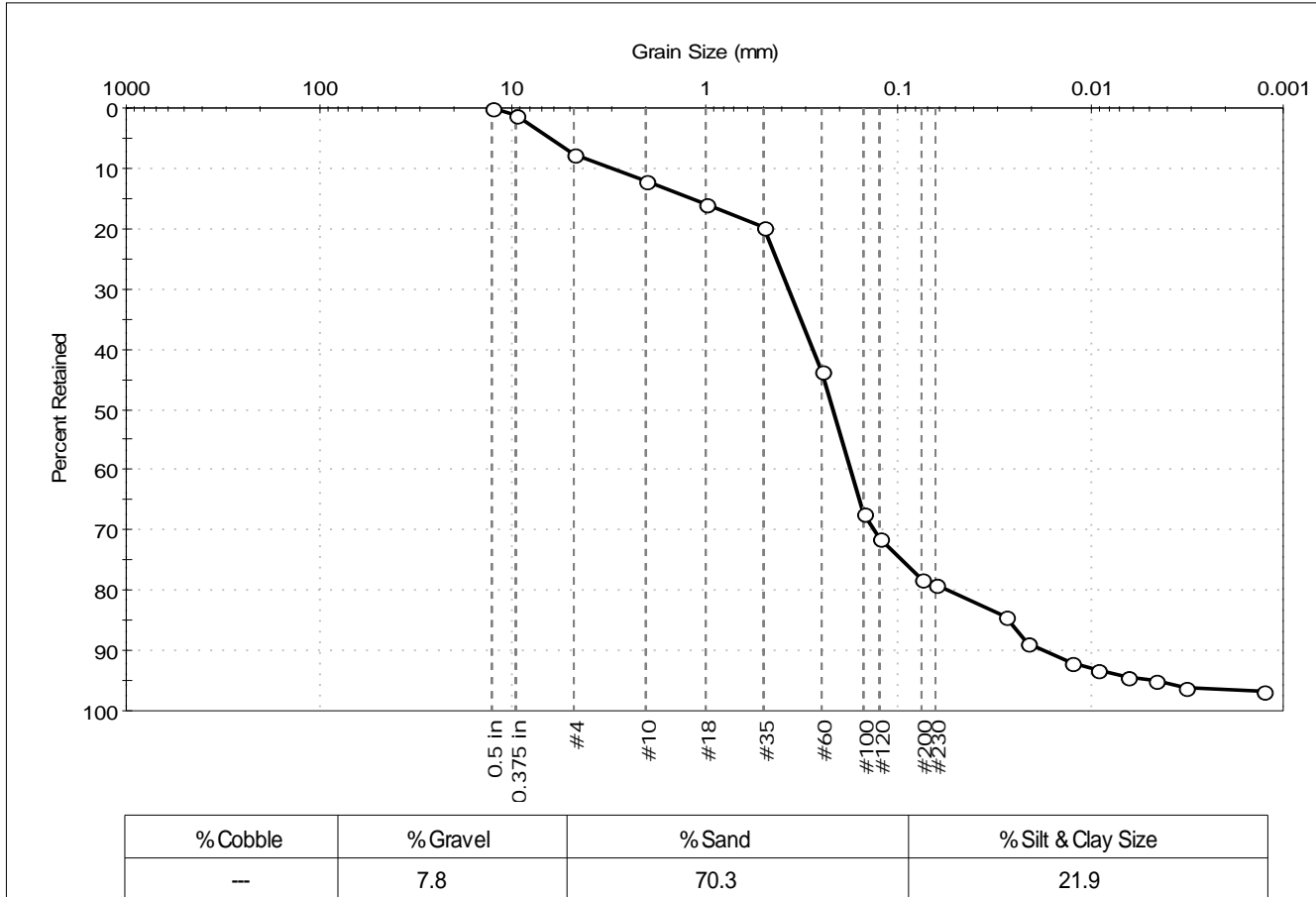
Separation of Sample: #230 Sieve





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 202-14LTM                          | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0056                         | Test Date: 10/23/14         | Checked By: jdt           |                        |
| Depth: ---                                    | Test Id: 309505             |                           |                        |
| Test Comment: ---                             |                             |                           |                        |
| Sample Description: Wet, dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                           |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 12           |               |          |
| #18        | 1.00               | 16           |               |          |
| #35        | 0.50               | 20           |               |          |
| #60        | 0.25               | 44           |               |          |
| #100       | 0.15               | 67           |               |          |
| #120       | 0.12               | 71           |               |          |
| #200       | 0.075              | 78           |               |          |
| #230       | 0.063              | 79           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0279             | 84           |               |          |
| ---        | 0.0215             | 89           |               |          |
| ---        | 0.0125             | 92           |               |          |
| ---        | 0.0092             | 93           |               |          |
| ---        | 0.0065             | 94           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0032             | 96           |               |          |
| ---        | 0.0013             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.1624 mm | D <sub>30</sub> = 0.1335 mm |
| D <sub>60</sub> = 0.2791 mm | D <sub>15</sub> = 0.0267 mm |
| D <sub>50</sub> = 0.2186 mm | D <sub>10</sub> = 0.0176 mm |
| C <sub>u</sub> = 15.858     | C <sub>c</sub> = 3.628      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | N/A  |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

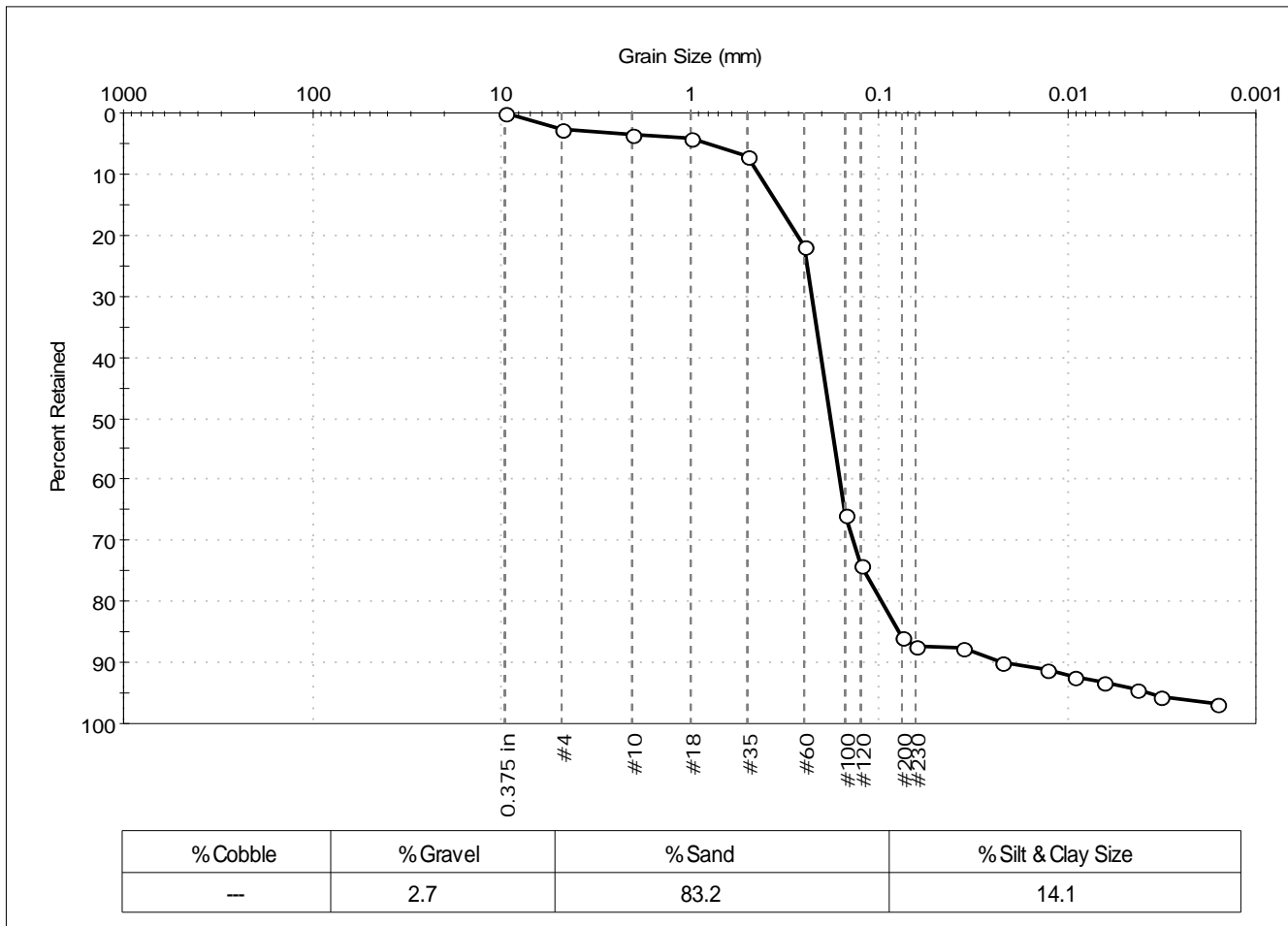
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 151-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0057  
 Test Date: 11/03/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310457  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 22           |               |          |
| #100       | 0.15               | 66           |               |          |
| #120       | 0.12               | 74           |               |          |
| #200       | 0.075              | 86           |               |          |
| #230       | 0.063              | 87           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0362             | 88           |               |          |
| ---        | 0.0220             | 90           |               |          |
| ---        | 0.0130             | 91           |               |          |
| ---        | 0.0092             | 92           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0043             | 94           |               |          |
| ---        | 0.0032             | 96           |               |          |
| ---        | 0.0016             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3439 mm | D <sub>30</sub> = 0.1369 mm |
| D <sub>60</sub> = 0.2026 mm | D <sub>15</sub> = 0.0781 mm |
| D <sub>50</sub> = 0.1804 mm | D <sub>10</sub> = 0.0216 mm |
| C <sub>u</sub> = 9.380      | C <sub>c</sub> = 4.283      |

**Classification**

|   |     |
|---|-----|
| ASTM  | N/A |
| AASHTO Stone Fragments, Gravel and Sand (A-1-b (0)) |     |

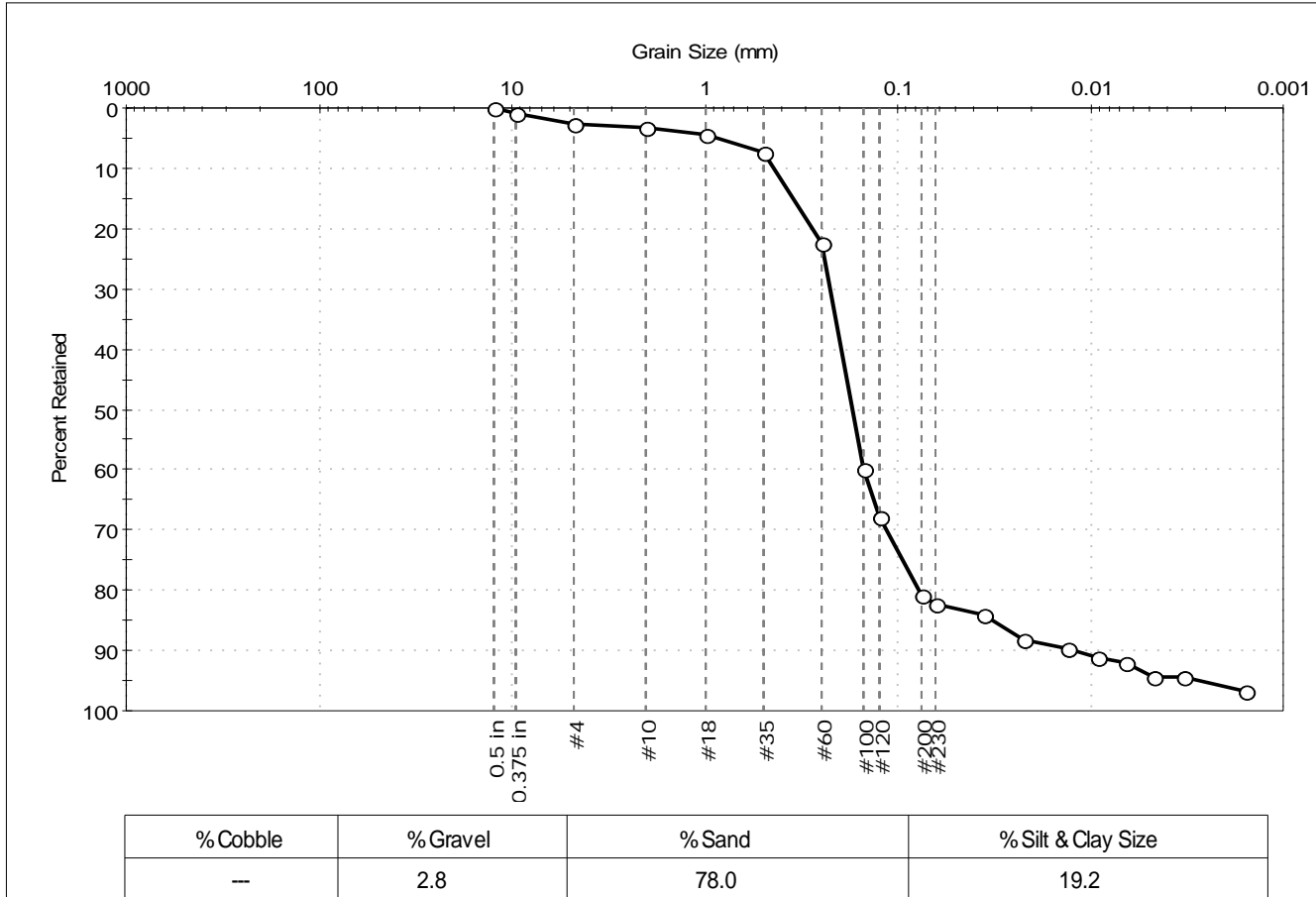
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 151-14LTM                                | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0058                               | Test Date: 11/04/14         | Depth: ---                | Test Id: 310451        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 22           |               |          |
| #100       | 0.15               | 60           |               |          |
| #120       | 0.12               | 68           |               |          |
| #200       | 0.075              | 81           |               |          |
| #230       | 0.063              | 82           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0360             | 84           |               |          |
| ---        | 0.0222             | 88           |               |          |
| ---        | 0.0130             | 90           |               |          |
| ---        | 0.0092             | 91           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0016             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3506 mm | D <sub>30</sub> = 0.1150 mm |
| D <sub>60</sub> = 0.1964 mm | D <sub>15</sub> = 0.0325 mm |
| D <sub>50</sub> = 0.1714 mm | D <sub>10</sub> = 0.0122 mm |
| C <sub>u</sub> = 16.098     | C <sub>c</sub> = 5.519      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

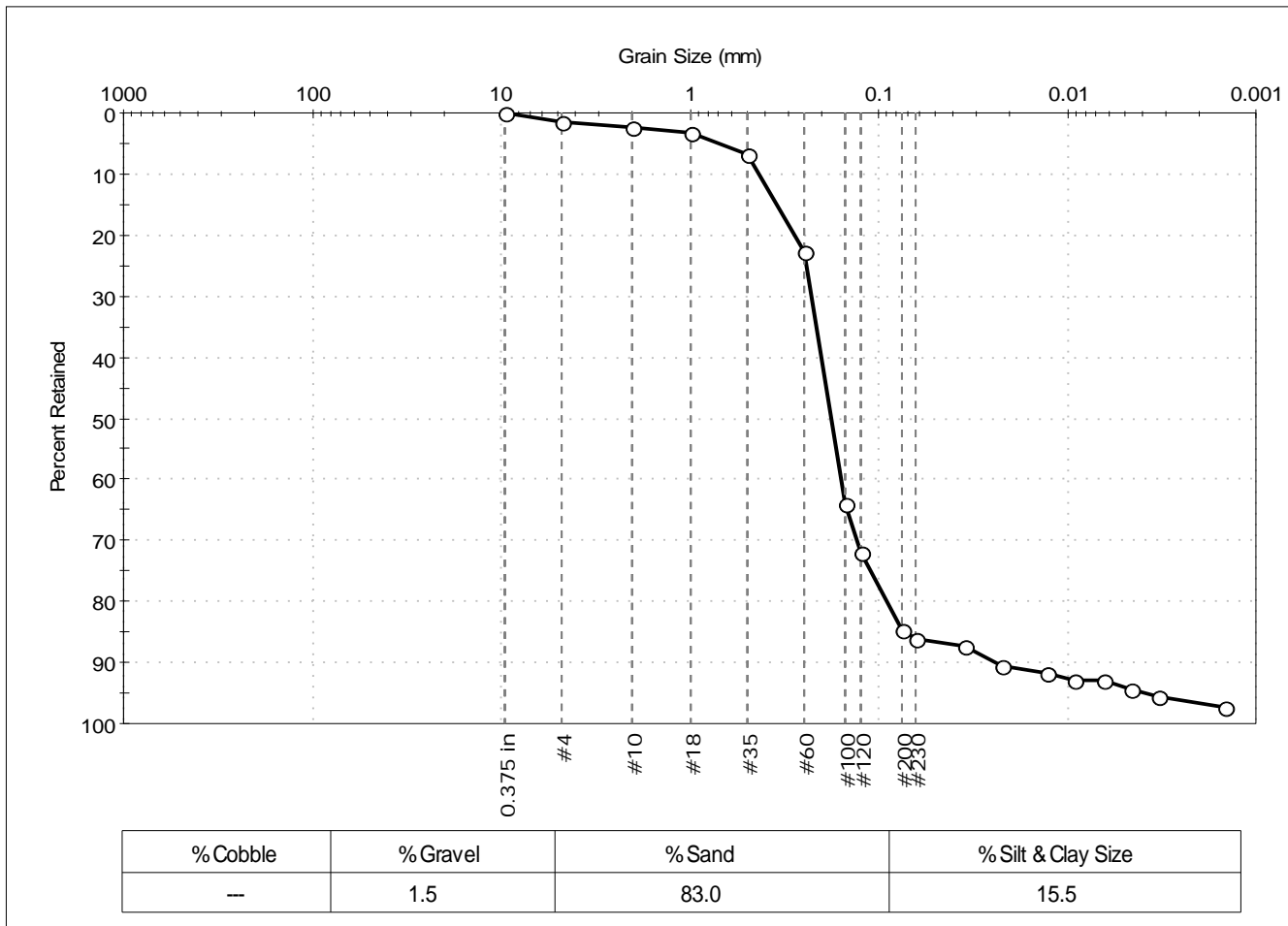
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute            | Project No: GTX-302366 |
| Project: New Bedford Harbor                    |                        |
| Location: New Bedford, MA                      |                        |
| Boring ID: 151-14LTM                           | Sample Type: bag       |
| Sample ID: NBH14-0059                          | Test Date: 11/04/14    |
| Depth: ---                                     | Test Id: 310452        |
| Test Comment: ---                              | Tested By: jbr         |
| Sample Description: Wet, dark olive silty sand | Checked By: jdt        |
| Sample Comment: ---                            |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 64           |               |          |
| #120       | 0.12               | 72           |               |          |
| #200       | 0.075              | 85           |               |          |
| #230       | 0.063              | 86           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0348             | 87           |               |          |
| ---        | 0.0223             | 91           |               |          |
| ---        | 0.0130             | 92           |               |          |
| ---        | 0.0092             | 93           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0015             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3494 mm | D <sub>30</sub> = 0.1308 mm |
| D <sub>60</sub> = 0.2017 mm | D <sub>15</sub> = 0.0714 mm |
| D <sub>50</sub> = 0.1782 mm | D <sub>10</sub> = 0.0241 mm |
| C <sub>u</sub> = 8.369      | C <sub>c</sub> = 3.520      |

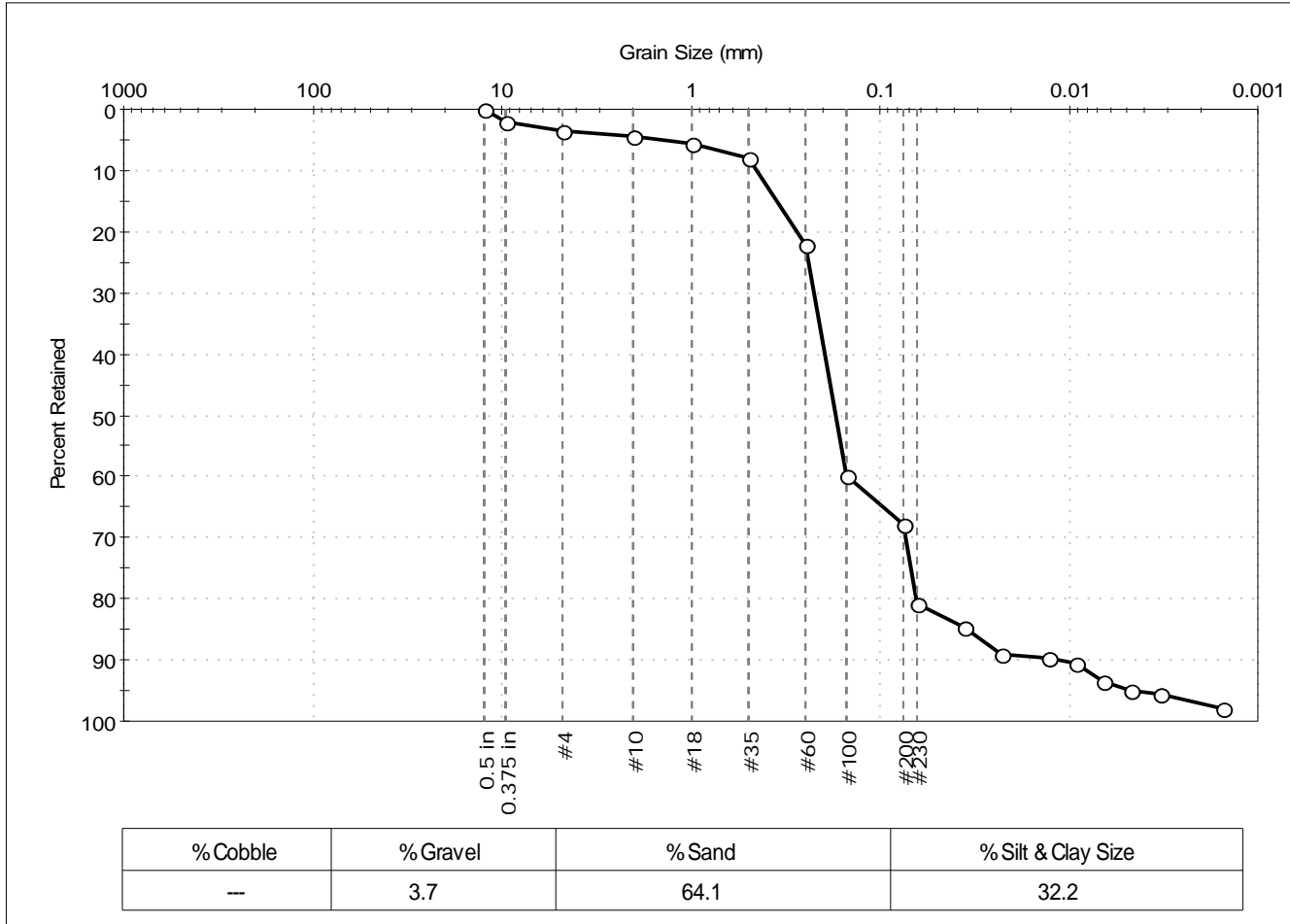
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute            | Project No: GTX-302366 |
| Project: New Bedford Harbor                    |                        |
| Location: New Bedford, MA                      |                        |
| Boring ID: 151-14LTM                           | Sample Type: bag       |
| Sample ID: NBH14-0060                          | Test Date: 11/03/14    |
| Depth: ---                                     | Test Id: 310453        |
| Test Comment: ---                              | Tested By: jbr         |
| Sample Description: Wet, dark olive silty sand | Checked By: jdt        |
| Sample Comment: ---                            |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 22           |               |          |
| #100       | 0.15               | 60           |               |          |
| #200       | 0.075              | 68           |               |          |
| #230       | 0.063              | 81           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0359             | 85           |               |          |
| ---        | 0.0226             | 89           |               |          |
| ---        | 0.0130             | 90           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0016             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3550 mm | D <sub>30</sub> = 0.0729 mm |
| D <sub>60</sub> = 0.1962 mm | D <sub>15</sub> = 0.0345 mm |
| D <sub>50</sub> = 0.1713 mm | D <sub>10</sub> = 0.0115 mm |
| C <sub>u</sub> = 17.061     | C <sub>c</sub> = 2.355      |

**Classification**

|  |     |
|--|-----|
| ASTM                                     | N/A |
| AASHTO Silty Gravel and Sand (A-2-4 (0)) |     |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

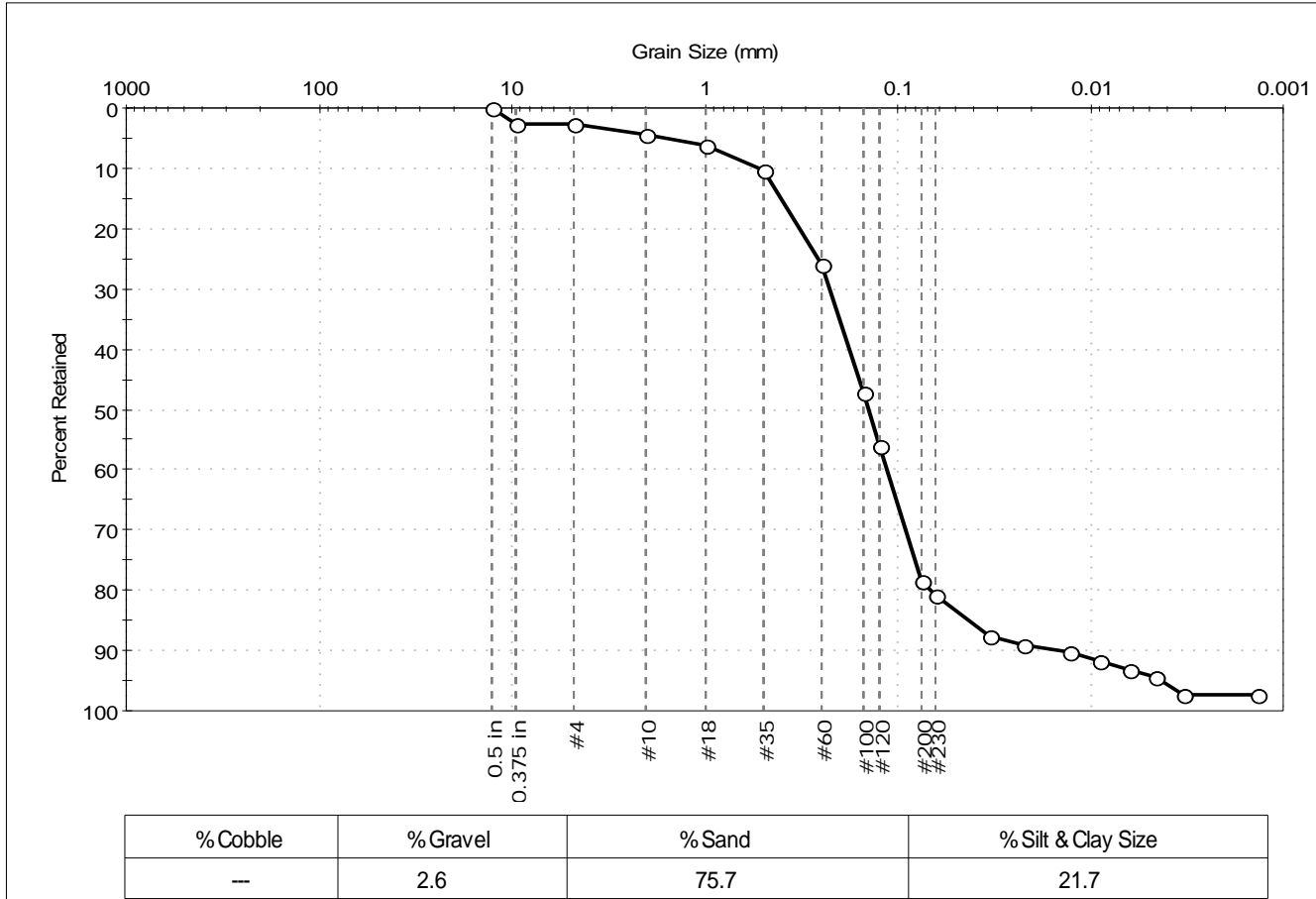
Separation of Sample: #230 Sieve





|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                         | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 147-14LTM                | Sample Type: bag                                    | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0061               | Test Date: 10/20/14                                 | Depth: ---                | Test Id: 309535        |
| Test Comment: ---                   | Sample Description: Moist, greenish gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 3            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 56           |               |          |
| #200       | 0.075              | 78           |               |          |
| #230       | 0.063              | 81           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0330             | 88           |               |          |
| ---        | 0.0224             | 89           |               |          |
| ---        | 0.0130             | 90           |               |          |
| ---        | 0.0091             | 92           |               |          |
| ---        | 0.0062             | 93           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 97           |               |          |
| ---        | 0.0014             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4066 mm | D <sub>30</sub> = 0.0908 mm |
| D <sub>60</sub> = 0.1786 mm | D <sub>15</sub> = 0.0423 mm |
| D <sub>50</sub> = 0.1417 mm | D <sub>10</sub> = 0.0149 mm |
| C <sub>u</sub> = 11.987     | C <sub>c</sub> = 3.098      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

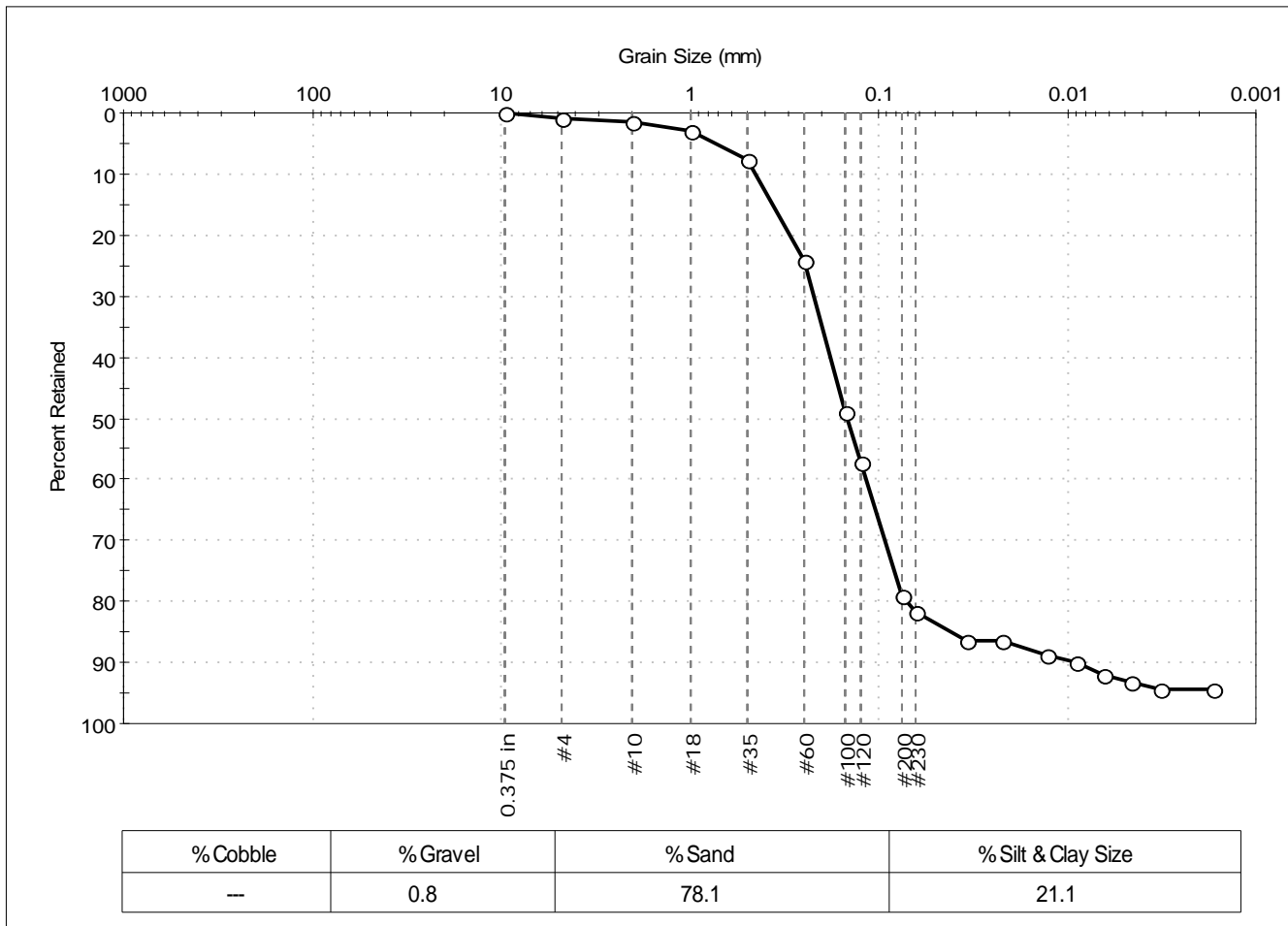
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute                    | Project No: GTX-302366 |
| Project: New Bedford Harbor                            |                        |
| Location: New Bedford, MA                              |                        |
| Boring ID: 147-14LTM                                   | Sample Type: bag       |
| Sample ID: NBH14-0062                                  | Test Date: 10/08/14    |
| Depth: ---   | Test Id: 309536        |
| Test Comment: ---                                      | Tested By: jbr         |
| Sample Description: Wet, dark greenish gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                    |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 49           |               |          |
| #120       | 0.12               | 57           |               |          |
| #200       | 0.075              | 79           |               |          |
| #230       | 0.063              | 82           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 86           |               |          |
| ---        | 0.0222             | 86           |               |          |
| ---        | 0.0127             | 89           |               |          |
| ---        | 0.0091             | 90           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0032             | 94           |               |          |
| ---        | 0.0017             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3674 mm | D <sub>30</sub> = 0.0926 mm |
| D <sub>60</sub> = 0.1806 mm | D <sub>15</sub> = 0.0408 mm |
| D <sub>50</sub> = 0.1468 mm | D <sub>10</sub> = 0.0089 mm |
| C <sub>u</sub> = 20.292     | C <sub>c</sub> = 5.335      |

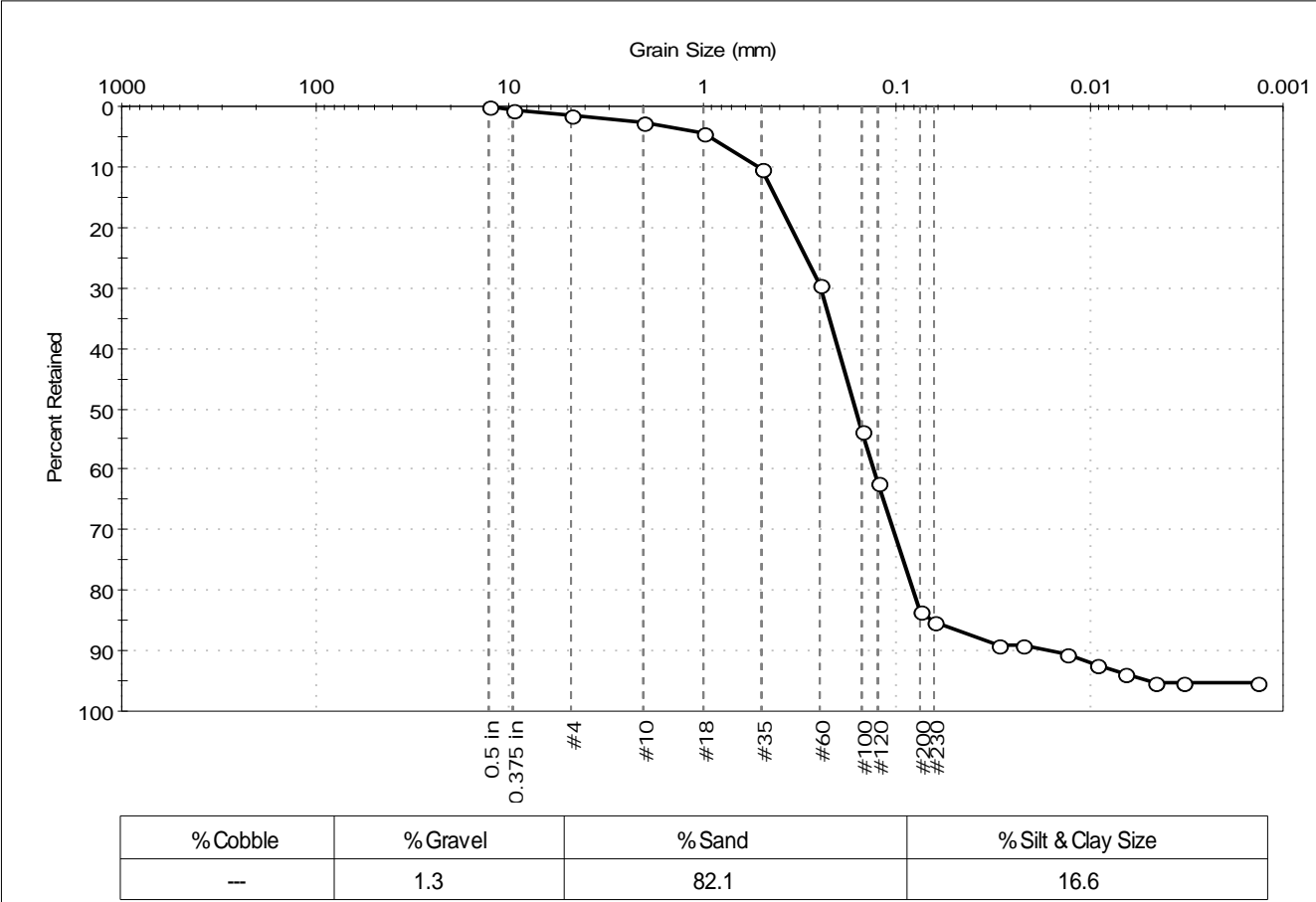
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                           | Project No: GTX-302366 |
| Boring ID: 147-14LTM                | Sample Type: bag            | Tested By: jbr                                      | Checked By: jdt        |
| Sample ID: NBH14-0063               | Test Date: 10/08/14         | Test Id: 309537                                     |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, greenish gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 29           |               |          |
| #100       | 0.15               | 54           |               |          |
| #120       | 0.12               | 62           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 85           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0298             | 89           |               |          |
| ---        | 0.0223             | 89           |               |          |
| ---        | 0.0131             | 91           |               |          |
| ---        | 0.0092             | 92           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4213 mm | D <sub>30</sub> = 0.1038 mm |
| D <sub>60</sub> = 0.2002 mm | D <sub>15</sub> = 0.0645 mm |
| D <sub>50</sub> = 0.1624 mm | D <sub>10</sub> = 0.0165 mm |
| C <sub>u</sub> = 12.133     | C <sub>c</sub> = 3.262      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

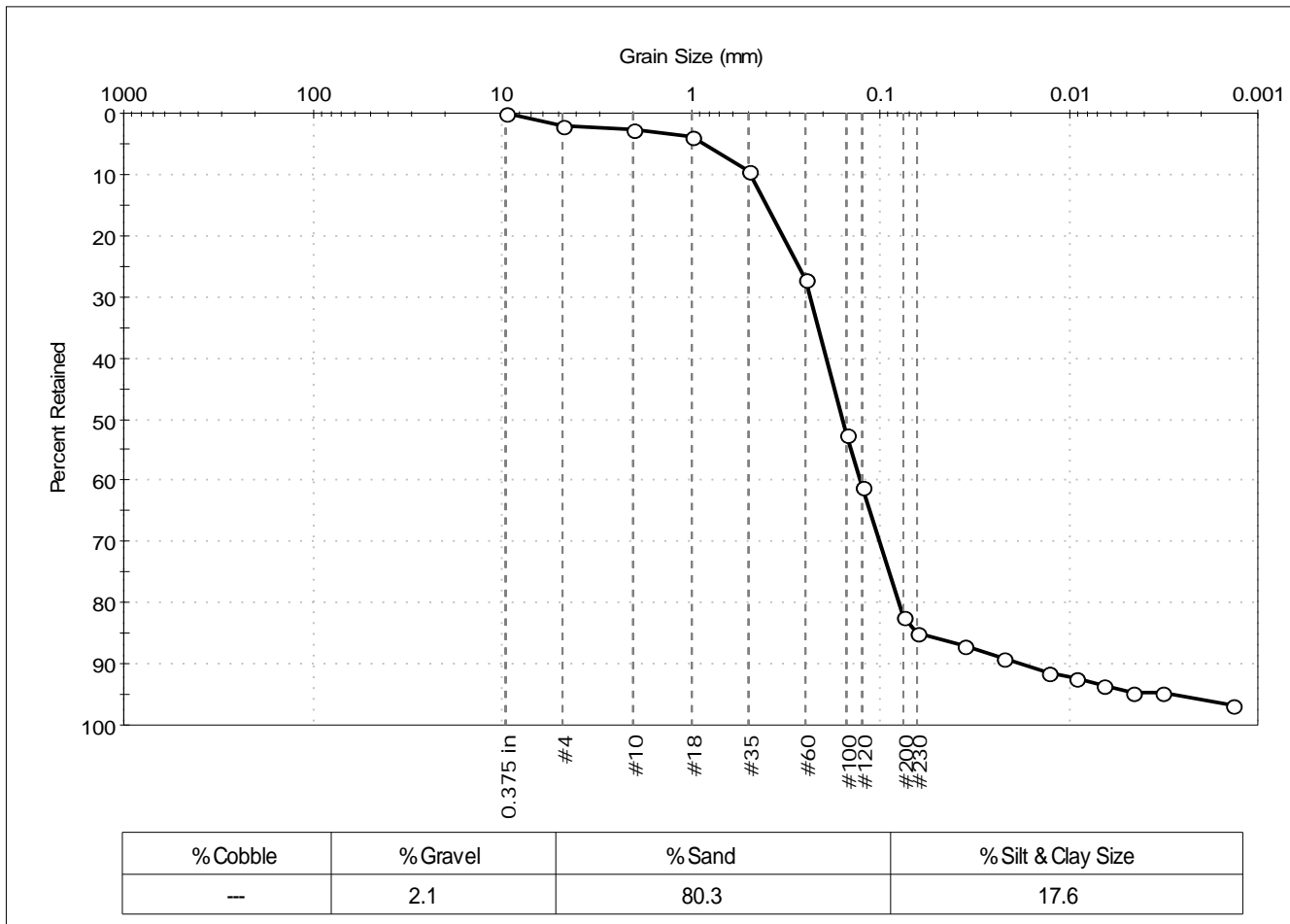
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 147-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0064                               | Test Date: 10/08/14    |
| Depth: ---  | Test Id: 309538        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Moist, greenish gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 27           |               |          |
| #100       | 0.15               | 53           |               |          |
| #120       | 0.12               | 61           |               |          |
| #200       | 0.075              | 82           |               |          |
| #230       | 0.063              | 85           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0356             | 87           |               |          |
| ---        | 0.0221             | 89           |               |          |
| ---        | 0.0128             | 91           |               |          |
| ---        | 0.0091             | 92           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0032             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4013 mm | D <sub>30</sub> = 0.1008 mm |
| D <sub>60</sub> = 0.1934 mm | D <sub>15</sub> = 0.0617 mm |
| D <sub>50</sub> = 0.1581 mm | D <sub>10</sub> = 0.0178 mm |
| C <sub>u</sub> = 10.865     | C <sub>c</sub> = 2.952      |

**Classification**

|   |     |
|---|-----|
| ASTM  | N/A |
| AASHTO Stone Fragments, Gravel and Sand (A-1-b (0)) |     |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

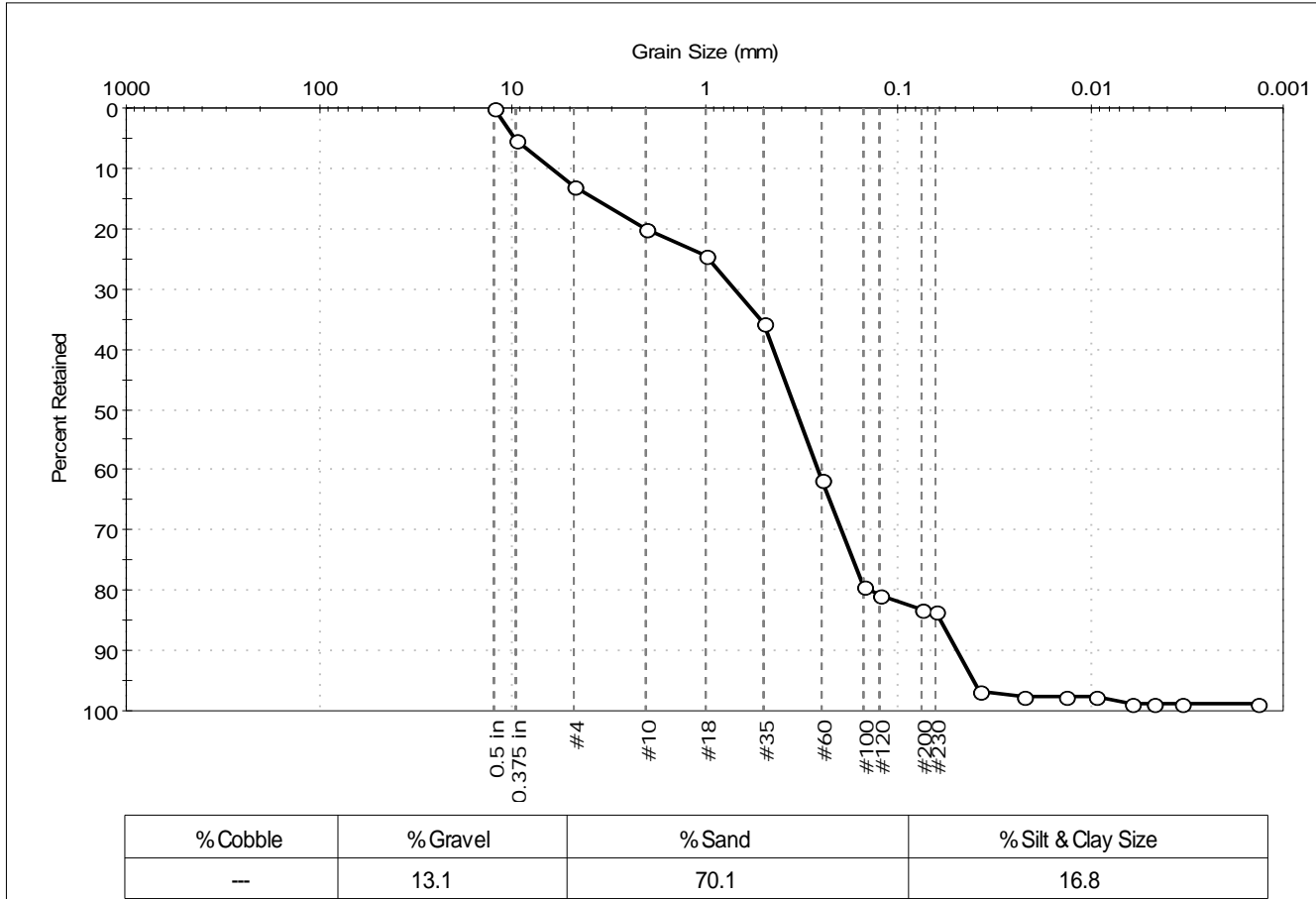
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 135-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0065                  | Test Date:   | 10/15/14   |
| Depth:              | ---                         | Test Id:     | 309539     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, olive silty sand     |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 13           |               |          |
| #10        | 2.00               | 20           |               |          |
| #18        | 1.00               | 25           |               |          |
| #35        | 0.50               | 36           |               |          |
| #60        | 0.25               | 62           |               |          |
| #100       | 0.15               | 79           |               |          |
| #120       | 0.12               | 81           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0375             | 97           |               |          |
| ---        | 0.0220             | 98           |               |          |
| ---        | 0.0134             | 98           |               |          |
| ---        | 0.0093             | 98           |               |          |
| ---        | 0.0062             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.7381 mm | D <sub>30</sub> = 0.1964 mm |
| D <sub>60</sub> = 0.4467 mm | D <sub>15</sub> = 0.0593 mm |
| D <sub>50</sub> = 0.3416 mm | D <sub>10</sub> = 0.0487 mm |
| C <sub>u</sub> = 9.172      | C <sub>c</sub> = 1.773      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

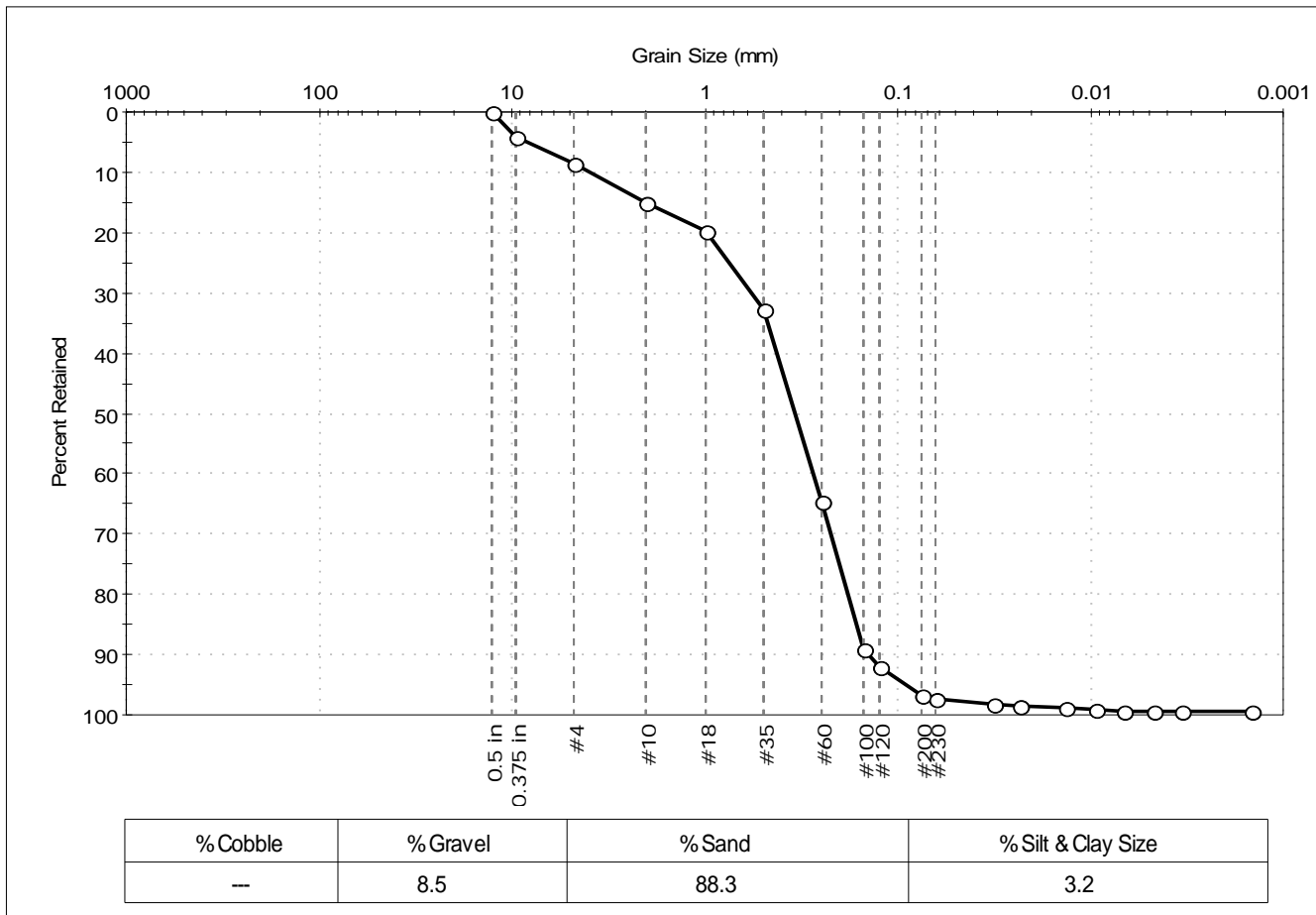
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 135-14LTM                | Sample Type: bag                           | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0066               | Test Date: 11/12/14                        | Depth: ---                | Test Id: 309540        |
| Test Comment: ---                   | Sample Description: Moist, olive gray sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 15           |               |          |
| #18        | 1.00               | 20           |               |          |
| #35        | 0.50               | 33           |               |          |
| #60        | 0.25               | 65           |               |          |
| #100       | 0.15               | 89           |               |          |
| #120       | 0.12               | 92           |               |          |
| #200       | 0.075              | 96.8         |               |          |
| #230       | 0.063              | 97           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0317             | 98           |               |          |
| ---        | 0.0234             | 99           |               |          |
| ---        | 0.0133             | 99           |               |          |
| ---        | 0.0095             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0015             | 99           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.9839 mm | D <sub>30</sub> = 0.2238 mm |
| D <sub>60</sub> = 0.4278 mm | D <sub>15</sub> = 0.1638 mm |
| D <sub>50</sub> = 0.3441 mm | D <sub>10</sub> = 0.1430 mm |
| C <sub>u</sub> = 2.992      | C <sub>c</sub> = 0.819      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

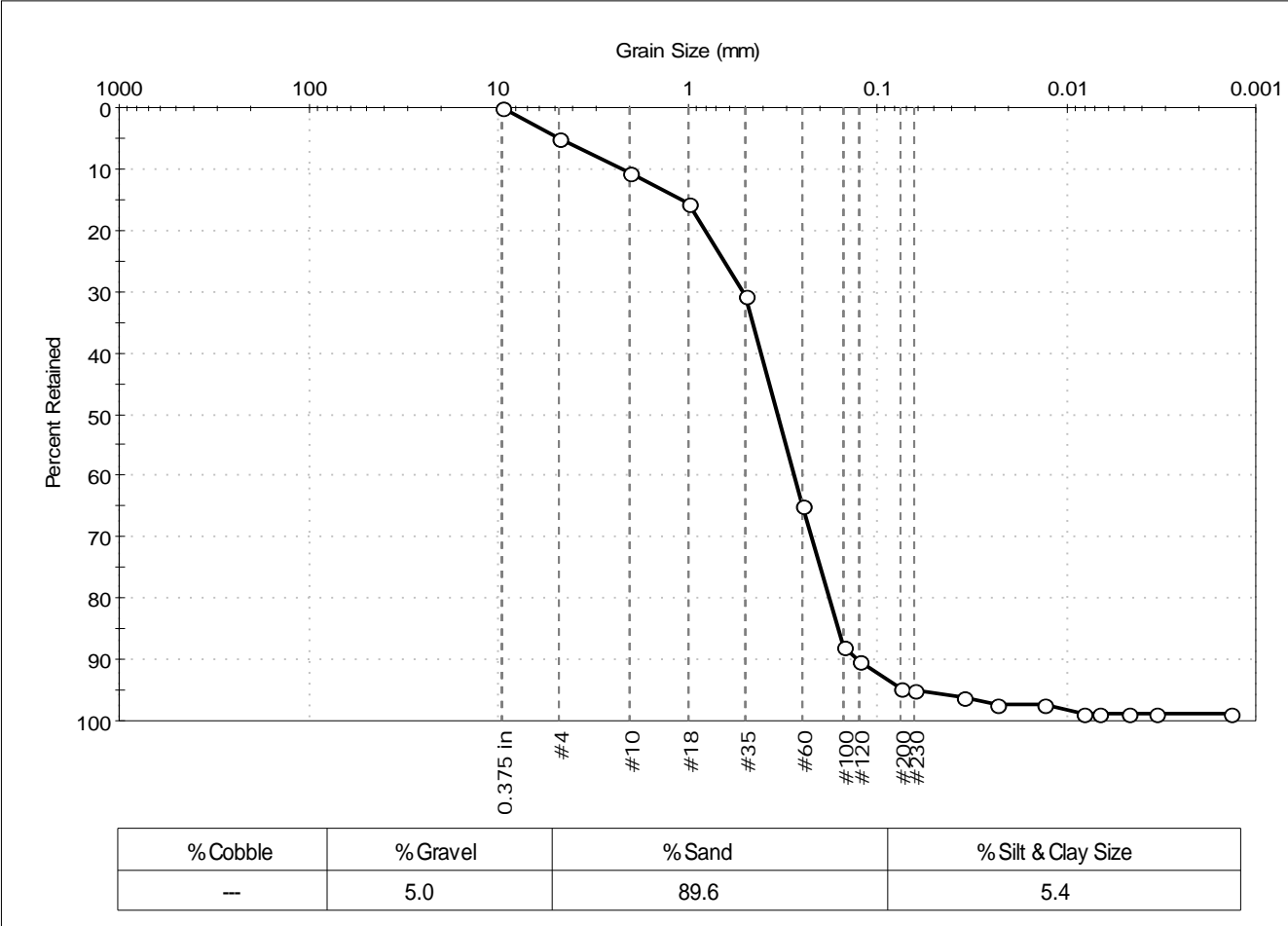
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                                  |              |            |
|---------------------|----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute      |              |            |
| Project:            | New Bedford Harbor               |              |            |
| Location:           | New Bedford, MA                  | Project No:  | GTX-302366 |
| Boring ID:          | 135-14LTM                        | Sample Type: | bag        |
| Sample ID:          | NBH14-0066DUP                    | Test Date:   | 10/02/14   |
| Depth:              | ---                              | Test Id:     | 309541     |
| Test Comment:       | ---                              |              |            |
| Sample Description: | Moist, olive gray sand with silt |              |            |
| Sample Comment:     | ---                              |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 11           |               |          |
| #18        | 1.00               | 16           |               |          |
| #35        | 0.50               | 31           |               |          |
| #60        | 0.25               | 65           |               |          |
| #100       | 0.15               | 88           |               |          |
| #120       | 0.12               | 90           |               |          |
| #200       | 0.075              | 94.6         |               |          |
| #230       | 0.063              | 95           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0349             | 96           |               |          |
| ---        | 0.0231             | 97           |               |          |
| ---        | 0.0131             | 97           |               |          |
| ---        | 0.0082             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.1083 mm | D <sub>30</sub> = 0.2234 mm |
| D <sub>60</sub> = 0.4141 mm | D <sub>15</sub> = 0.1596 mm |
| D <sub>50</sub> = 0.3384 mm | D <sub>10</sub> = 0.1268 mm |
| C <sub>u</sub> = 3.266      | C <sub>c</sub> = 0.950      |

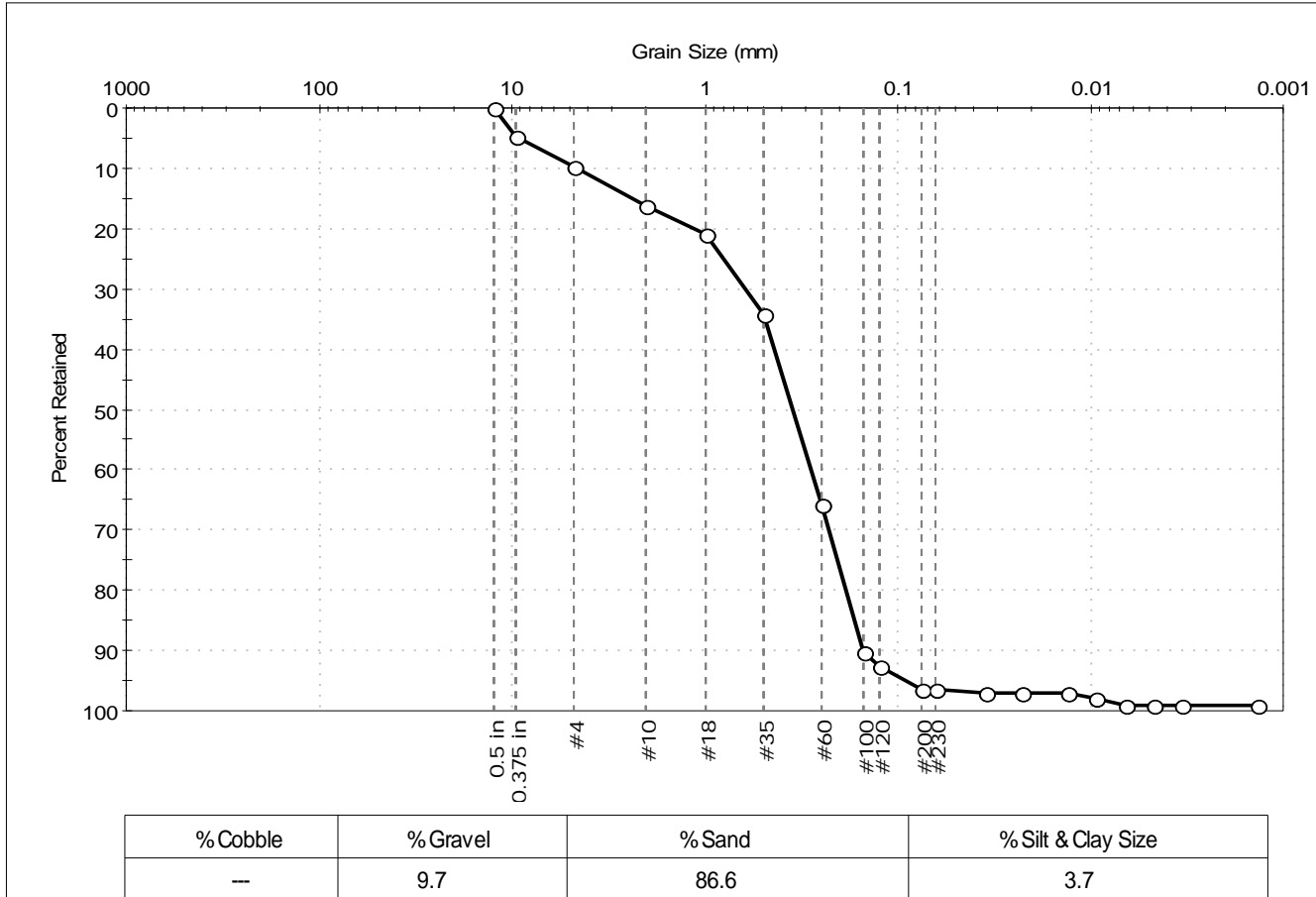
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                       |                        |
|---------------------------------------|------------------------|
| Client: Battelle Memorial Institute   | Project No: GTX-302366 |
| Project: New Bedford Harbor           |                        |
| Location: New Bedford, MA             |                        |
| Boring ID: 135-14LTM                  | Sample Type: bag       |
| Sample ID: NBH14-0067                 | Test Date: 10/02/14    |
| Depth: ---                            | Test Id: 309542        |
| Test Comment: ---                     | Tested By: jbr         |
| Sample Description: Moist, olive sand | Checked By: jdt        |
| Sample Comment: ---                   |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 10           |               |          |
| #10        | 2.00               | 16           |               |          |
| #18        | 1.00               | 21           |               |          |
| #35        | 0.50               | 34           |               |          |
| #60        | 0.25               | 66           |               |          |
| #100       | 0.15               | 90           |               |          |
| #120       | 0.12               | 93           |               |          |
| #200       | 0.075              | 96.3         |               |          |
| #230       | 0.063              | 97           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0349             | 97           |               |          |
| ---        | 0.0230             | 97           |               |          |
| ---        | 0.0132             | 97           |               |          |
| ---        | 0.0094             | 98           |               |          |
| ---        | 0.0065             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.3581 mm | D <sub>30</sub> = 0.2289 mm |
| D <sub>60</sub> = 0.4398 mm | D <sub>15</sub> = 0.1676 mm |
| D <sub>50</sub> = 0.3531 mm | D <sub>10</sub> = 0.1511 mm |
| C <sub>u</sub> = 2.911      | C <sub>c</sub> = 0.788      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

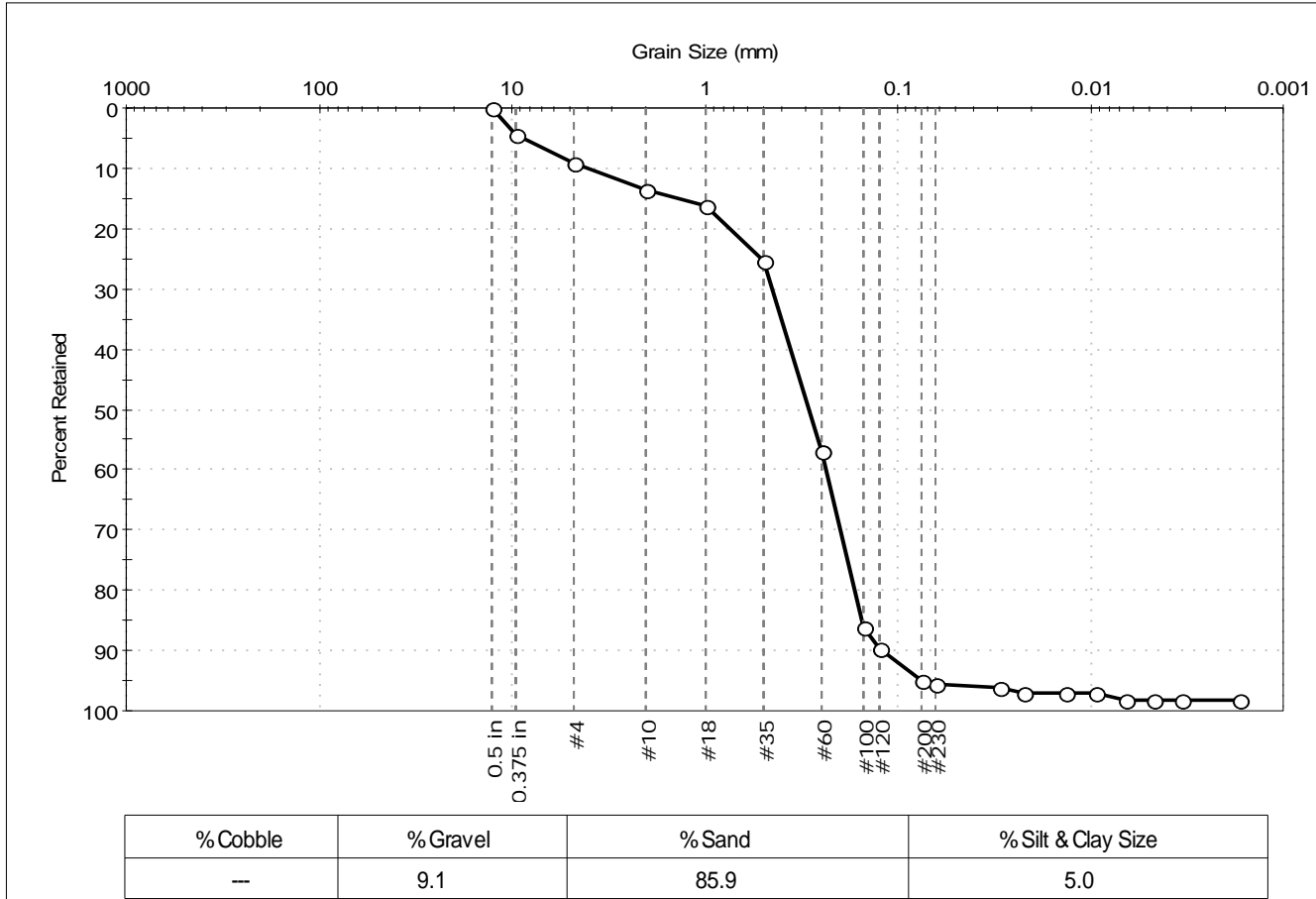
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 135-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0068  
 Test Date: 10/08/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 309543  
 Test Comment: ---  
 Sample Description: Wet, olive gray sand with silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 9            |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 16           |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 57           |               |          |
| #100       | 0.15               | 86           |               |          |
| #120       | 0.12               | 90           |               |          |
| #200       | 0.075              | 95.0         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0299             | 96           |               |          |
| ---        | 0.0223             | 97           |               |          |
| ---        | 0.0134             | 97           |               |          |
| ---        | 0.0094             | 97           |               |          |
| ---        | 0.0066             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0017             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.3655 mm | D <sub>30</sub> = 0.1990 mm |
| D <sub>60</sub> = 0.3619 mm | D <sub>15</sub> = 0.1533 mm |
| D <sub>50</sub> = 0.2908 mm | D <sub>10</sub> = 0.1207 mm |
| C <sub>u</sub> = 2.998      | C <sub>c</sub> = 0.907      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

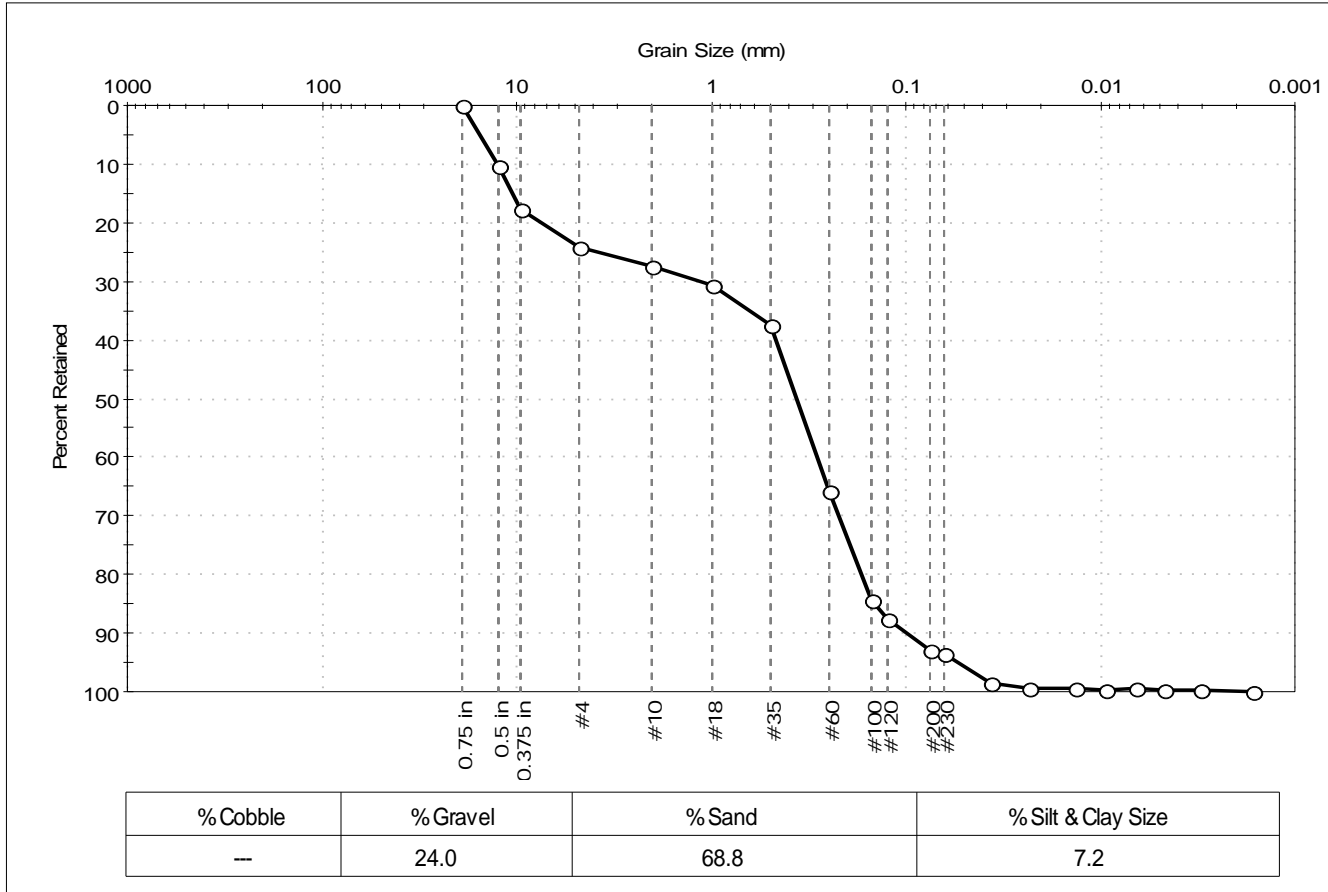
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 155-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0069  | Test Date: 11/04/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310458             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Wet, dark olive gray sand with silt and gravel |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 10           |               |          |
| 0.375 in   | 9.50               | 18           |               |          |
| #4         | 4.75               | 24           |               |          |
| #10        | 2.00               | 27           |               |          |
| #18        | 1.00               | 31           |               |          |
| #35        | 0.50               | 37           |               |          |
| #60        | 0.25               | 66           |               |          |
| #100       | 0.15               | 84           |               |          |
| #120       | 0.12               | 88           |               |          |
| #200       | 0.075              | 92.8         |               |          |
| #230       | 0.063              | 94           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0368             | 98           |               |          |
| ---        | 0.0234             | 99           |               |          |
| ---        | 0.0134             | 99           |               |          |
| ---        | 0.0094             | 100          |               |          |
| ---        | 0.0066             | 99           |               |          |
| ---        | 0.0047             | 100          |               |          |
| ---        | 0.0031             | 100          |               |          |
| ---        | 0.0016             | 100          |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 10.4759 mm | D <sub>30</sub> = 0.2228 mm |
| D <sub>60</sub> = 0.4698 mm  | D <sub>15</sub> = 0.1446 mm |
| D <sub>50</sub> = 0.3680 mm  | D <sub>10</sub> = 0.0990 mm |
| C <sub>u</sub> = 4.745       | C <sub>c</sub> = 1.067      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

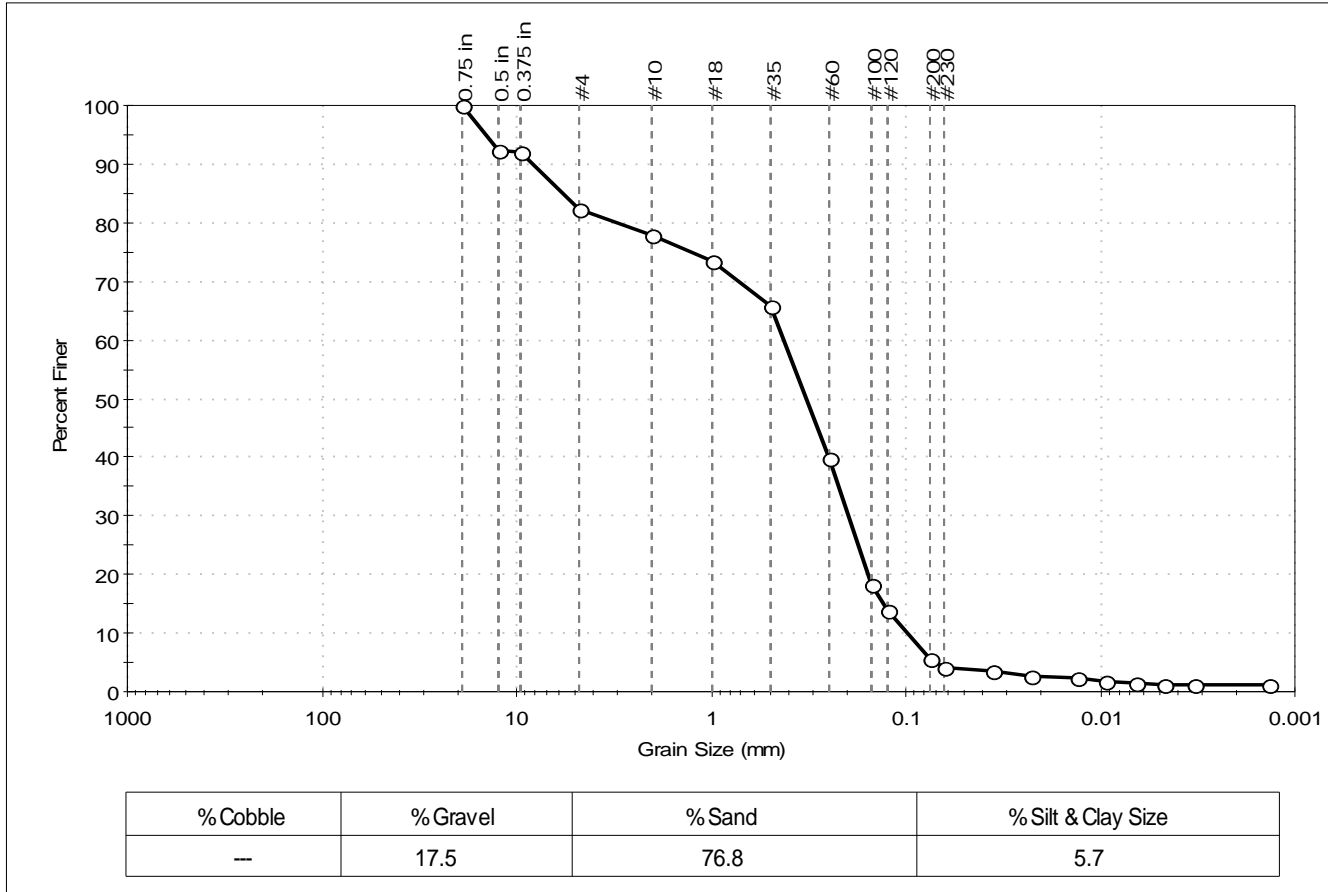
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ANGULAR         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 155-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0070  | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310454             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Wet, dark olive gray sand with silt and gravel |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Percent Finer | Spec. Percent | Complies |
|------------|--------------------|---------------|---------------|----------|
| 0.75 in    | 19.00              | 100           |               |          |
| 0.5 in     | 12.50              | 92            |               |          |
| 0.375 in   | 9.50               | 92            |               |          |
| #4         | 4.75               | 82            |               |          |
| #10        | 2.00               | 78            |               |          |
| #18        | 1.00               | 74            |               |          |
| #35        | 0.50               | 66            |               |          |
| #60        | 0.25               | 40            |               |          |
| #100       | 0.15               | 18            |               |          |
| #120       | 0.12               | 14            |               |          |
| #200       | 0.075              | 5.7           |               |          |
| #230       | 0.063              | 4             |               |          |
| ---        | Particle Size (mm) | Percent Finer | Spec. Percent | Complies |
| ---        | 0.0354             | 4             |               |          |
| ---        | 0.0226             | 3             |               |          |
| ---        | 0.0131             | 2             |               |          |
| ---        | 0.0093             | 2             |               |          |
| ---        | 0.0066             | 2             |               |          |
| ---        | 0.0047             | 1             |               |          |
| ---        | 0.0033             | 1             |               |          |
| ---        | 0.0014             | 1             |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.7244 mm | D <sub>30</sub> = 0.1982 mm |
| D <sub>60</sub> = 0.4299 mm | D <sub>15</sub> = 0.1305 mm |
| D <sub>50</sub> = 0.3289 mm | D <sub>10</sub> = 0.0979 mm |
| C <sub>u</sub> = 4.391      | C <sub>c</sub> = 0.933      |

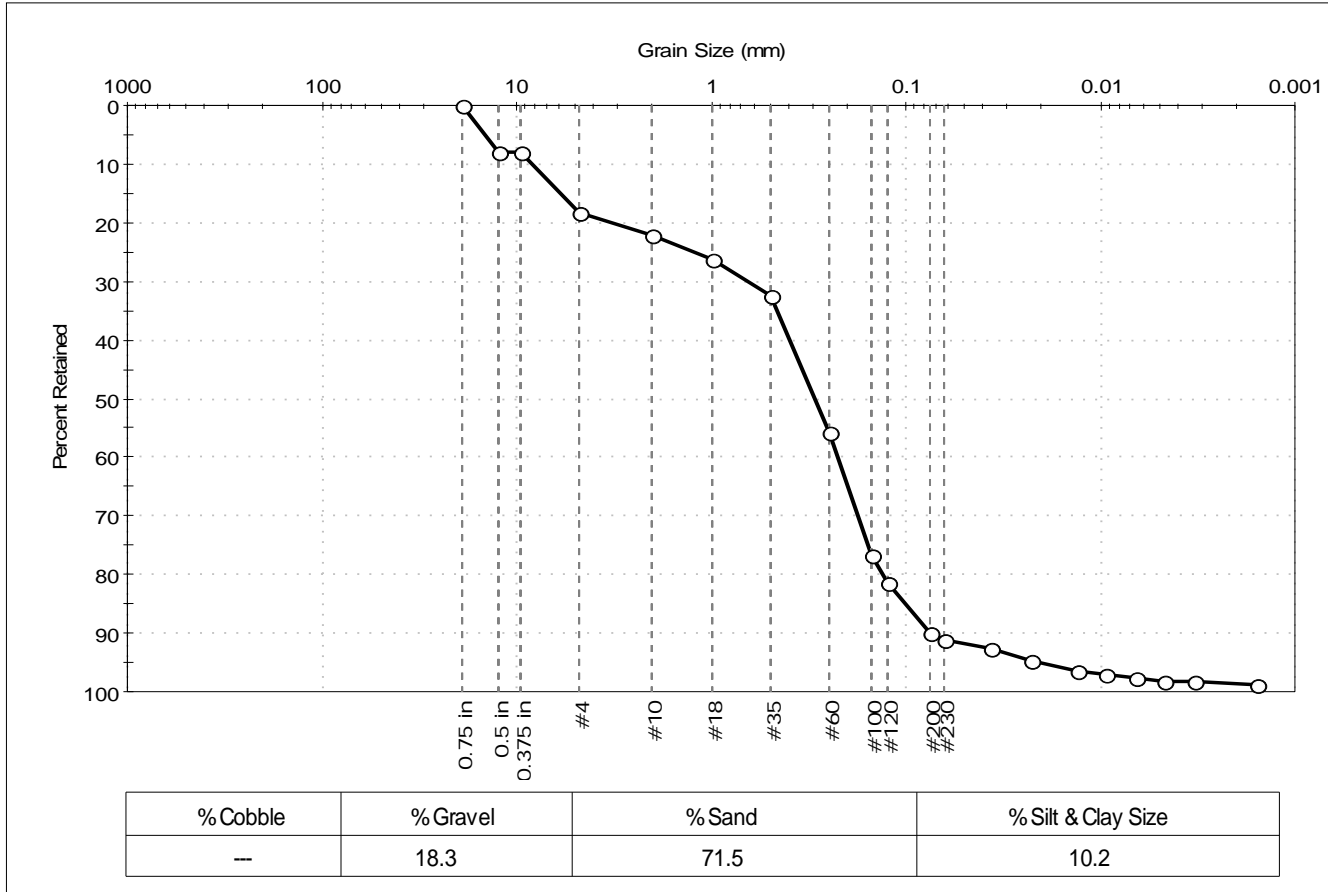
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                    | Project No: GTX-302366 |
| Boring ID: 155-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0071               | Test Date: 11/04/14         | Test Id: 310455  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray sand with silt and gravel | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 8            |               |          |
| 0.375 in   | 9.50               | 8            |               |          |
| #4         | 4.75               | 18           |               |          |
| #10        | 2.00               | 22           |               |          |
| #18        | 1.00               | 26           |               |          |
| #35        | 0.50               | 33           |               |          |
| #60        | 0.25               | 56           |               |          |
| #100       | 0.15               | 77           |               |          |
| #120       | 0.12               | 81           |               |          |
| #200       | 0.075              | 90           |               |          |
| #230       | 0.063              | 91           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0368             | 92           |               |          |
| ---        | 0.0225             | 95           |               |          |
| ---        | 0.0133             | 97           |               |          |
| ---        | 0.0094             | 97           |               |          |
| ---        | 0.0066             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0016             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.9217 mm | D <sub>30</sub> = 0.1768 mm |
| D <sub>60</sub> = 0.4000 mm | D <sub>15</sub> = 0.1002 mm |
| D <sub>50</sub> = 0.2965 mm | D <sub>10</sub> = 0.0735 mm |
| C <sub>u</sub> = 5.442      | C <sub>c</sub> = 1.063      |

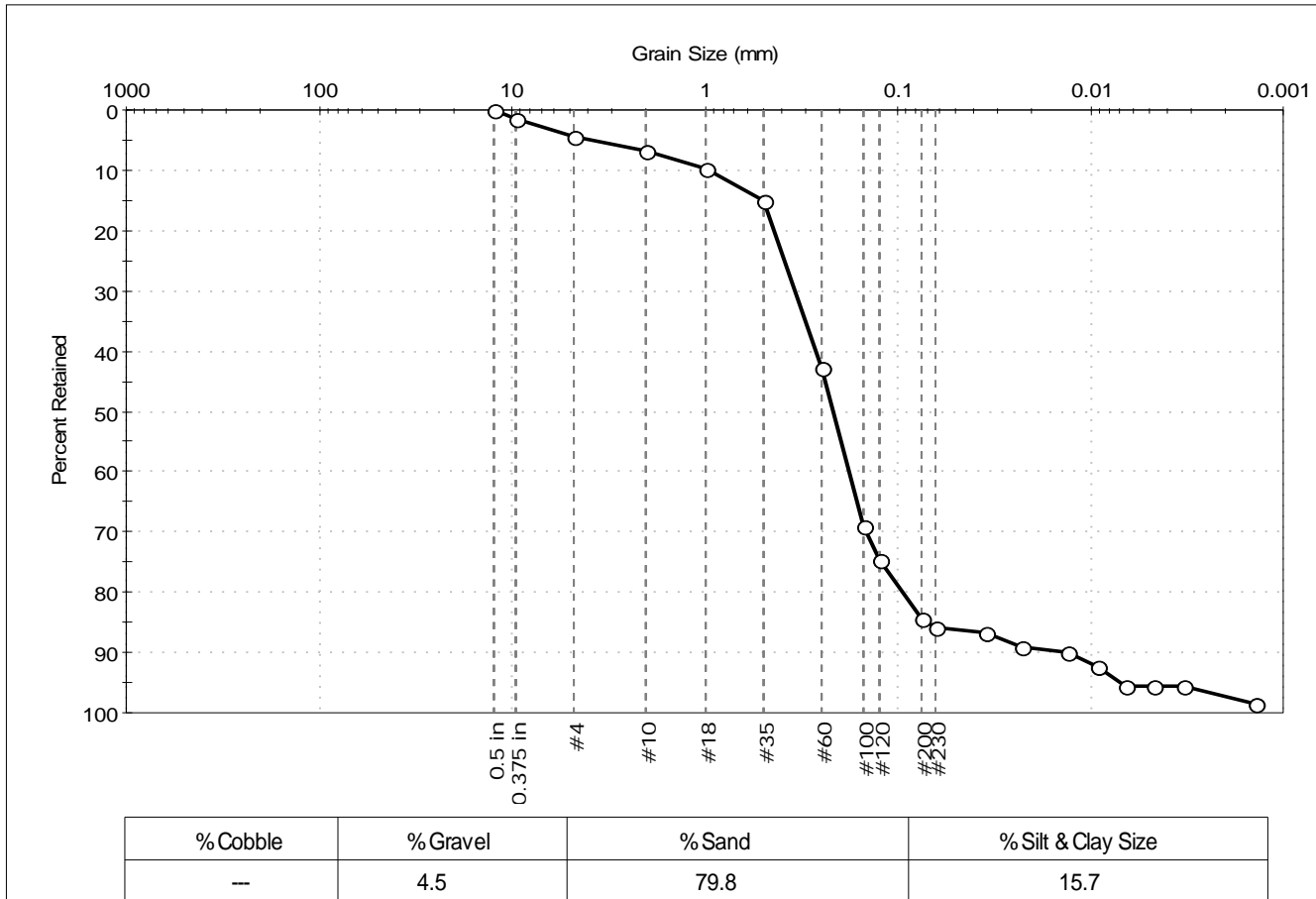
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                  | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 155-14LTM                                 | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0072                                | Test Date: 11/17/14         | Test Id: 310456           |                        |
| Depth: ---   |                             |                           |                        |
| Test Comment: ---                                    |                             |                           |                        |
| Sample Description: Moist, very dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                                  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 43           |               |          |
| #100       | 0.15               | 69           |               |          |
| #120       | 0.12               | 75           |               |          |
| #200       | 0.075              | 84           |               |          |
| #230       | 0.063              | 86           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0352             | 87           |               |          |
| ---        | 0.0225             | 89           |               |          |
| ---        | 0.0130             | 90           |               |          |
| ---        | 0.0093             | 92           |               |          |
| ---        | 0.0066             | 96           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 99           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5109 mm | D <sub>30</sub> = 0.1459 mm |
| D <sub>60</sub> = 0.2680 mm | D <sub>15</sub> = 0.0691 mm |
| D <sub>50</sub> = 0.2173 mm | D <sub>10</sub> = 0.0137 mm |
| C <sub>u</sub> = 19.562     | C <sub>c</sub> = 5.798      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

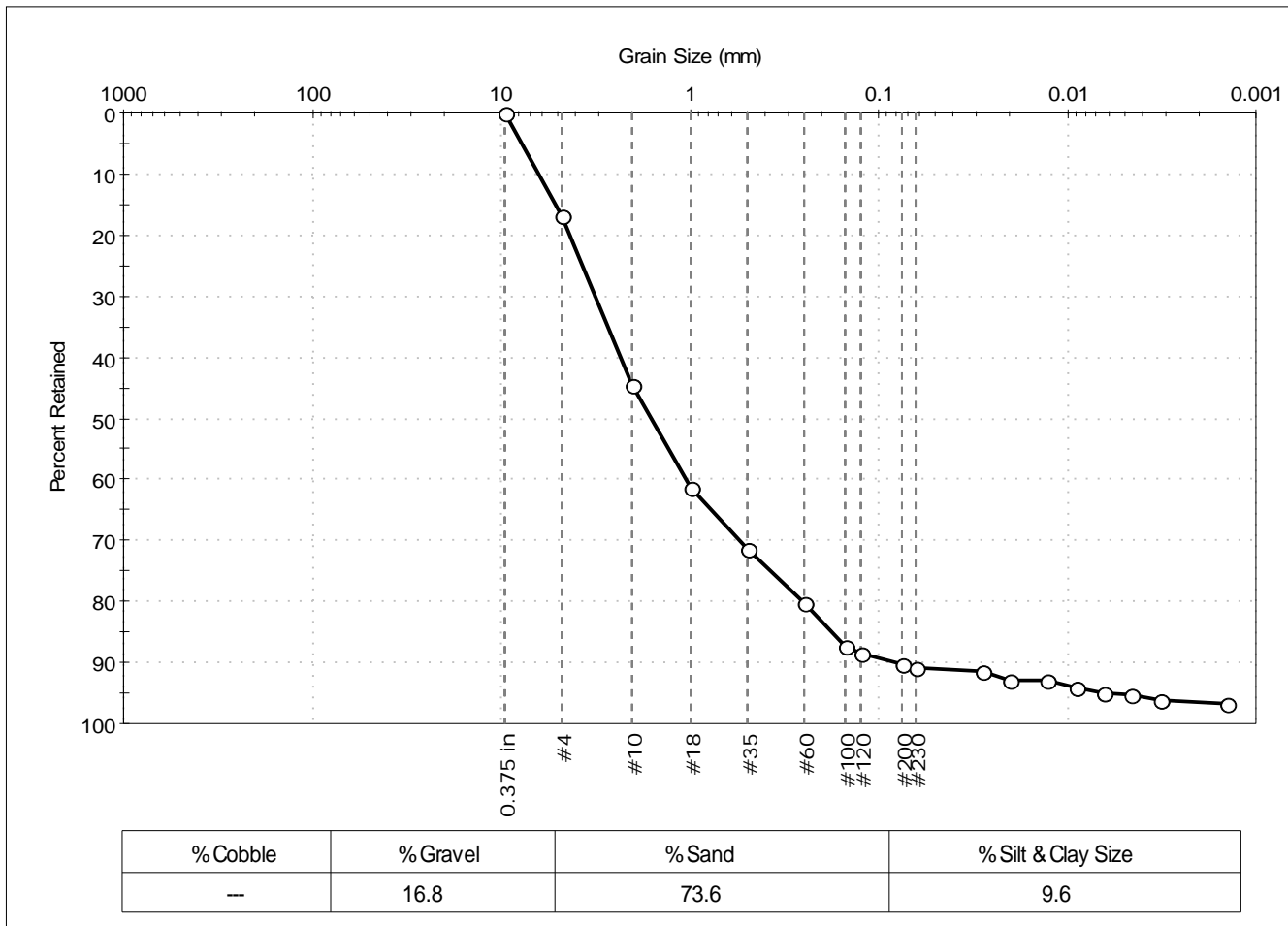
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                | Project No: GTX-302366 |
| Boring ID: 333-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0073               | Test Date: 10/20/14         | Test Id: 309506  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive sand with silt and gravel | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 17           |               |          |
| #10        | 2.00               | 44           |               |          |
| #18        | 1.00               | 61           |               |          |
| #35        | 0.50               | 72           |               |          |
| #60        | 0.25               | 80           |               |          |
| #100       | 0.15               | 87           |               |          |
| #120       | 0.12               | 89           |               |          |
| #200       | 0.075              | 90.4         |               |          |
| #230       | 0.063              | 91           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0283             | 92           |               |          |
| ---        | 0.0203             | 93           |               |          |
| ---        | 0.0127             | 93           |               |          |
| ---        | 0.0089             | 94           |               |          |
| ---        | 0.0065             | 95           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0032             | 96           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.1107 mm | D <sub>30</sub> = 0.5537 mm |
| D <sub>60</sub> = 2.2972 mm | D <sub>15</sub> = 0.1759 mm |
| D <sub>50</sub> = 1.5898 mm | D <sub>10</sub> = 0.0841 mm |
| C <sub>u</sub> = 27.315     | C <sub>c</sub> = 1.587      |

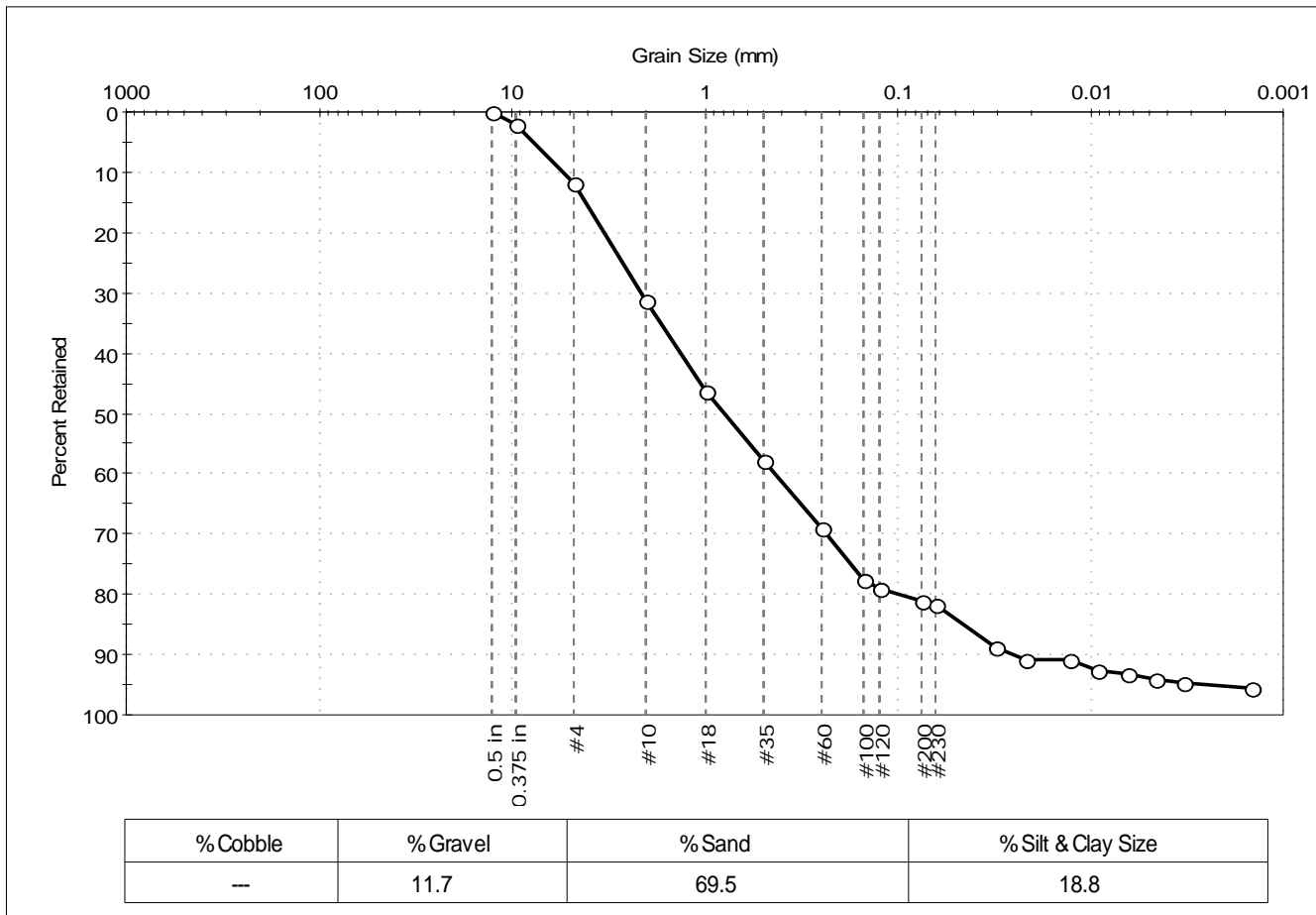
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                      | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 333-14LTM                                     | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0074                                    | Test Date: 10/21/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 309507             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, dark greenish gray silty sand |                             |                           |                        |
| Sample Comment: ---                                      |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 31           |               |          |
| #18        | 1.00               | 46           |               |          |
| #35        | 0.50               | 58           |               |          |
| #60        | 0.25               | 69           |               |          |
| #100       | 0.15               | 78           |               |          |
| #120       | 0.12               | 79           |               |          |
| #200       | 0.075              | 81           |               |          |
| #230       | 0.063              | 82           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 89           |               |          |
| ---        | 0.0216             | 91           |               |          |
| ---        | 0.0129             | 91           |               |          |
| ---        | 0.0092             | 92           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0015             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 4.1123 mm | D <sub>30</sub> = 0.2362 mm |
| D <sub>60</sub> = 1.3341 mm | D <sub>15</sub> = 0.0454 mm |
| D <sub>50</sub> = 0.7982 mm | D <sub>10</sub> = 0.0254 mm |
| C <sub>u</sub> = 52.524     | C <sub>c</sub> = 1.646      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

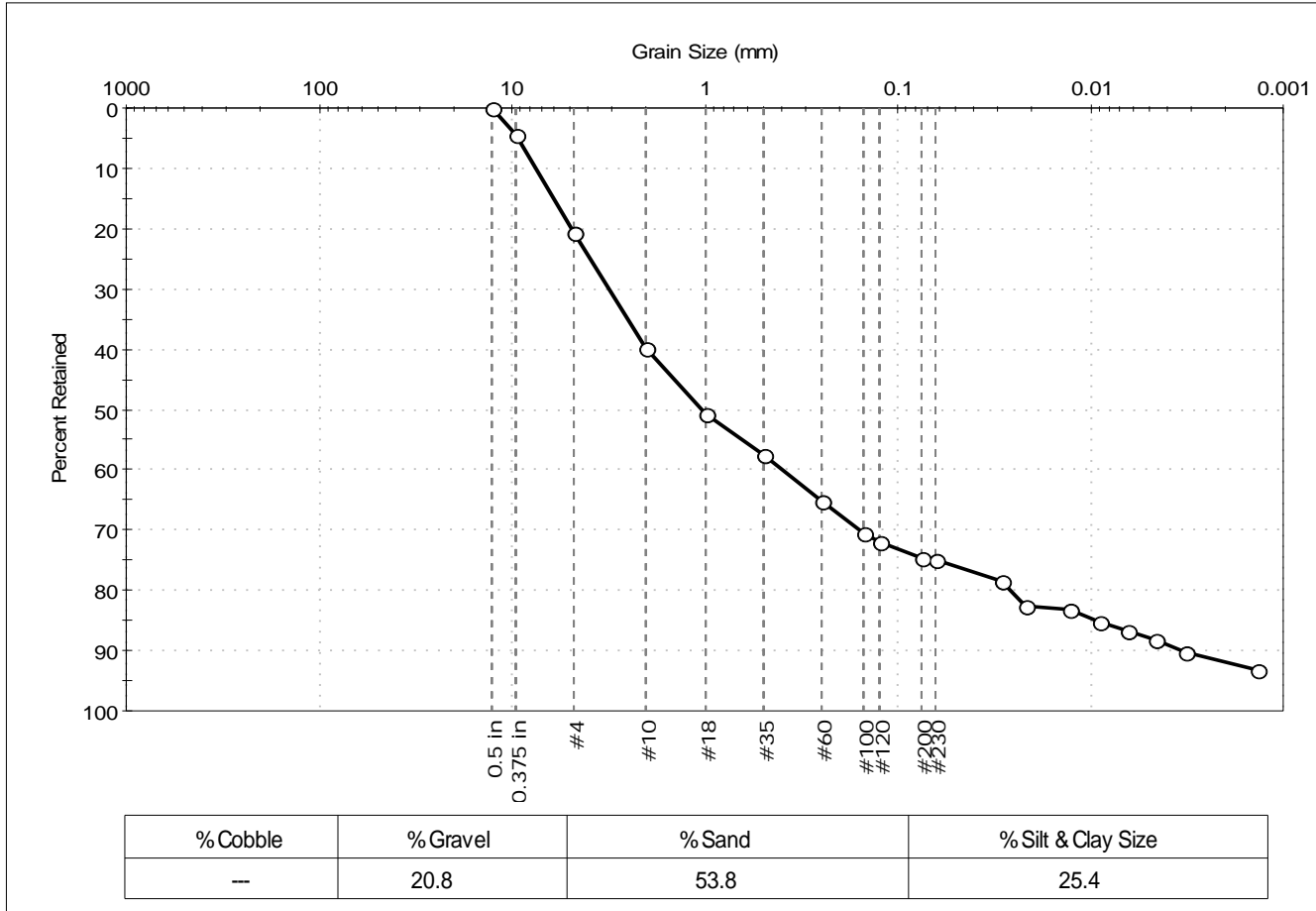
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                         | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 333-14LTM  | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0075                                       | Test Date: 10/23/14         | Depth: ---                | Test Id: 309508        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Wet, olive green silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 21           |               |          |
| #10        | 2.00               | 40           |               |          |
| #18        | 1.00               | 51           |               |          |
| #35        | 0.50               | 58           |               |          |
| #60        | 0.25               | 65           |               |          |
| #100       | 0.15               | 71           |               |          |
| #120       | 0.12               | 72           |               |          |
| #200       | 0.075              | 75           |               |          |
| #230       | 0.063              | 75           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0290             | 78           |               |          |
| ---        | 0.0218             | 83           |               |          |
| ---        | 0.0127             | 83           |               |          |
| ---        | 0.0091             | 85           |               |          |
| ---        | 0.0064             | 87           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 93           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 6.0761 mm | D <sub>30</sub> = 0.1583 mm |
| D <sub>60</sub> = 1.9641 mm | D <sub>15</sub> = 0.0096 mm |
| D <sub>50</sub> = 1.0551 mm | D <sub>10</sub> = 0.0035 mm |
| C <sub>u</sub> = 561.171    | C <sub>c</sub> = 3.645      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

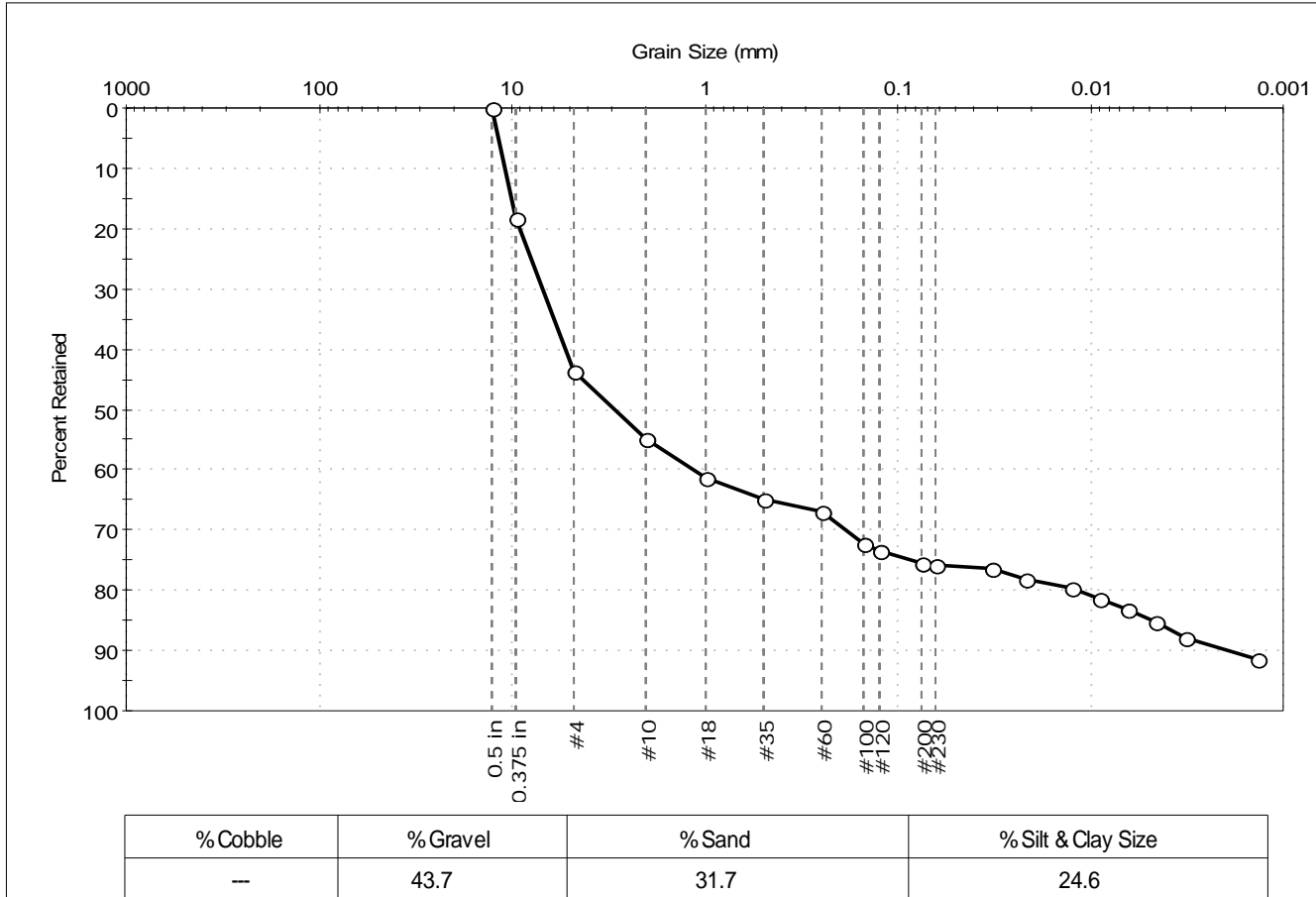
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                           | Project No: GTX-302366 |
| Project: New Bedford Harbor                                   |                        |
| Location: New Bedford, MA                                     |                        |
| Boring ID: 333-14LTM  | Sample Type: bag       |
| Sample ID: NBH14-0076   | Test Date: 10/21/14    |
| Depth: ---  | Test Id: 309509        |
| Test Comment: ---   | Tested By: jbr         |
| Sample Description: Wet, greenish gray silty gravel with sand | Checked By: jdt        |
| Sample Comment: ---   |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 18           |               |          |
| #4         | 4.75               | 44           |               |          |
| #10        | 2.00               | 55           |               |          |
| #18        | 1.00               | 61           |               |          |
| #35        | 0.50               | 65           |               |          |
| #60        | 0.25               | 67           |               |          |
| #100       | 0.15               | 72           |               |          |
| #120       | 0.12               | 73           |               |          |
| #200       | 0.075              | 75           |               |          |
| #230       | 0.063              | 76           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 76           |               |          |
| ---        | 0.0216             | 78           |               |          |
| ---        | 0.0127             | 80           |               |          |
| ---        | 0.0091             | 82           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 88           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 10.0240 mm | D <sub>30</sub> = 0.1867 mm |
| D <sub>60</sub> = 5.2612 mm  | D <sub>15</sub> = 0.0048 mm |
| D <sub>50</sub> = 2.9343 mm  | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 2769.053    | C <sub>c</sub> = 3.487      |

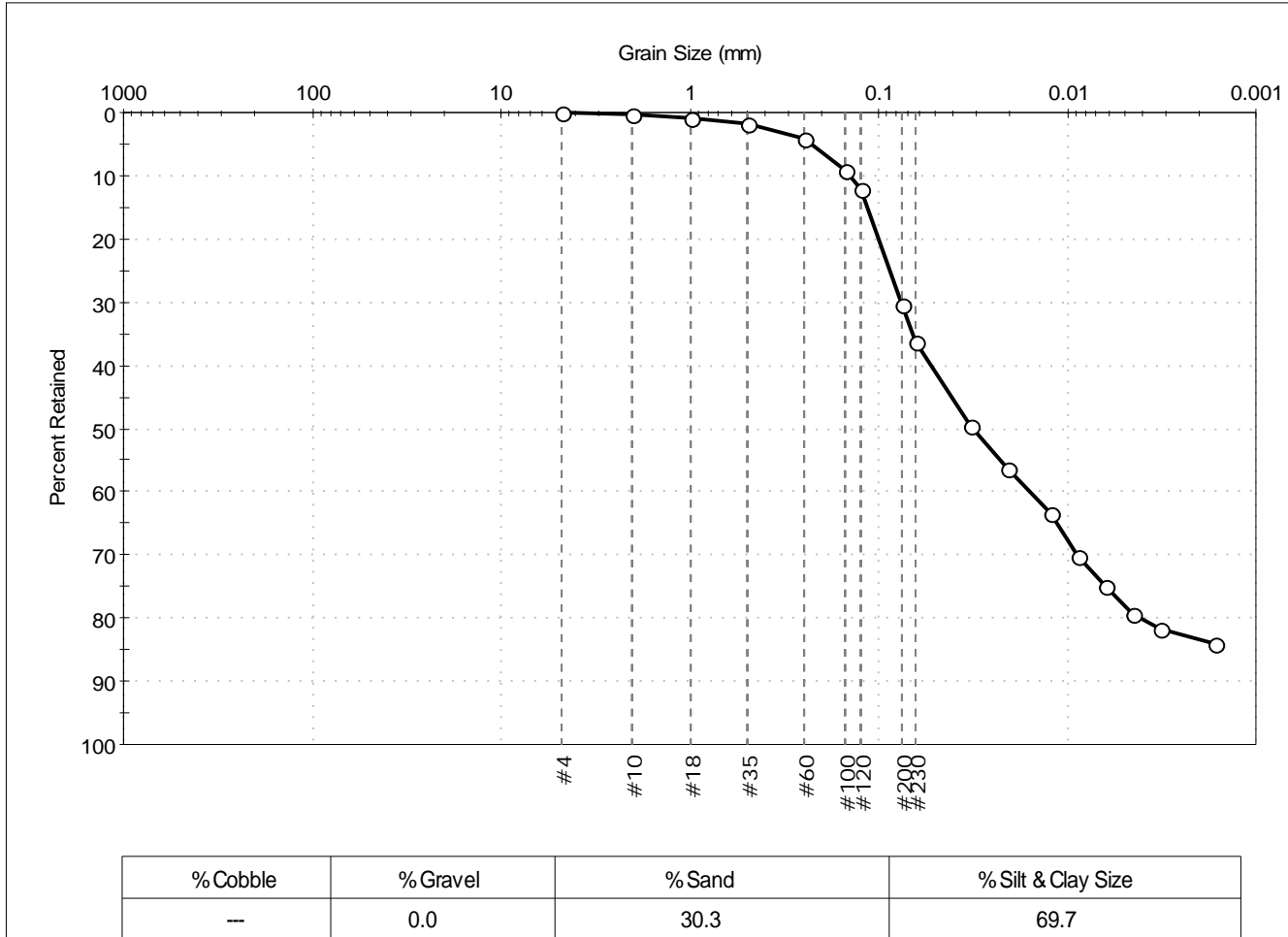
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ROUNDED         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                         | Project No: GTX-302366 |
| Boring ID: 339-14LTM                | Sample Type: bag            | Tested By: jbr                                    | Checked By: jdt        |
| Sample ID: NBH14-0077               | Test Date: 10/08/14         | Test Id: 309510                                   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, greenish gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 12           |               |          |
| #200       | 0.075              | 30           |               |          |
| #230       | 0.063              | 36           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 50           |               |          |
| ---        | 0.0208             | 56           |               |          |
| ---        | 0.0124             | 63           |               |          |
| ---        | 0.0088             | 70           |               |          |
| ---        | 0.0063             | 75           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0016             | 84           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1149 mm | D <sub>30</sub> = 0.0089 mm |
| D <sub>60</sub> = 0.0521 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0315 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

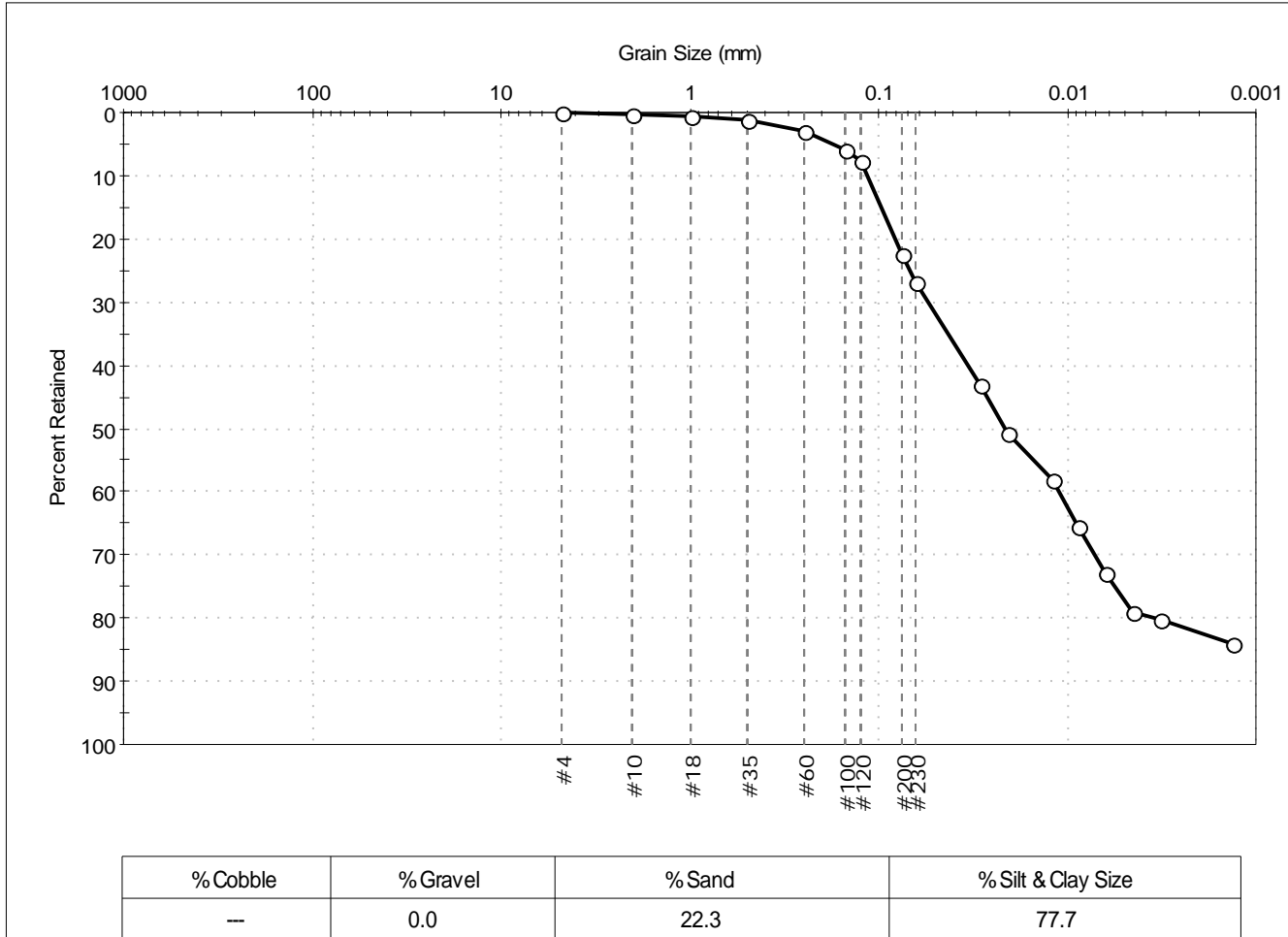
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                   |              |            |
|---------------------|-----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute       |              |            |
| Project:            | New Bedford Harbor                |              |            |
| Location:           | New Bedford, MA                   | Project No:  | GTX-302366 |
| Boring ID:          | 339-14LTM                         | Sample Type: | bag        |
| Sample ID:          | NBH14-0078                        | Test Date:   | 10/14/14   |
| Depth:              | ---                               | Test Id:     | 309511     |
| Test Comment:       | ---                               |              |            |
| Sample Description: | Wet, greenish gray silt with sand |              |            |
| Sample Comment:     | ---                               |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 22           |               |          |
| #230       | 0.063              | 27           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0291             | 43           |               |          |
| ---        | 0.0207             | 51           |               |          |
| ---        | 0.0121             | 58           |               |          |
| ---        | 0.0087             | 65           |               |          |
| ---        | 0.0063             | 73           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0013             | 84           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0970 mm | D <sub>30</sub> = 0.0071 mm |
| D <sub>60</sub> = 0.0338 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0213 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

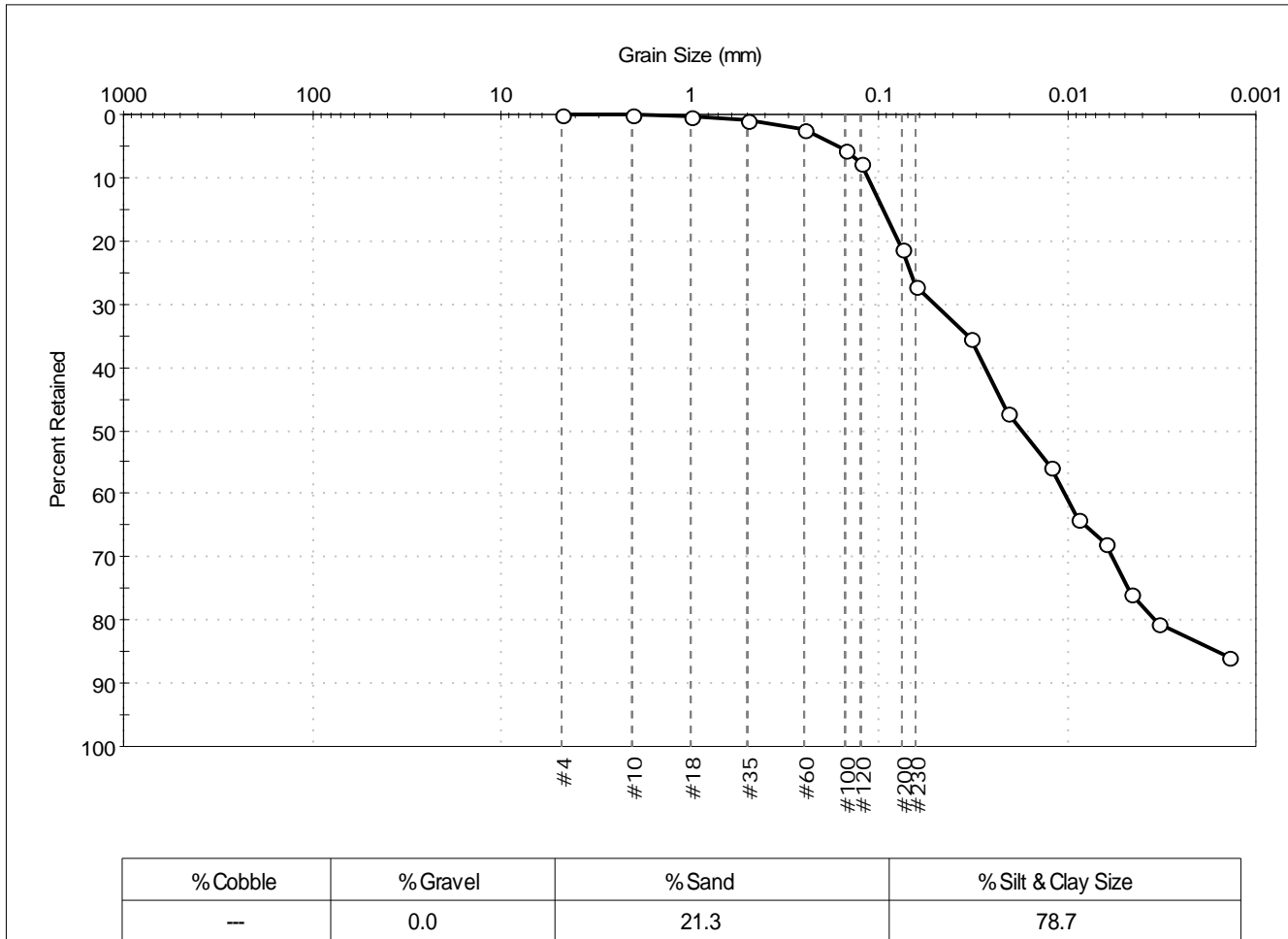
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                             | Project No: GTX-302366 |
| Boring ID: 339-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0079               | Test Date: 10/20/14         | Test Id: 309512                                       |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, greenish gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 21           |               |          |
| #230       | 0.063              | 27           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0327             | 35           |               |          |
| ---        | 0.0207             | 47           |               |          |
| ---        | 0.0123             | 56           |               |          |
| ---        | 0.0089             | 64           |               |          |
| ---        | 0.0063             | 68           |               |          |
| ---        | 0.0046             | 76           |               |          |
| ---        | 0.0033             | 81           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0947 mm | D <sub>30</sub> = 0.0058 mm |
| D <sub>60</sub> = 0.0274 mm | D <sub>15</sub> = 0.0016 mm |
| D <sub>50</sub> = 0.0175 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

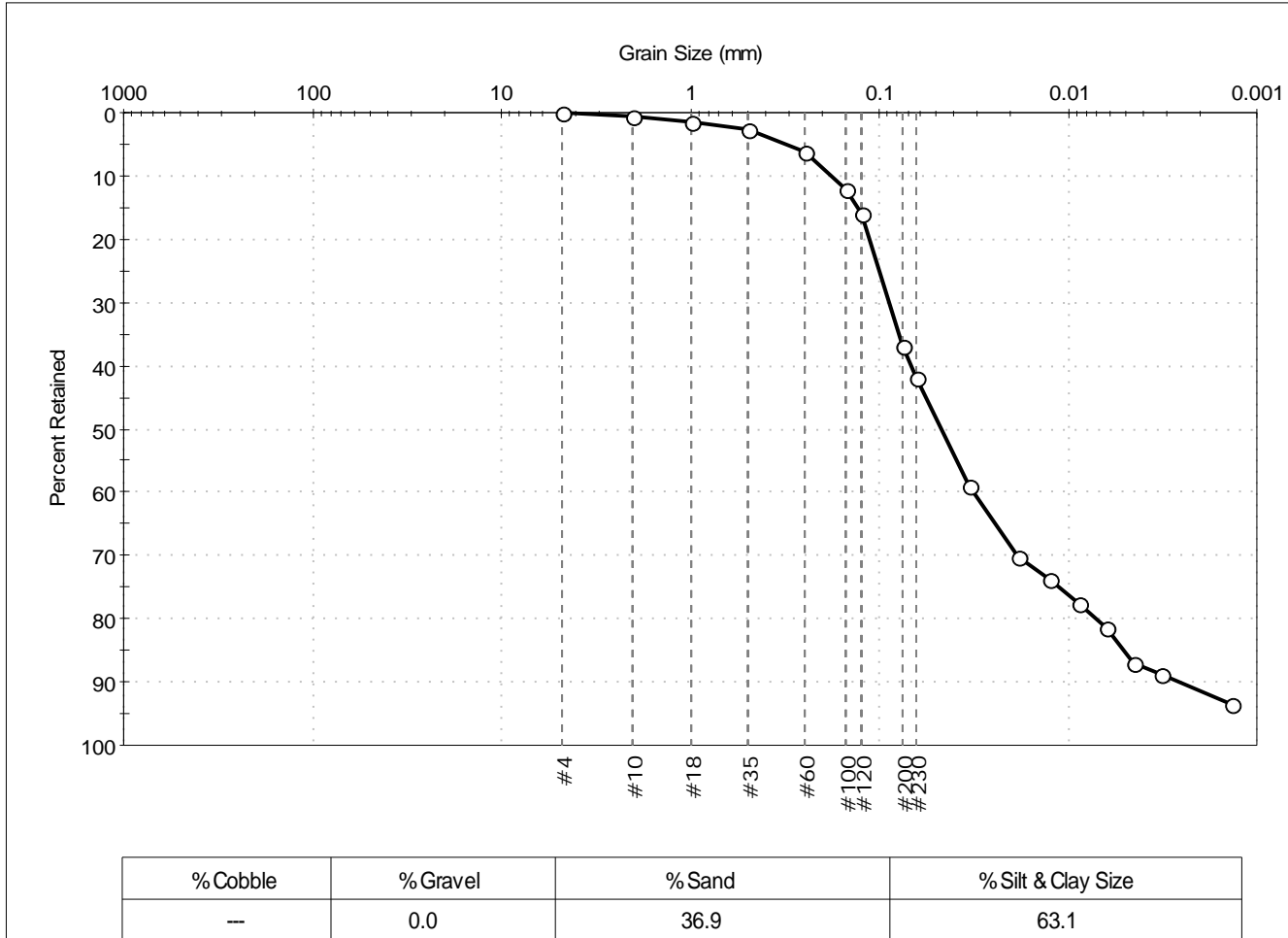
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 339-14LTM                              | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0080                             | Test Date: 10/21/14         | Test Id: 309513           |                        |
| Depth: ---  | Test Comment: ---           |                           |                        |
| Sample Description: Wet, greenish gray sandy silt |                             |                           |                        |
| Sample Comment: ---                               |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 12           |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 37           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0334             | 59           |               |          |
| ---        | 0.0184             | 70           |               |          |
| ---        | 0.0124             | 74           |               |          |
| ---        | 0.0089             | 78           |               |          |
| ---        | 0.0063             | 81           |               |          |
| ---        | 0.0045             | 87           |               |          |
| ---        | 0.0033             | 89           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1303 mm | D <sub>30</sub> = 0.0185 mm |
| D <sub>60</sub> = 0.0675 mm | D <sub>15</sub> = 0.0051 mm |
| D <sub>50</sub> = 0.0466 mm | D <sub>10</sub> = 0.0026 mm |
| C <sub>u</sub> = 25.962     | C <sub>c</sub> = 1.950      |

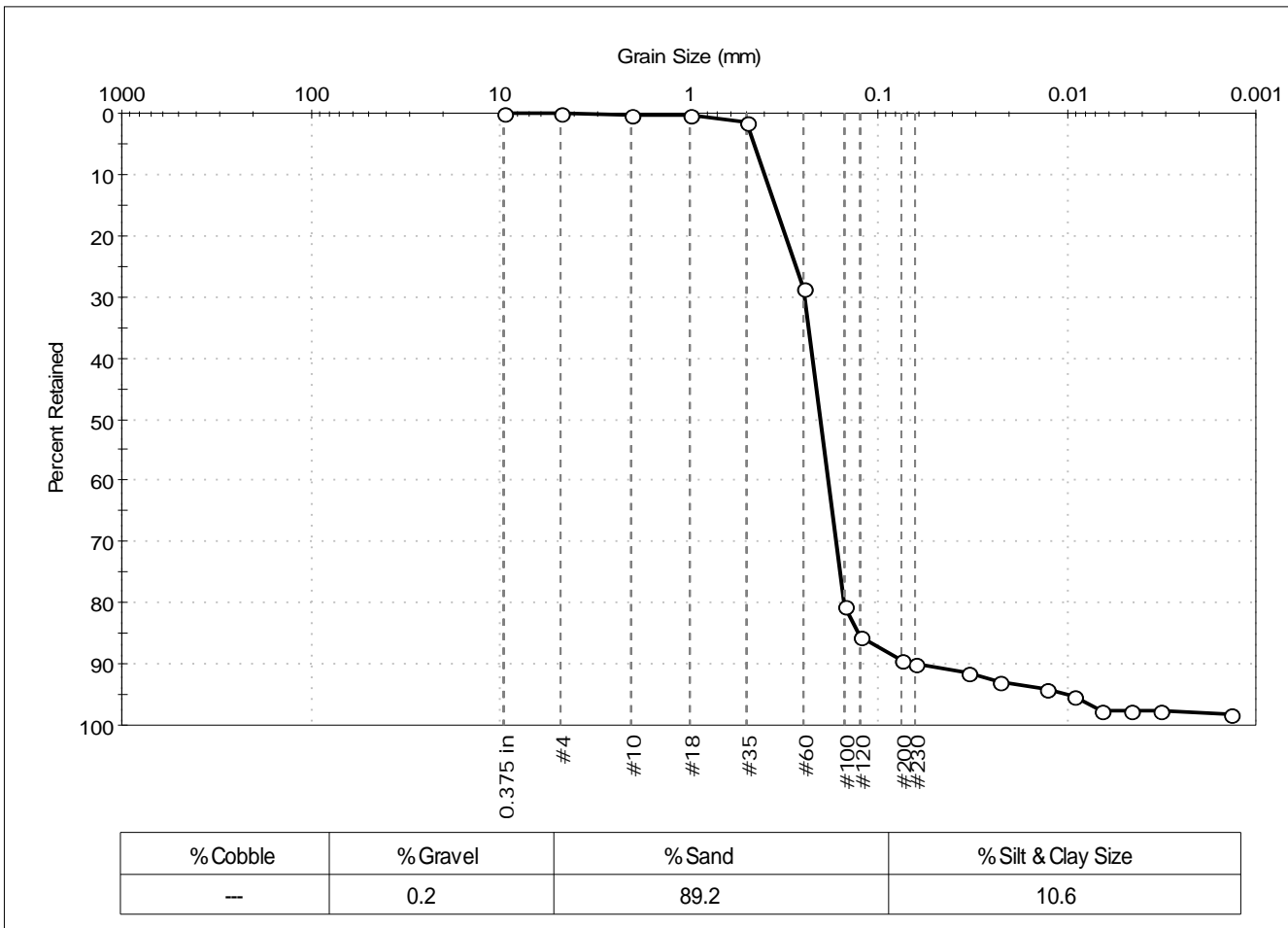
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                   |              |            |
|---------------------|-----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute       |              |            |
| Project:            | New Bedford Harbor                |              |            |
| Location:           | New Bedford, MA                   | Project No:  | GTX-302366 |
| Boring ID:          | 346-14LTM                         | Sample Type: | bag        |
| Sample ID:          | NBH14-0081                        | Test Date:   | 10/21/14   |
| Depth:              | ---                               | Test Id:     | 309514     |
| Test Comment:       | ---                               |              |            |
| Sample Description: | Wet, greenish gray sand with silt |              |            |
| Sample Comment:     | ---                               |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 29           |               |          |
| #100       | 0.15               | 81           |               |          |
| #120       | 0.12               | 85           |               |          |
| #200       | 0.075              | 89           |               |          |
| #230       | 0.063              | 90           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 92           |               |          |
| ---        | 0.0228             | 93           |               |          |
| ---        | 0.0130             | 94           |               |          |
| ---        | 0.0093             | 95           |               |          |
| ---        | 0.0066             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0032             | 98           |               |          |
| ---        | 0.0014             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3532 mm | D <sub>30</sub> = 0.1665 mm |
| D <sub>60</sub> = 0.2235 mm | D <sub>15</sub> = 0.1273 mm |
| D <sub>50</sub> = 0.2026 mm | D <sub>10</sub> = 0.0639 mm |
| C <sub>u</sub> = 3.498      | C <sub>c</sub> = 1.941      |

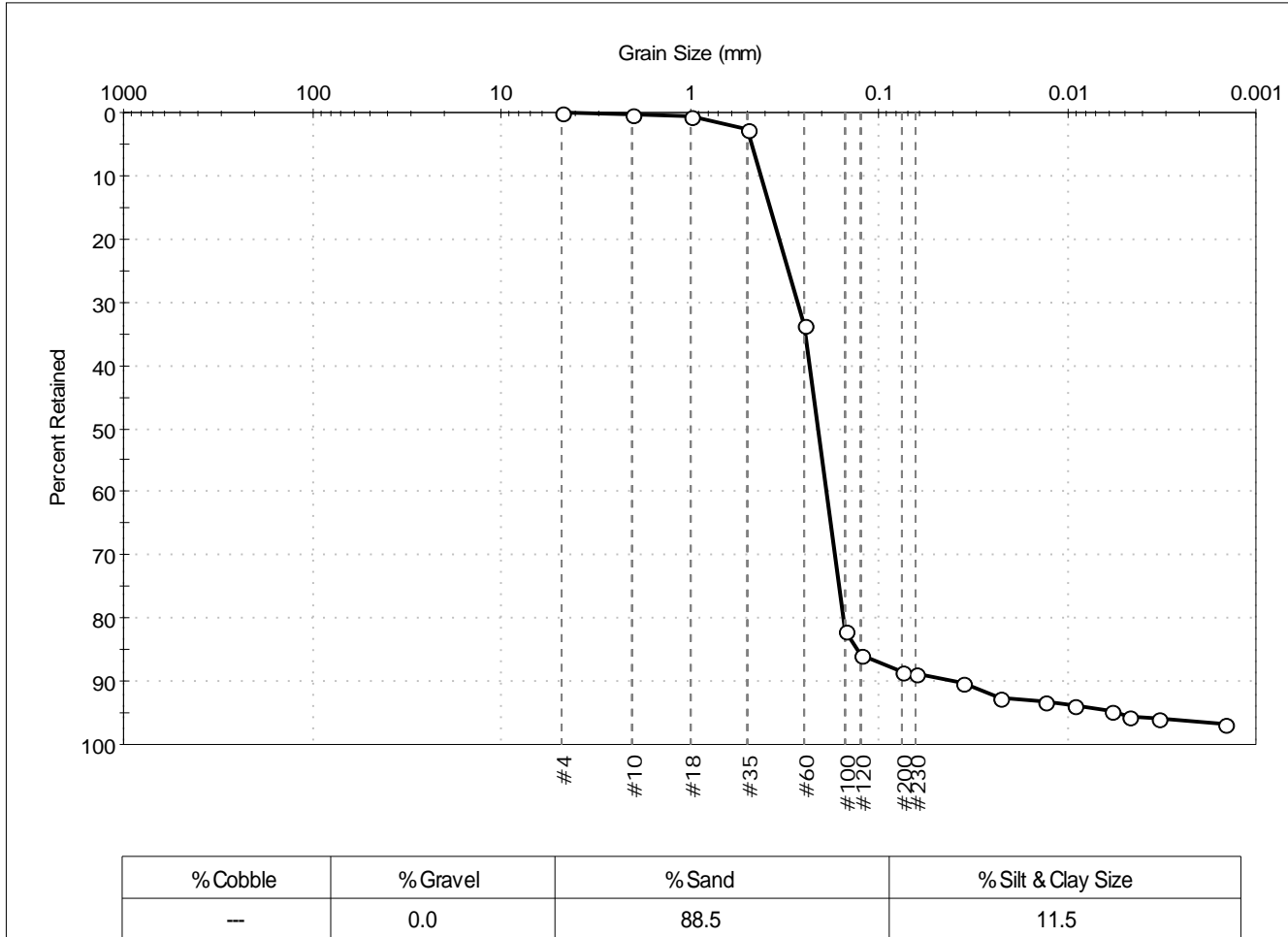
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 346-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0082               | Test Date: 10/15/14         | Test Id: 309515   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, greenish gray sand with silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 82           |               |          |
| #120       | 0.12               | 86           |               |          |
| #200       | 0.075              | 89           |               |          |
| #230       | 0.063              | 89           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0359             | 90           |               |          |
| ---        | 0.0231             | 93           |               |          |
| ---        | 0.0132             | 93           |               |          |
| ---        | 0.0092             | 94           |               |          |
| ---        | 0.0059             | 95           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0015             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3793 mm | D <sub>30</sub> = 0.1703 mm |
| D <sub>60</sub> = 0.2340 mm | D <sub>15</sub> = 0.1301 mm |
| D <sub>50</sub> = 0.2105 mm | D <sub>10</sub> = 0.0394 mm |
| C <sub>u</sub> = 5.939      | C <sub>c</sub> = 3.146      |

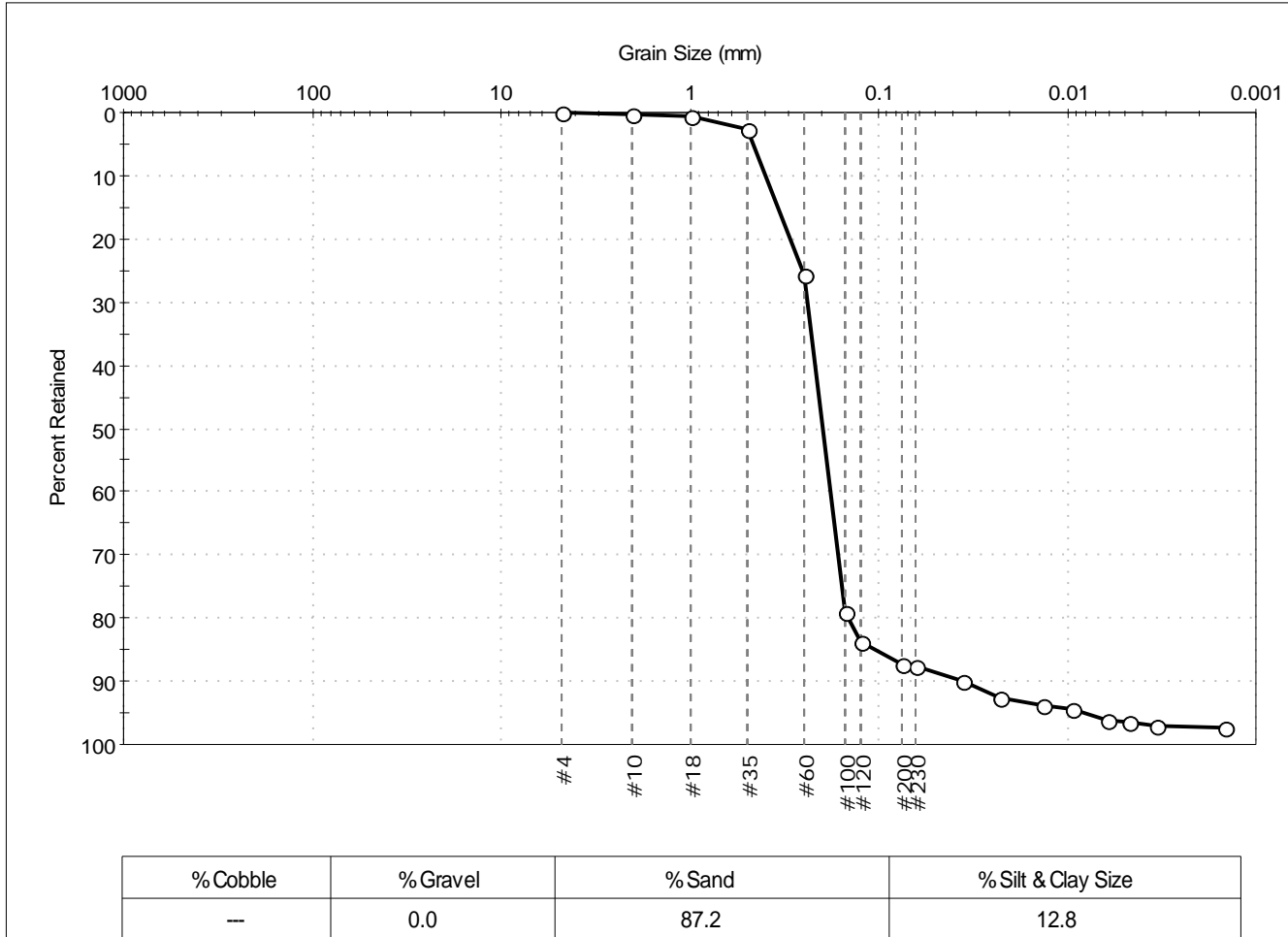
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 346-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0083                      | Test Date:   | 10/15/14   |
| Depth:              | ---                             | Test Id:     | 309516     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Moist, greenish gray silty sand |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 79           |               |          |
| #120       | 0.12               | 84           |               |          |
| #200       | 0.075              | 87           |               |          |
| #230       | 0.063              | 88           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0360             | 90           |               |          |
| ---        | 0.0229             | 93           |               |          |
| ---        | 0.0134             | 94           |               |          |
| ---        | 0.0094             | 94           |               |          |
| ---        | 0.0061             | 96           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0034             | 97           |               |          |
| ---        | 0.0015             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3446 mm | D <sub>30</sub> = 0.1637 mm |
| D <sub>60</sub> = 0.2178 mm | D <sub>15</sub> = 0.1048 mm |
| D <sub>50</sub> = 0.1980 mm | D <sub>10</sub> = 0.0368 mm |
| C <sub>u</sub> = 5.918      | C <sub>c</sub> = 3.343      |

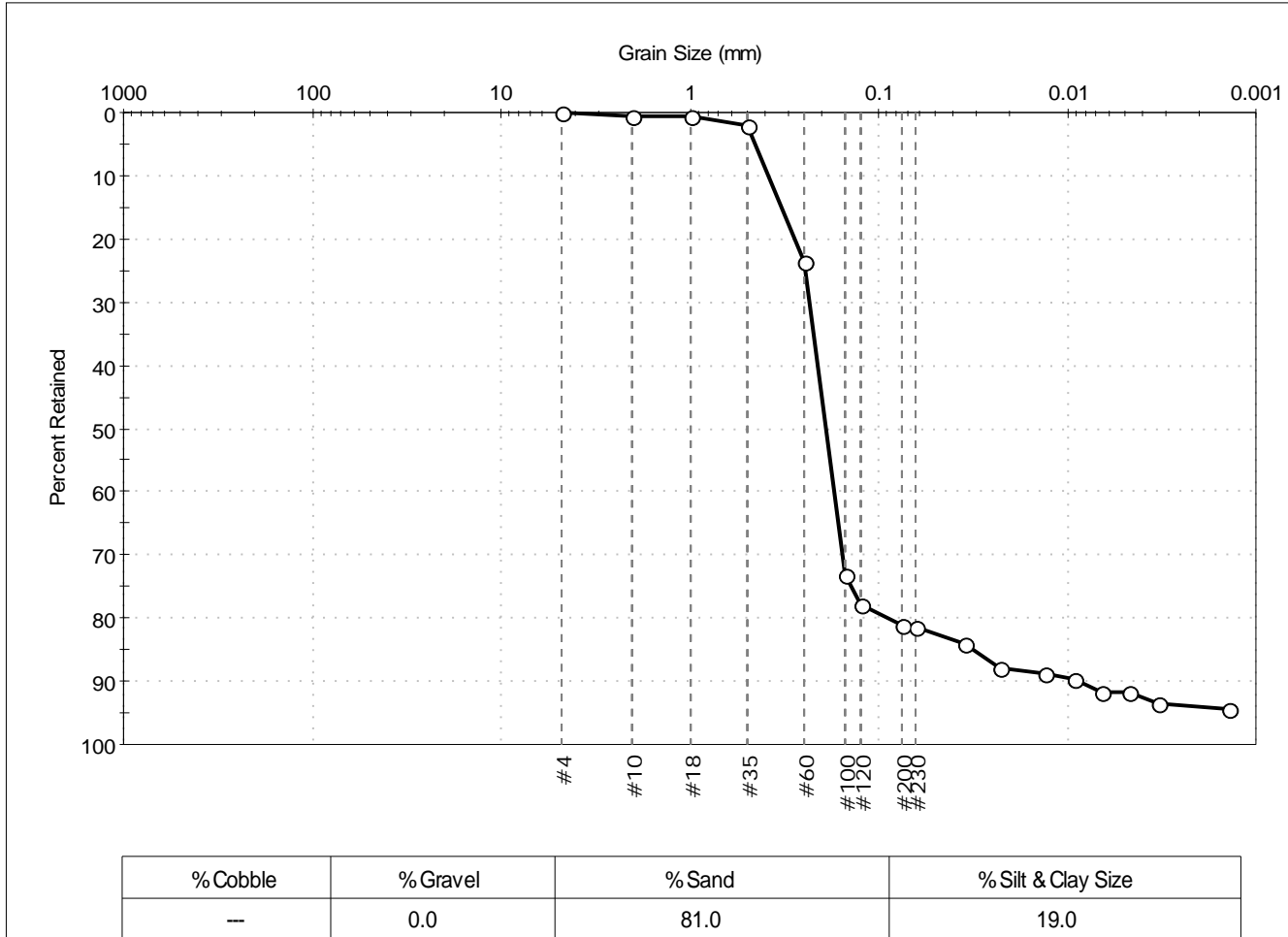
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                               |              |            |
|---------------------|-------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute   |              |            |
| Project:            | New Bedford Harbor            |              |            |
| Location:           | New Bedford, MA               | Project No:  | GTX-302366 |
| Boring ID:          | 346-14LTM                     | Sample Type: | bag        |
| Sample ID:          | NBH14-0084                    | Test Date:   | 10/21/14   |
| Depth:              | ---                           | Test Id:     | 309517     |
| Test Comment:       | ---                           |              |            |
| Sample Description: | Wet, greenish gray silty sand |              |            |
| Sample Comment:     | ----                          |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 73           |               |          |
| #120       | 0.12               | 78           |               |          |
| #200       | 0.075              | 81           |               |          |
| #230       | 0.063              | 81           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0353             | 84           |               |          |
| ---        | 0.0229             | 88           |               |          |
| ---        | 0.0132             | 89           |               |          |
| ---        | 0.0093             | 90           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0047             | 92           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3297 mm | D <sub>30</sub> = 0.1548 mm |
| D <sub>60</sub> = 0.2110 mm | D <sub>15</sub> = 0.0322 mm |
| D <sub>50</sub> = 0.1903 mm | D <sub>10</sub> = 0.0089 mm |
| C <sub>u</sub> = 23.708     | C <sub>c</sub> = 12.761     |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

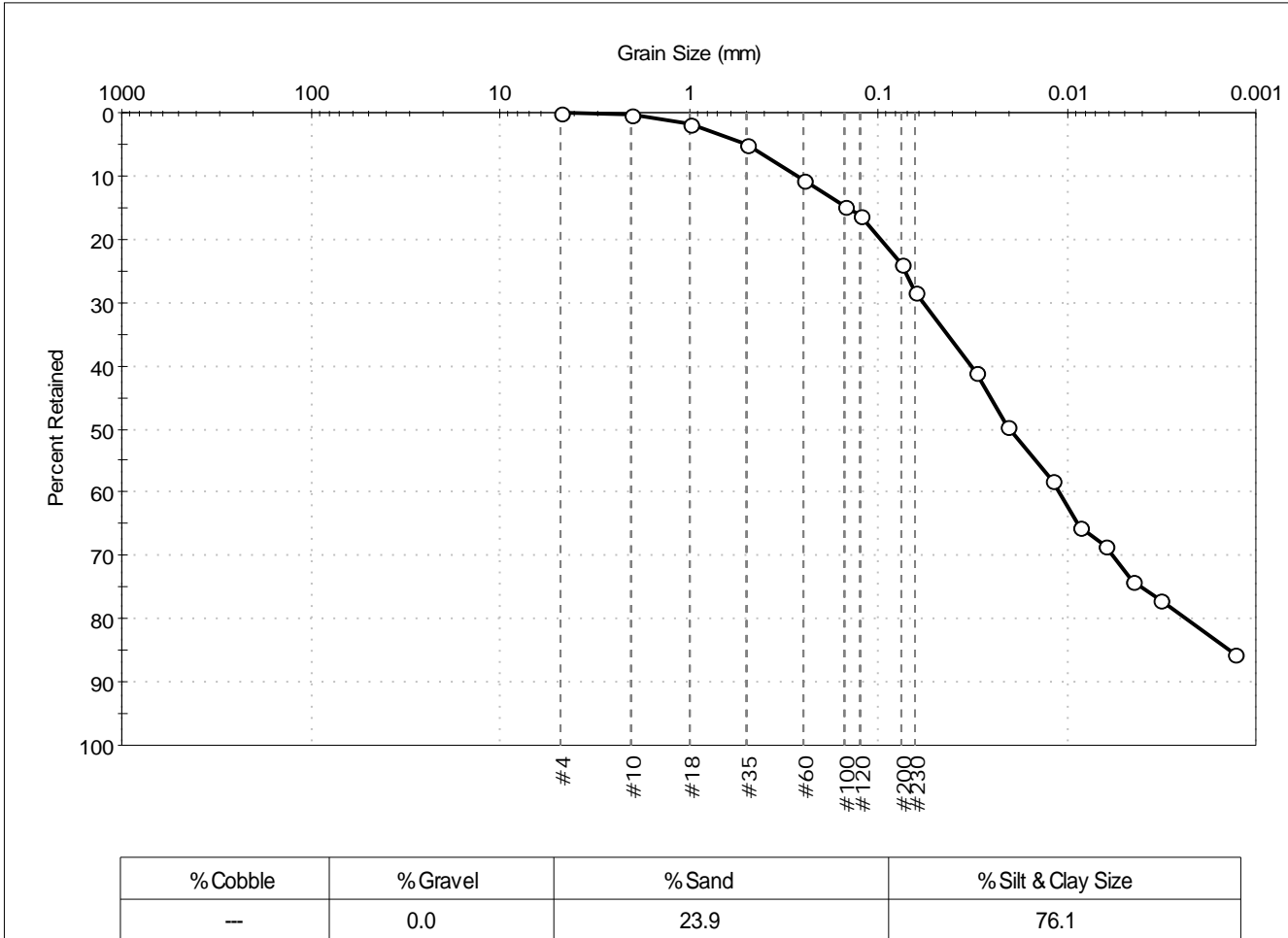
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                             | Project No: GTX-302366 |
| Boring ID: 340-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0085               | Test Date: 10/08/14         | Test Id: 309518                                       |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, greenish gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 24           |               |          |
| #230       | 0.063              | 28           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0303             | 41           |               |          |
| ---        | 0.0209             | 50           |               |          |
| ---        | 0.0120             | 58           |               |          |
| ---        | 0.0087             | 65           |               |          |
| ---        | 0.0063             | 68           |               |          |
| ---        | 0.0045             | 74           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0013             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1438 mm | D <sub>30</sub> = 0.0057 mm |
| D <sub>60</sub> = 0.0319 mm | D <sub>15</sub> = 0.0014 mm |
| D <sub>50</sub> = 0.0203 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

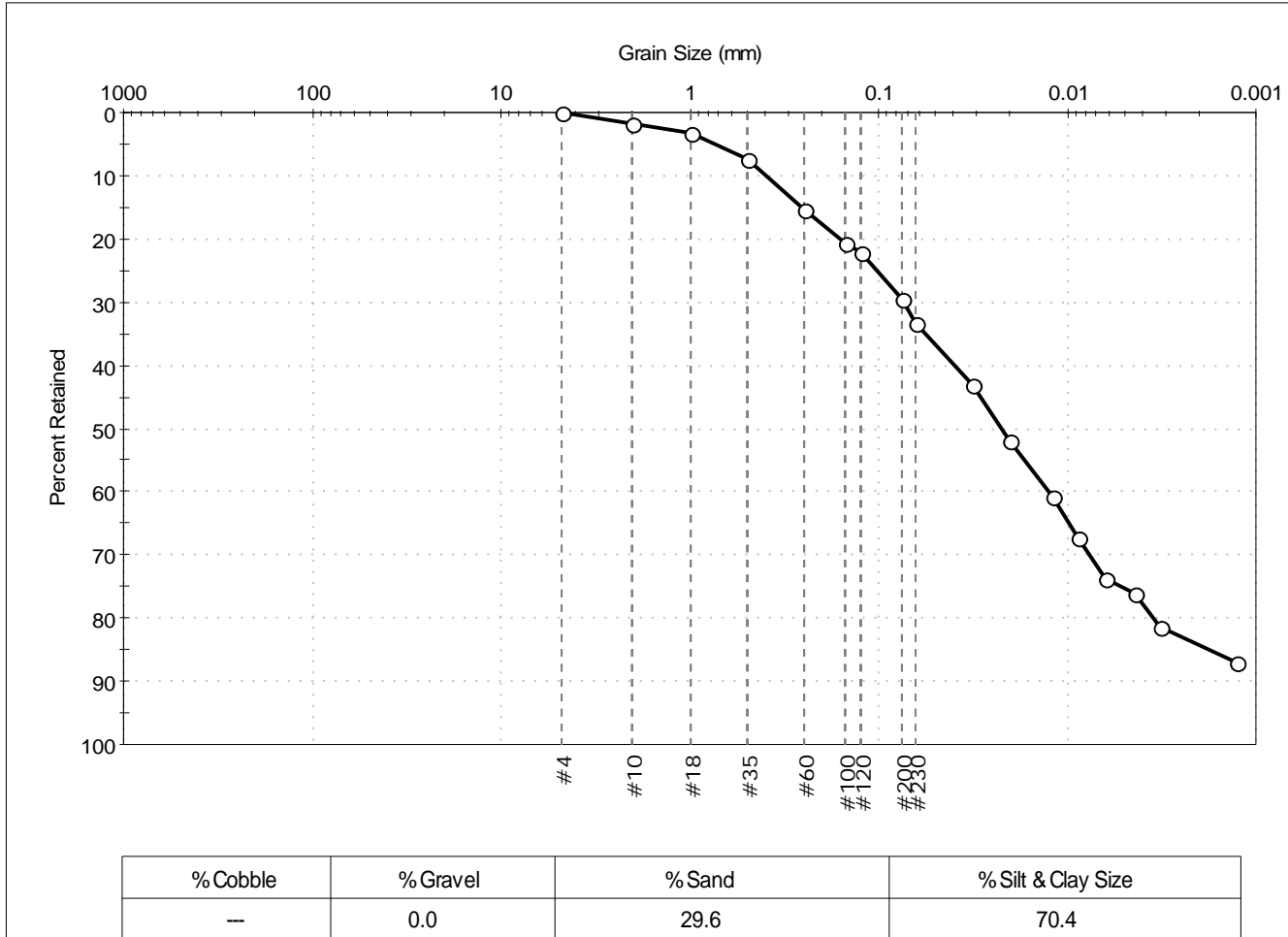
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 340-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0086               | Test Date: 10/08/14         | Test Id: 309519   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, greenish gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 30           |               |          |
| #230       | 0.063              | 33           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0322             | 43           |               |          |
| ---        | 0.0201             | 52           |               |          |
| ---        | 0.0121             | 61           |               |          |
| ---        | 0.0087             | 67           |               |          |
| ---        | 0.0063             | 74           |               |          |
| ---        | 0.0044             | 76           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0013             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2543 mm | D <sub>30</sub> = 0.0076 mm |
| D <sub>60</sub> = 0.0400 mm | D <sub>15</sub> = 0.0018 mm |
| D <sub>50</sub> = 0.0223 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

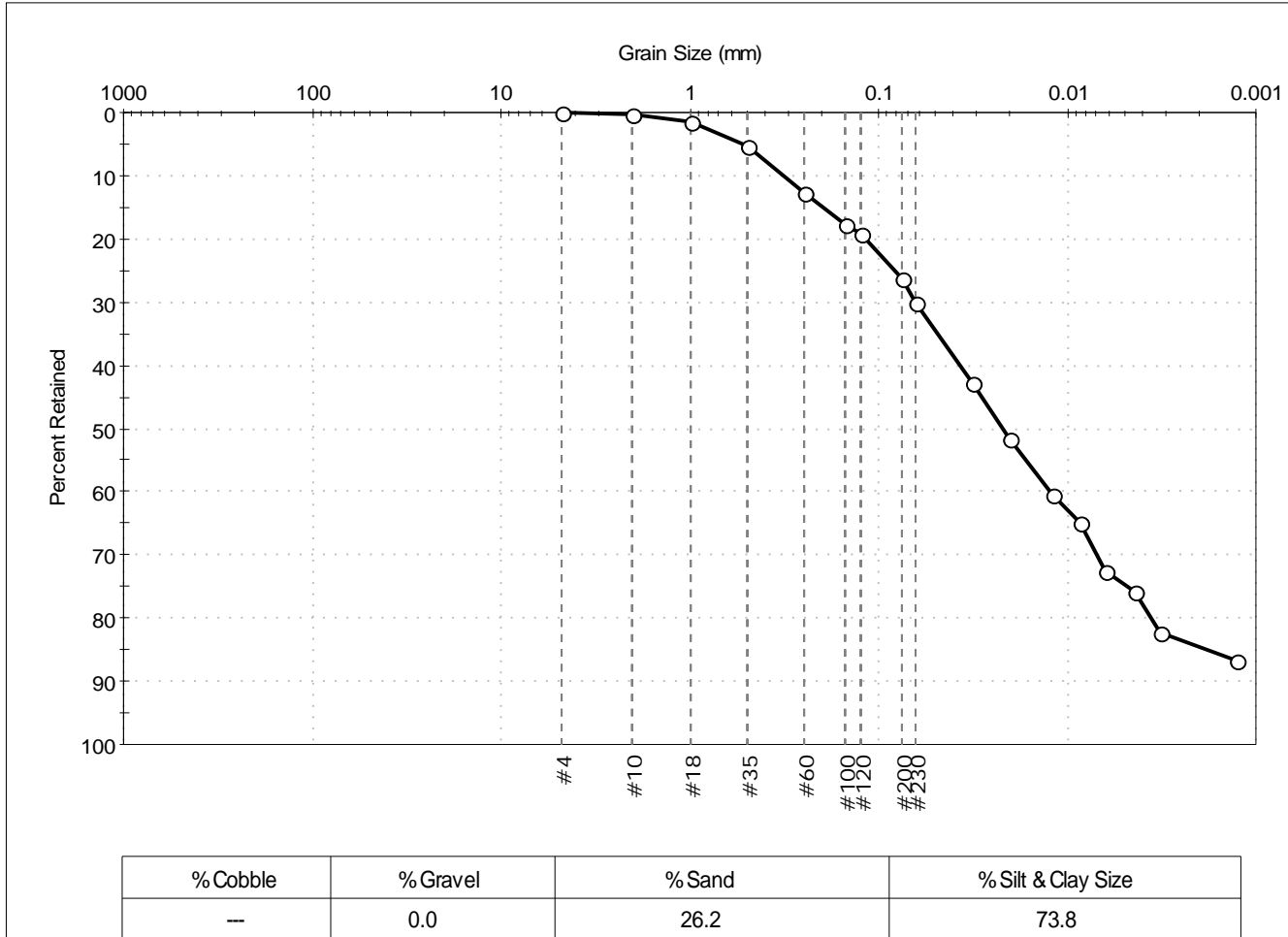
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 340-14LTM                                    | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0086DUP                                | Test Date: 10/08/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 309520             |                           |                        |
| Test Comment: ---                                       |                             |                           |                        |
| Sample Description: Moist, greenish gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                     |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 18           |               |          |
| #120       | 0.12               | 19           |               |          |
| #200       | 0.075              | 26           |               |          |
| #230       | 0.063              | 30           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 43           |               |          |
| ---        | 0.0203             | 52           |               |          |
| ---        | 0.0120             | 60           |               |          |
| ---        | 0.0087             | 65           |               |          |
| ---        | 0.0062             | 73           |               |          |
| ---        | 0.0043             | 76           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0013             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1976 mm | D <sub>30</sub> = 0.0070 mm |
| D <sub>60</sub> = 0.0371 mm | D <sub>15</sub> = 0.0019 mm |
| D <sub>50</sub> = 0.0222 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

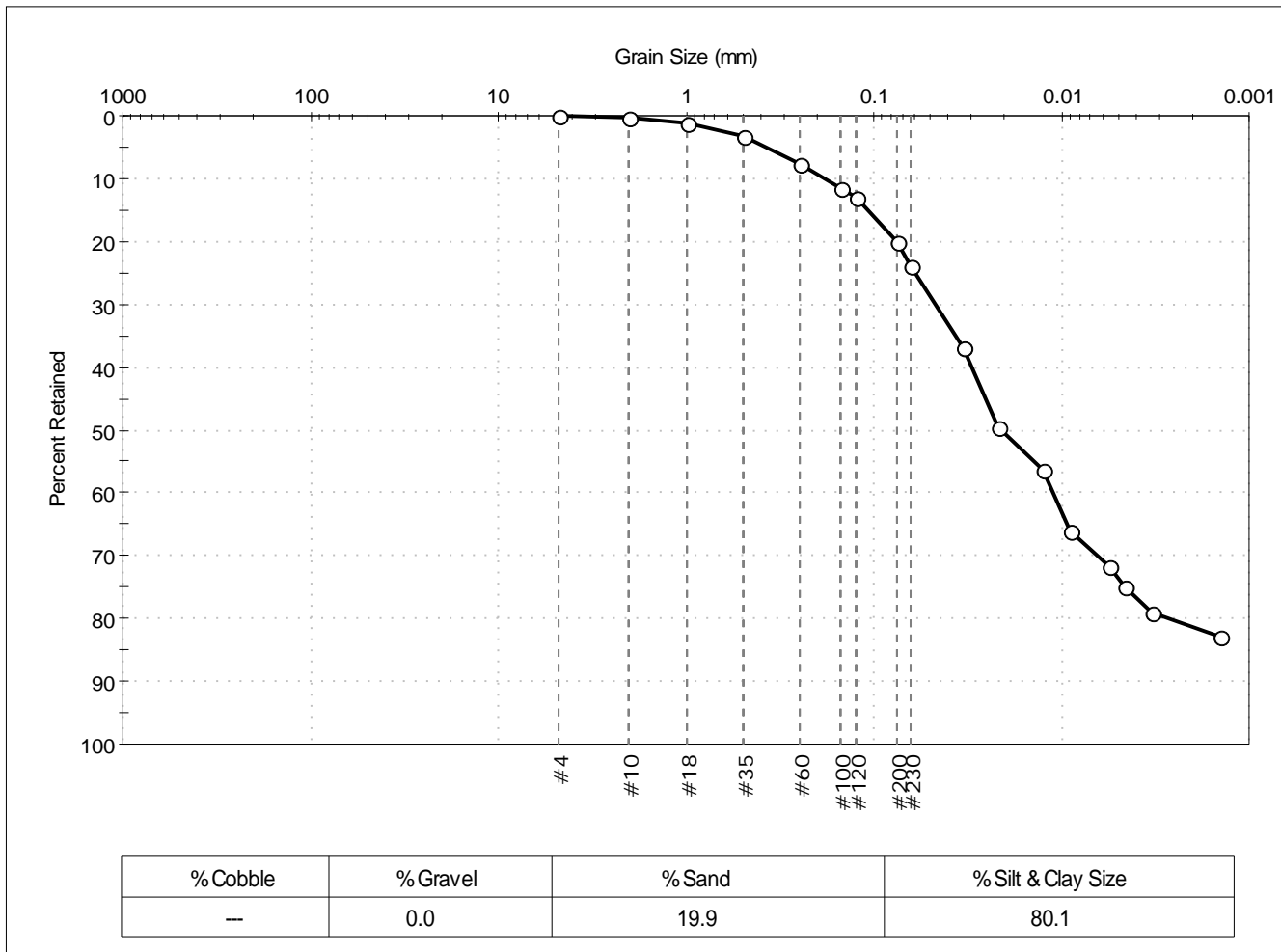
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 340-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0087               | Test Date: 10/08/14         | Test Id: 309521  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, greenish gray silt wih sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 8            |               |          |
| #100       | 0.15               | 12           |               |          |
| #120       | 0.12               | 13           |               |          |
| #200       | 0.075              | 20           |               |          |
| #230       | 0.063              | 24           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0335             | 37           |               |          |
| ---        | 0.0216             | 49           |               |          |
| ---        | 0.0125             | 56           |               |          |
| ---        | 0.0090             | 66           |               |          |
| ---        | 0.0056             | 72           |               |          |
| ---        | 0.0046             | 75           |               |          |
| ---        | 0.0033             | 79           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1075 mm | D <sub>30</sub> = 0.0065 mm |
| D <sub>60</sub> = 0.0300 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0206 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

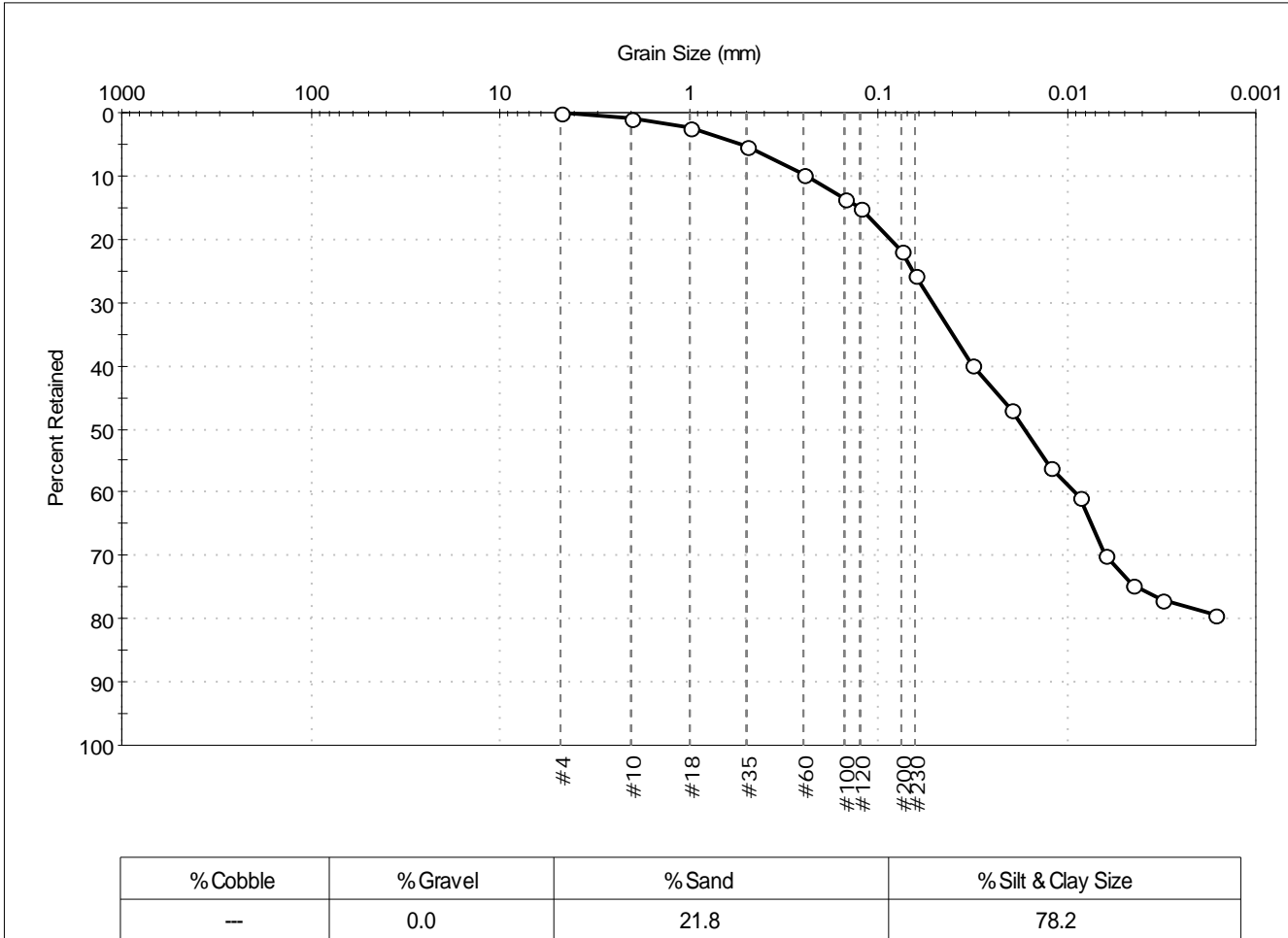
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 340-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0088               | Test Date: 10/08/14         | Test Id: 309522   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, greenish gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 14           |               |          |
| #120       | 0.12               | 15           |               |          |
| #200       | 0.075              | 22           |               |          |
| #230       | 0.063              | 26           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 40           |               |          |
| ---        | 0.0199             | 47           |               |          |
| ---        | 0.0121             | 56           |               |          |
| ---        | 0.0086             | 61           |               |          |
| ---        | 0.0062             | 70           |               |          |
| ---        | 0.0045             | 75           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0016             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1244 mm | D <sub>30</sub> = 0.0062 mm |
| D <sub>60</sub> = 0.0318 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0168 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

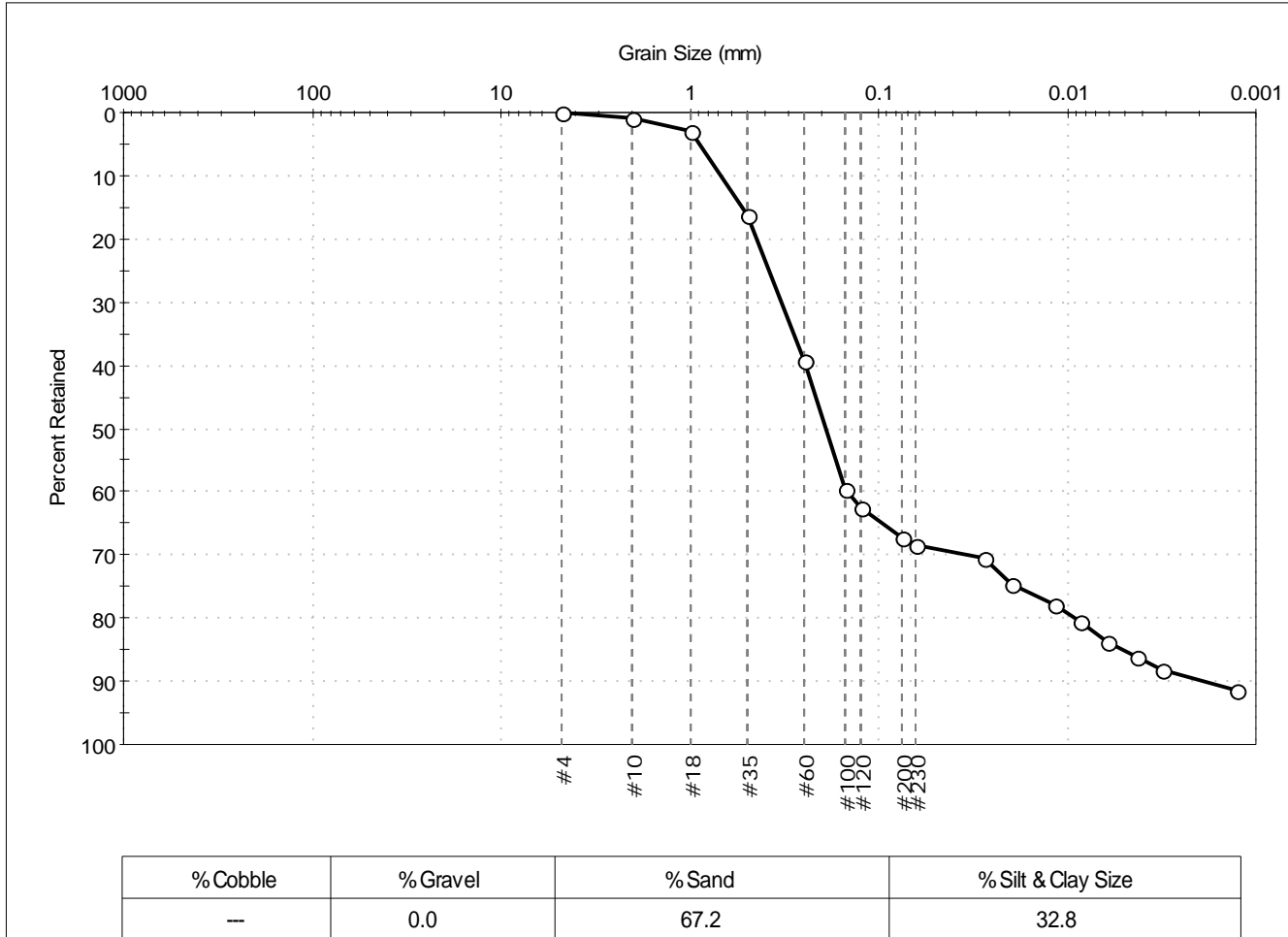
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute               | Project No: GTX-302366 |
| Project: New Bedford Harbor                       |                        |
| Location: New Bedford, MA                         |                        |
| Boring ID: 341-14LTM                              | Sample Type: bag       |
| Sample ID: NBH14-0089                             | Test Date: 10/08/14    |
| Depth: ---  | Test Id: 309523        |
| Test Comment: ---                                 | Tested By: jbr         |
| Sample Description: Wet, greenish gray silty sand | Checked By: jdt        |
| Sample Comment: ---                               |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 39           |               |          |
| #100       | 0.15               | 60           |               |          |
| #120       | 0.12               | 63           |               |          |
| #200       | 0.075              | 67           |               |          |
| #230       | 0.063              | 69           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0278             | 70           |               |          |
| ---        | 0.0199             | 75           |               |          |
| ---        | 0.0117             | 78           |               |          |
| ---        | 0.0085             | 81           |               |          |
| ---        | 0.0061             | 84           |               |          |
| ---        | 0.0043             | 86           |               |          |
| ---        | 0.0031             | 88           |               |          |
| ---        | 0.0013             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5319 mm | D <sub>30</sub> = 0.0327 mm |
| D <sub>60</sub> = 0.2452 mm | D <sub>15</sub> = 0.0051 mm |
| D <sub>50</sub> = 0.1907 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 129.053    | C <sub>c</sub> = 2.295      |

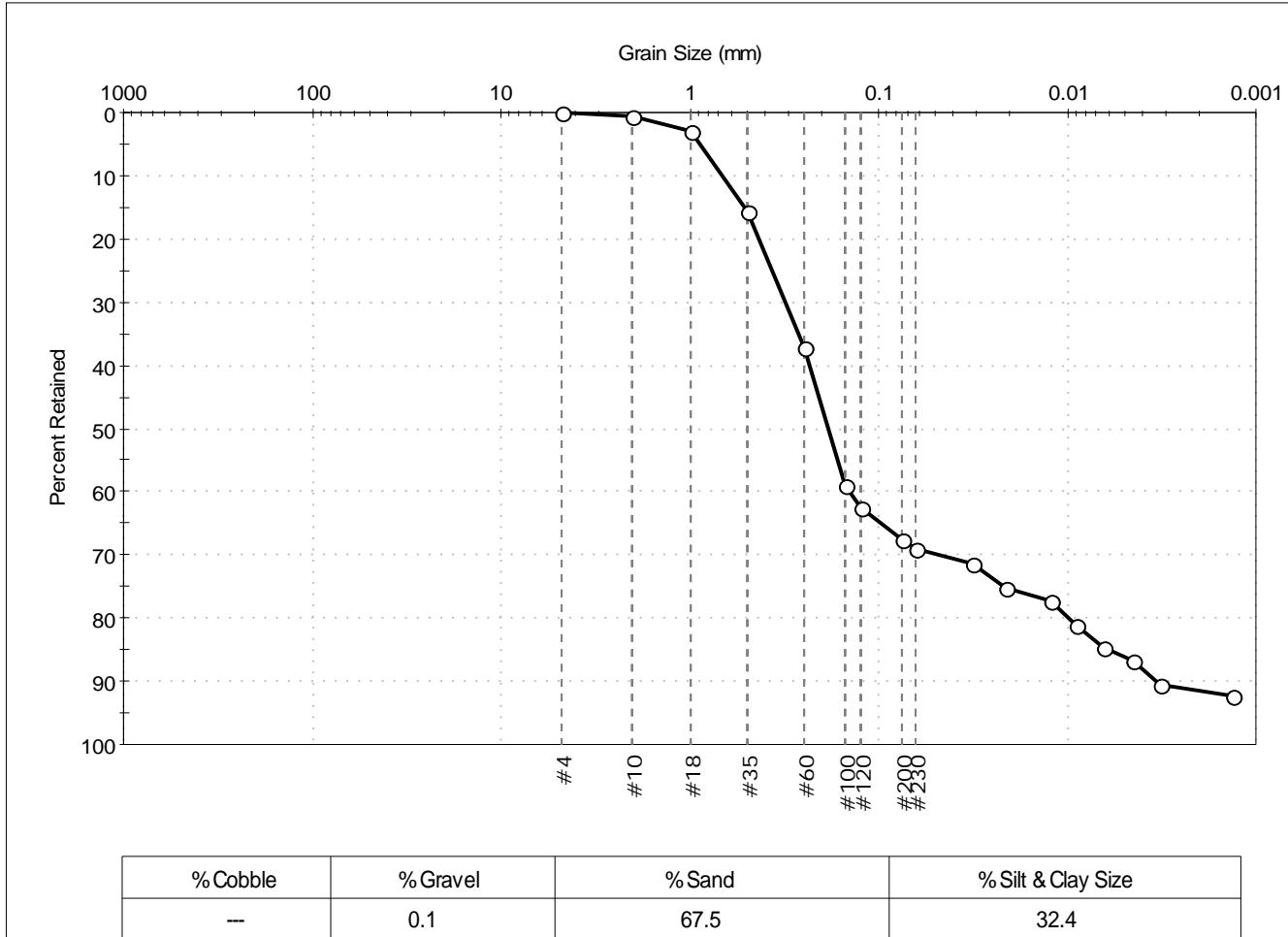
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 341-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0090                      | Test Date:   | 10/23/14   |
| Depth:              | ---                             | Test Id:     | 309524     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Moist, greenish gray silty sand |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 37           |               |          |
| #100       | 0.15               | 59           |               |          |
| #120       | 0.12               | 63           |               |          |
| #200       | 0.075              | 68           |               |          |
| #230       | 0.063              | 69           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 71           |               |          |
| ---        | 0.0210             | 75           |               |          |
| ---        | 0.0122             | 77           |               |          |
| ---        | 0.0089             | 81           |               |          |
| ---        | 0.0064             | 85           |               |          |
| ---        | 0.0045             | 87           |               |          |
| ---        | 0.0032             | 90           |               |          |
| ---        | 0.0013             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5140 mm | D <sub>30</sub> = 0.0470 mm |
| D <sub>60</sub> = 0.2343 mm | D <sub>15</sub> = 0.0061 mm |
| D <sub>50</sub> = 0.1852 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 68.912     | C <sub>c</sub> = 2.773      |

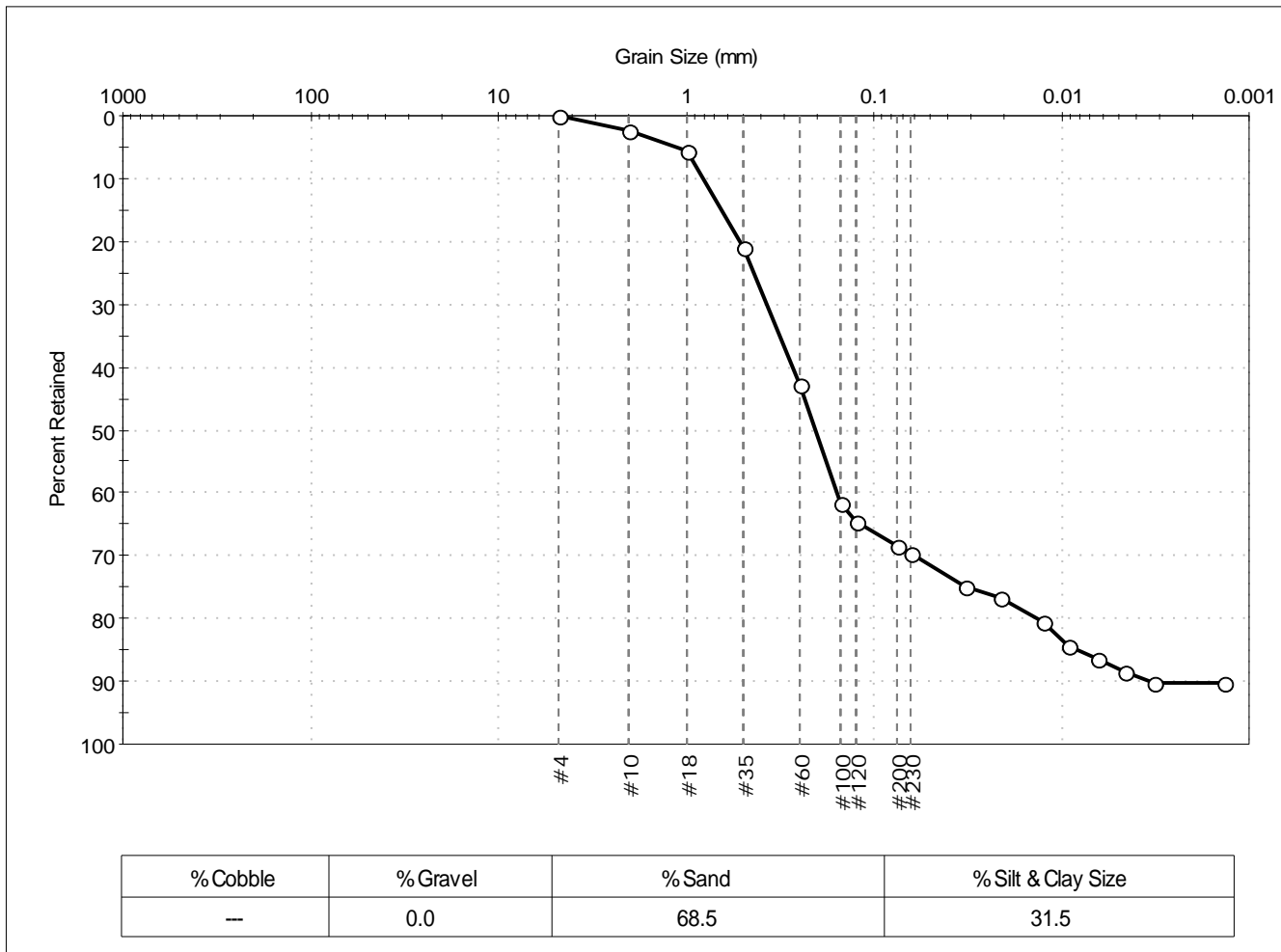
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 341-14LTM                            | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0091                           | Test Date: 10/08/14         | Test Id: 309525           |                        |
| Depth: ---                                      |                             |                           |                        |
| Test Comment: ---                               |                             |                           |                        |
| Sample Description: Moist, dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                             |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 43           |               |          |
| #100       | 0.15               | 62           |               |          |
| #120       | 0.12               | 64           |               |          |
| #200       | 0.075              | 69           |               |          |
| #230       | 0.063              | 70           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 75           |               |          |
| ---        | 0.0210             | 77           |               |          |
| ---        | 0.0127             | 81           |               |          |
| ---        | 0.0091             | 85           |               |          |
| ---        | 0.0064             | 86           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6547 mm | D <sub>30</sub> = 0.0598 mm |
| D <sub>60</sub> = 0.2739 mm | D <sub>15</sub> = 0.0084 mm |
| D <sub>50</sub> = 0.2059 mm | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 80.559     | C <sub>c</sub> = 3.840      |

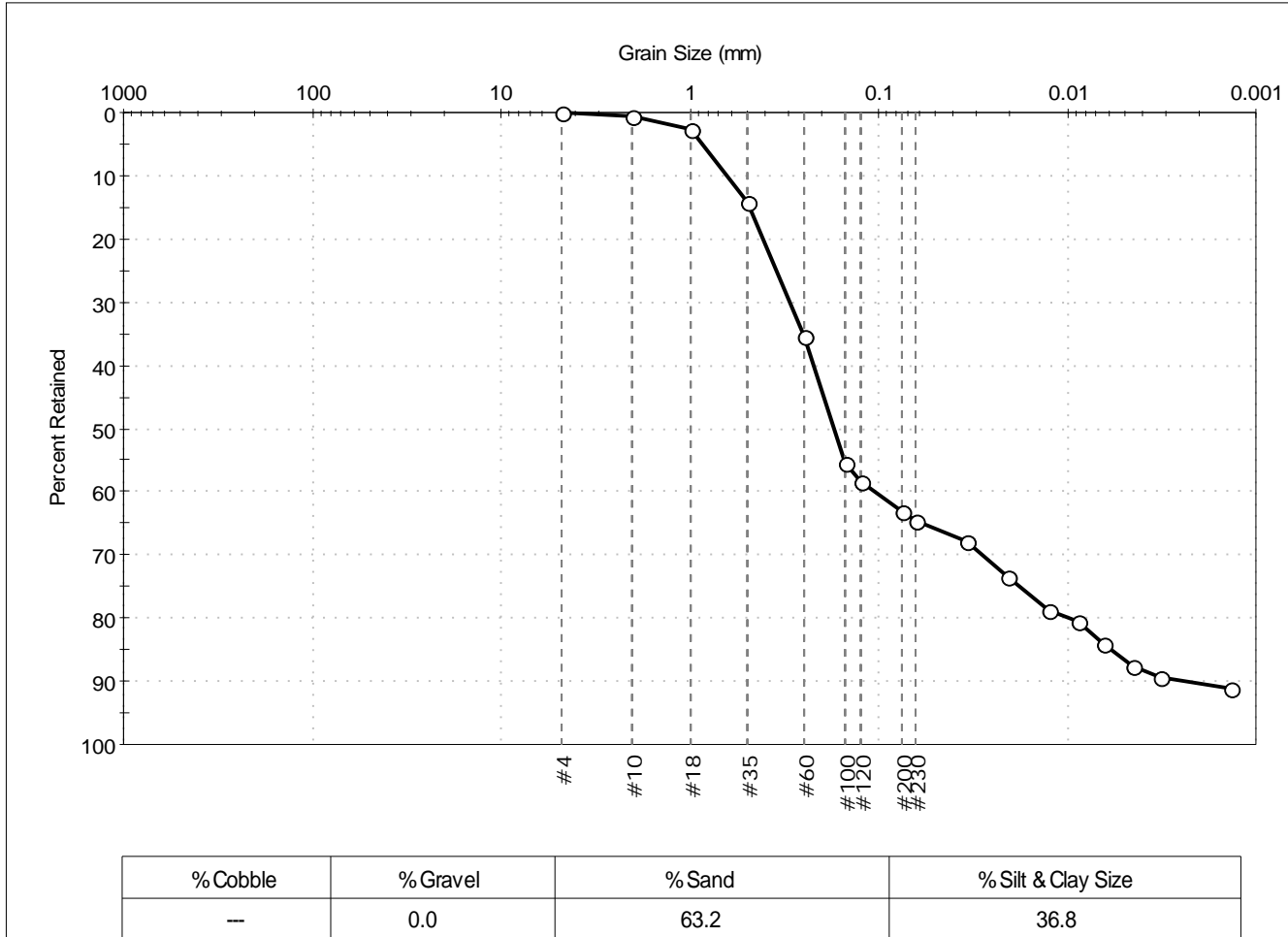
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 341-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0092                  | Test Date:   | 10/08/14   |
| Depth:              | ---                         | Test Id:     | 309526     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, dark gray silty sand |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 35           |               |          |
| #100       | 0.15               | 55           |               |          |
| #120       | 0.12               | 58           |               |          |
| #200       | 0.075              | 63           |               |          |
| #230       | 0.063              | 65           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0343             | 68           |               |          |
| ---        | 0.0208             | 73           |               |          |
| ---        | 0.0125             | 79           |               |          |
| ---        | 0.0088             | 80           |               |          |
| ---        | 0.0064             | 84           |               |          |
| ---        | 0.0045             | 88           |               |          |
| ---        | 0.0032             | 89           |               |          |
| ---        | 0.0014             | 91           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4882 mm | D <sub>30</sub> = 0.0283 mm |
| D <sub>60</sub> = 0.2220 mm | D <sub>15</sub> = 0.0058 mm |
| D <sub>50</sub> = 0.1724 mm | D <sub>10</sub> = 0.0023 mm |
| C <sub>u</sub> = 96.522     | C <sub>c</sub> = 1.569      |

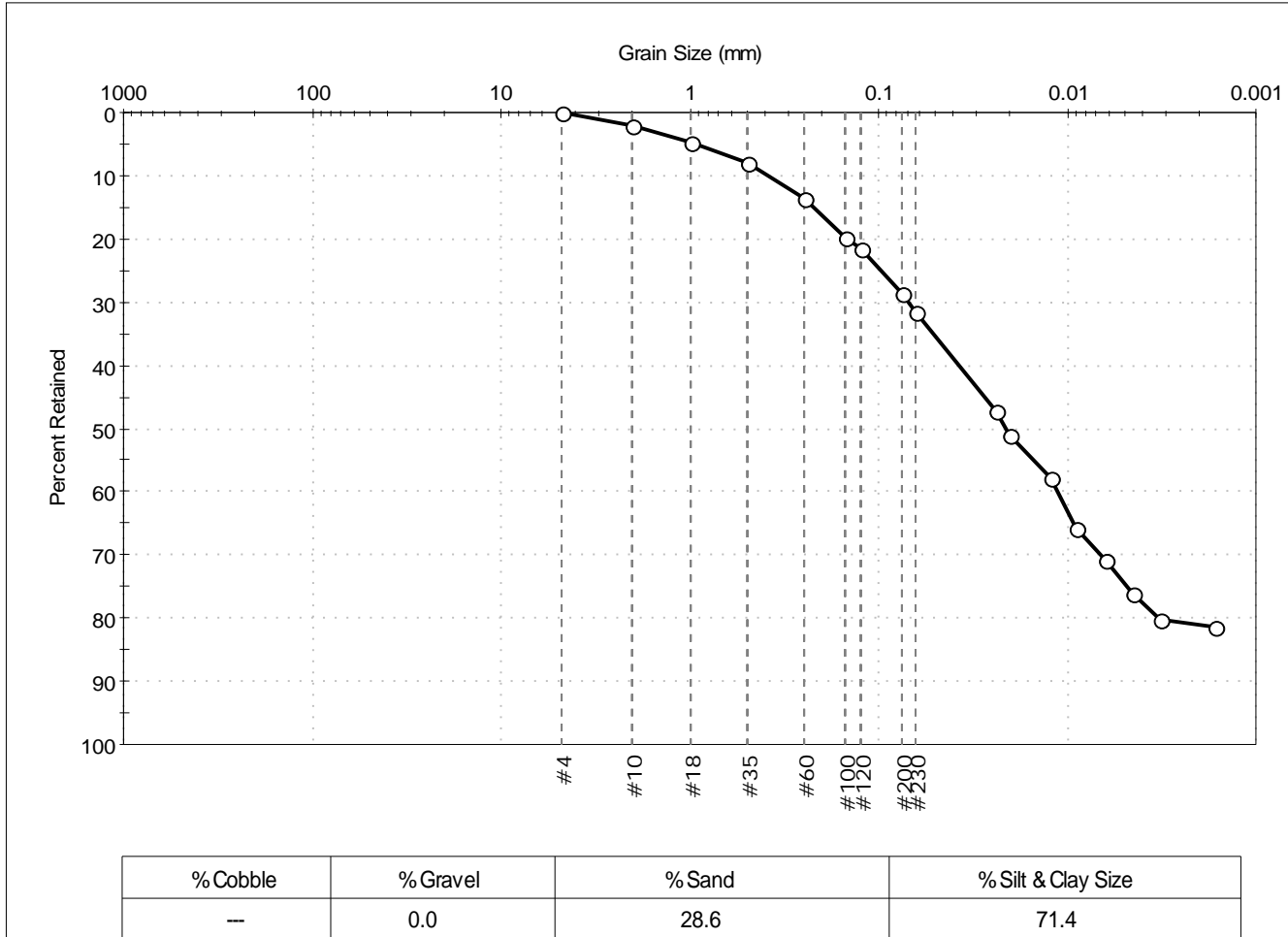
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                         | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 334-14LTM                | Sample Type: bag                                    | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0093               | Test Date: 10/08/14                                 | Depth: ---                | Test Id: 309527        |
| Test Comment: ---                   | Sample Description: Moist, dark gray silt with sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 21           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 32           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0241             | 47           |               |          |
| ---        | 0.0204             | 51           |               |          |
| ---        | 0.0123             | 58           |               |          |
| ---        | 0.0089             | 66           |               |          |
| ---        | 0.0063             | 71           |               |          |
| ---        | 0.0045             | 76           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0016             | 82           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2211 mm | D <sub>30</sub> = 0.0067 mm |
| D <sub>60</sub> = 0.0376 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0214 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

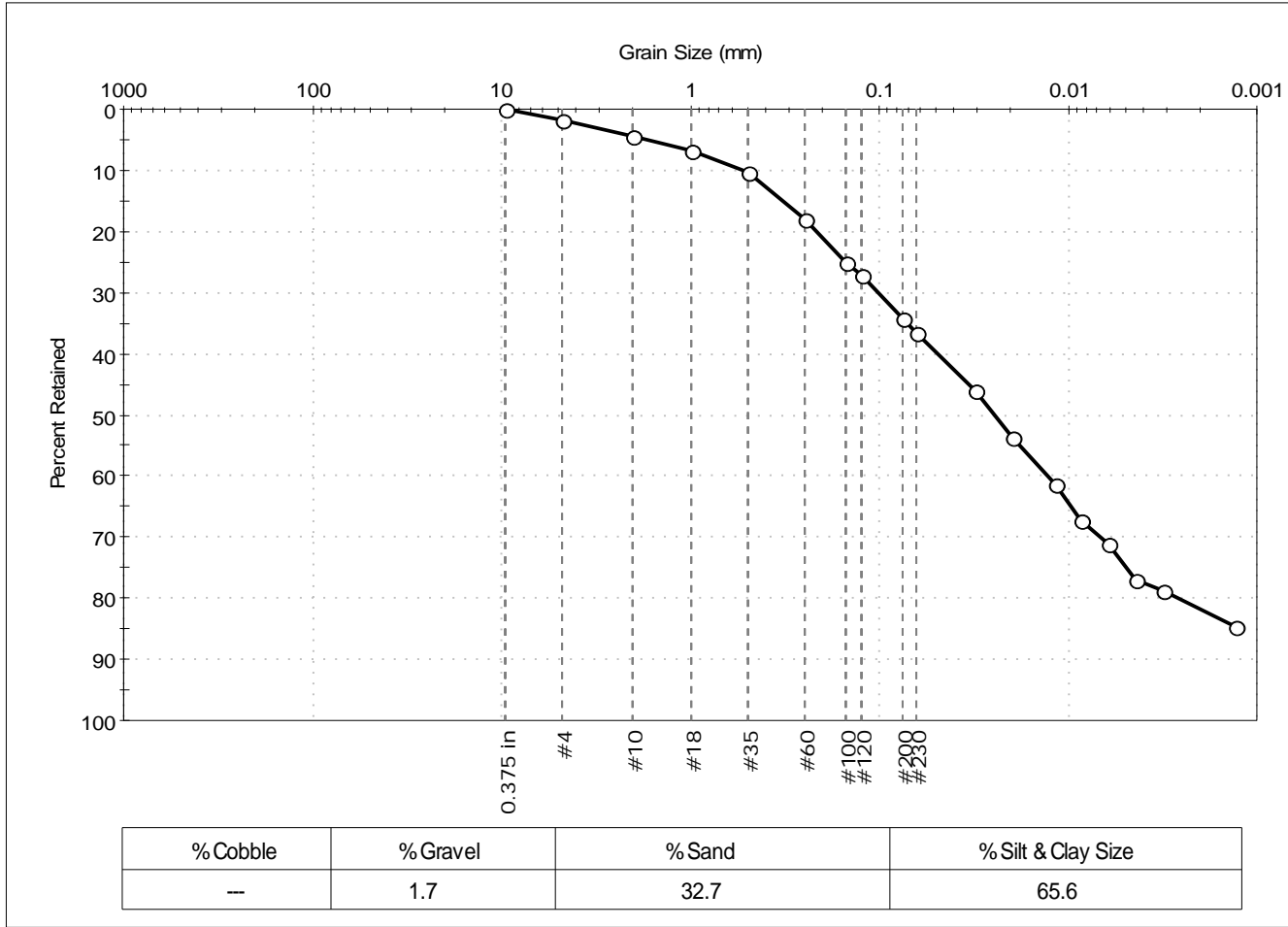
| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute             | Project No: GTX-302366 |
| Project: New Bedford Harbor                     |                        |
| Location: New Bedford, MA                       |                        |
| Boring ID: 334-14LTM                            | Sample Type: bag       |
| Sample ID: NBH14-0094                           | Test Date: 10/20/14    |
| Depth: ---                                      | Test Id: 309528        |
| Test Comment: ---                               | Tested By: jbr         |
| Sample Description: Moist, dark gray sandy silt | Checked By: jdt        |
| Sample Comment: ---                             |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 25           |               |          |
| #120       | 0.12               | 27           |               |          |
| #200       | 0.075              | 34           |               |          |
| #230       | 0.063              | 37           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0311             | 46           |               |          |
| ---        | 0.0197             | 54           |               |          |
| ---        | 0.0116             | 61           |               |          |
| ---        | 0.0085             | 67           |               |          |
| ---        | 0.0061             | 71           |               |          |
| ---        | 0.0044             | 77           |               |          |
| ---        | 0.0031             | 79           |               |          |
| ---        | 0.0013             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3247 mm | D <sub>30</sub> = 0.0067 mm |
| D <sub>60</sub> = 0.0489 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0245 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

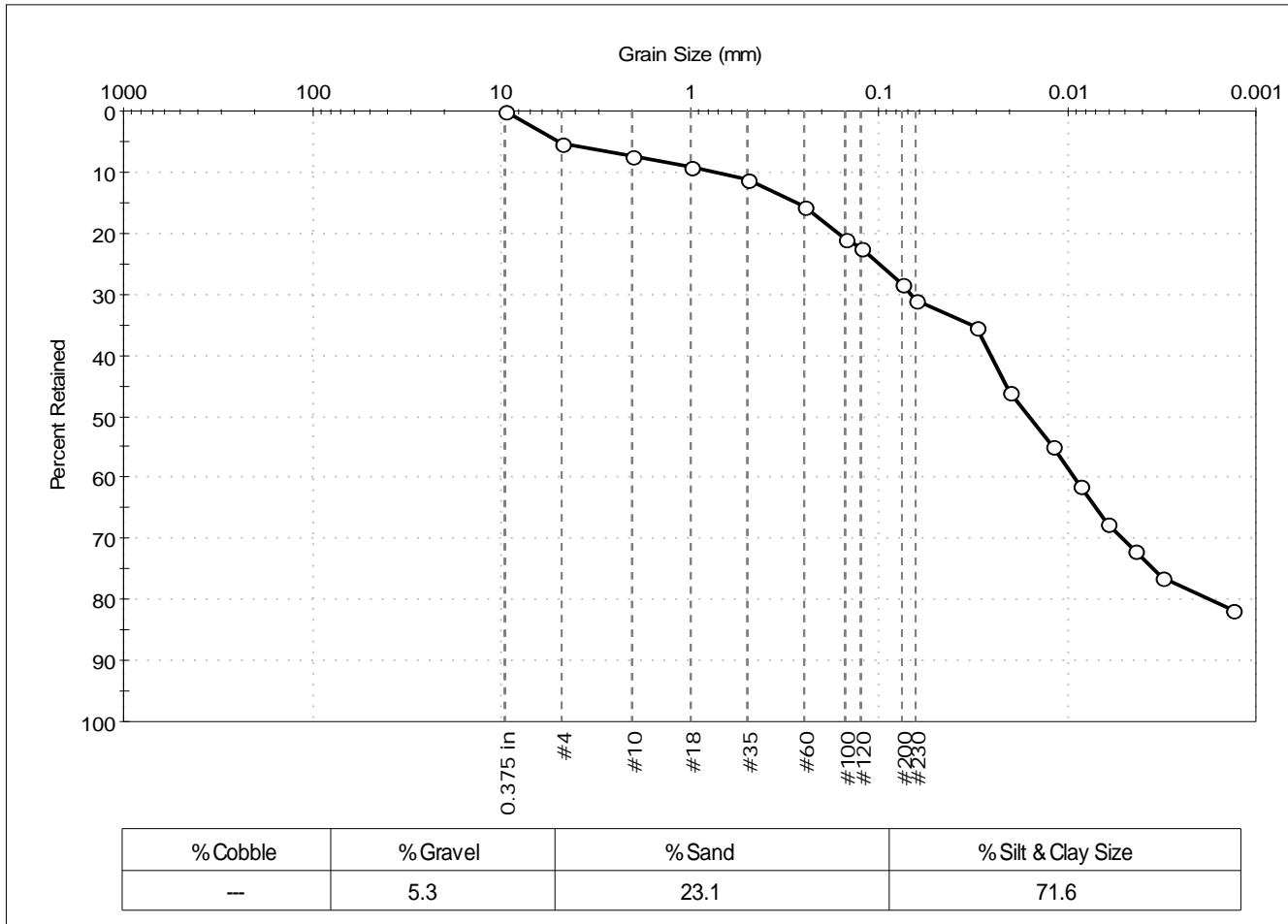
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |   |                           |                        |
|-------------------------------------|---|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                         | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 334-14LTM                | Sample Type: bag                                    | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0095               | Test Date: 10/08/14                                 | Test Id: 309529           |                        |
| Depth: ---                          |   |                           |                        |
| Test Comment: ---                   | Sample Description: Moist, dark gray silt with sand |                           |                        |
| Sample Comment: ---                 |   |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 28           |               |          |
| #230       | 0.063              | 31           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0304             | 35           |               |          |
| ---        | 0.0200             | 46           |               |          |
| ---        | 0.0119             | 55           |               |          |
| ---        | 0.0086             | 61           |               |          |
| ---        | 0.0062             | 68           |               |          |
| ---        | 0.0044             | 72           |               |          |
| ---        | 0.0031             | 76           |               |          |
| ---        | 0.0013             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2795 mm | D <sub>30</sub> = 0.0051 mm |
| D <sub>60</sub> = 0.0254 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0158 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

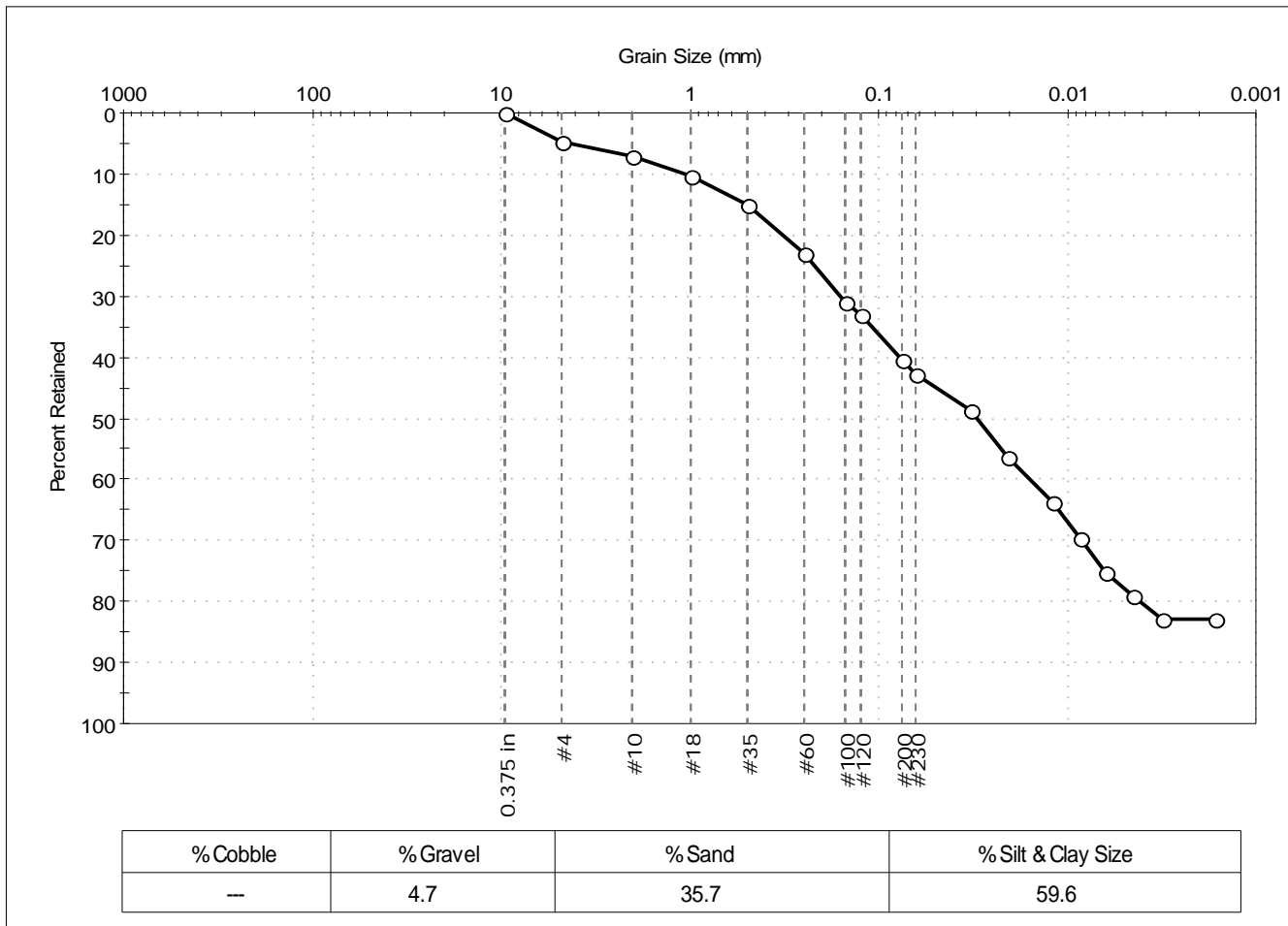
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 334-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0096                      | Test Date:   | 10/08/14   |
| Depth:              | ---                             | Test Id:     | 309530     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Moist, greenish gray sandy silt |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 31           |               |          |
| #120       | 0.12               | 33           |               |          |
| #200       | 0.075              | 40           |               |          |
| #230       | 0.063              | 43           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 49           |               |          |
| ---        | 0.0205             | 56           |               |          |
| ---        | 0.0121             | 64           |               |          |
| ---        | 0.0086             | 70           |               |          |
| ---        | 0.0063             | 75           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0016             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4995 mm | D <sub>30</sub> = 0.0084 mm |
| D <sub>60</sub> = 0.0770 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0298 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

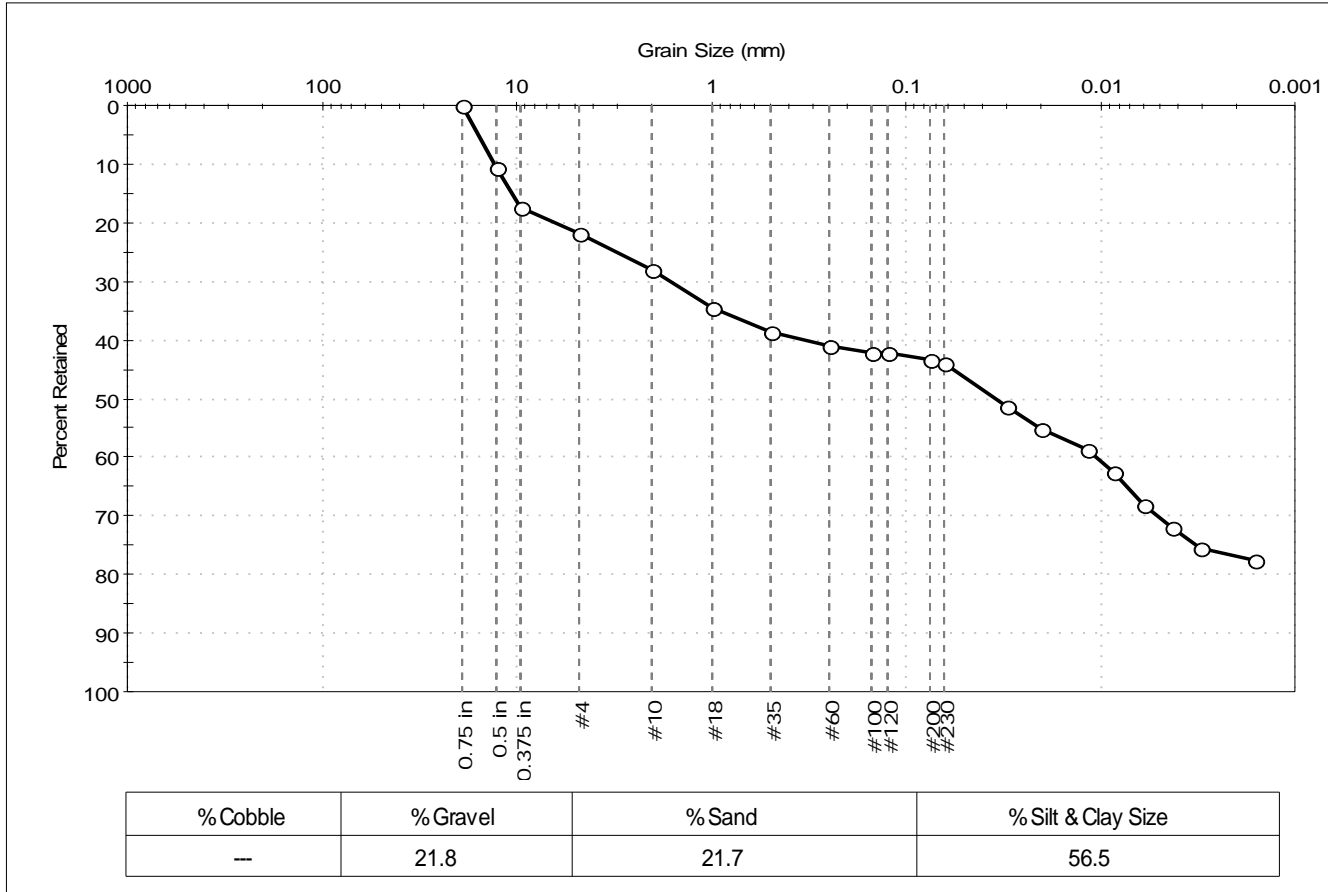
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 335-14LTM                                       | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0097                                      | Test Date: 10/15/14         | Depth: ---                | Test Id: 309531        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Wet, dark gray gravelly silt with sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.70              | 11           |               |          |
| 0.375 in   | 9.50               | 17           |               |          |
| #4         | 4.75               | 22           |               |          |
| #10        | 2.00               | 28           |               |          |
| #18        | 1.00               | 35           |               |          |
| #35        | 0.50               | 39           |               |          |
| #60        | 0.25               | 41           |               |          |
| #100       | 0.15               | 42           |               |          |
| #120       | 0.12               | 42           |               |          |
| #200       | 0.075              | 43           |               |          |
| #230       | 0.063              | 44           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0304             | 51           |               |          |
| ---        | 0.0204             | 55           |               |          |
| ---        | 0.0117             | 59           |               |          |
| ---        | 0.0085             | 63           |               |          |
| ---        | 0.0060             | 68           |               |          |
| ---        | 0.0043             | 72           |               |          |
| ---        | 0.0031             | 76           |               |          |
| ---        | 0.0016             | 78           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 10.5255 mm | D <sub>30</sub> = 0.0051 mm |
| D <sub>60</sub> = 0.3268 mm  | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0345 mm  | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A         | C <sub>c</sub> = N/A        |

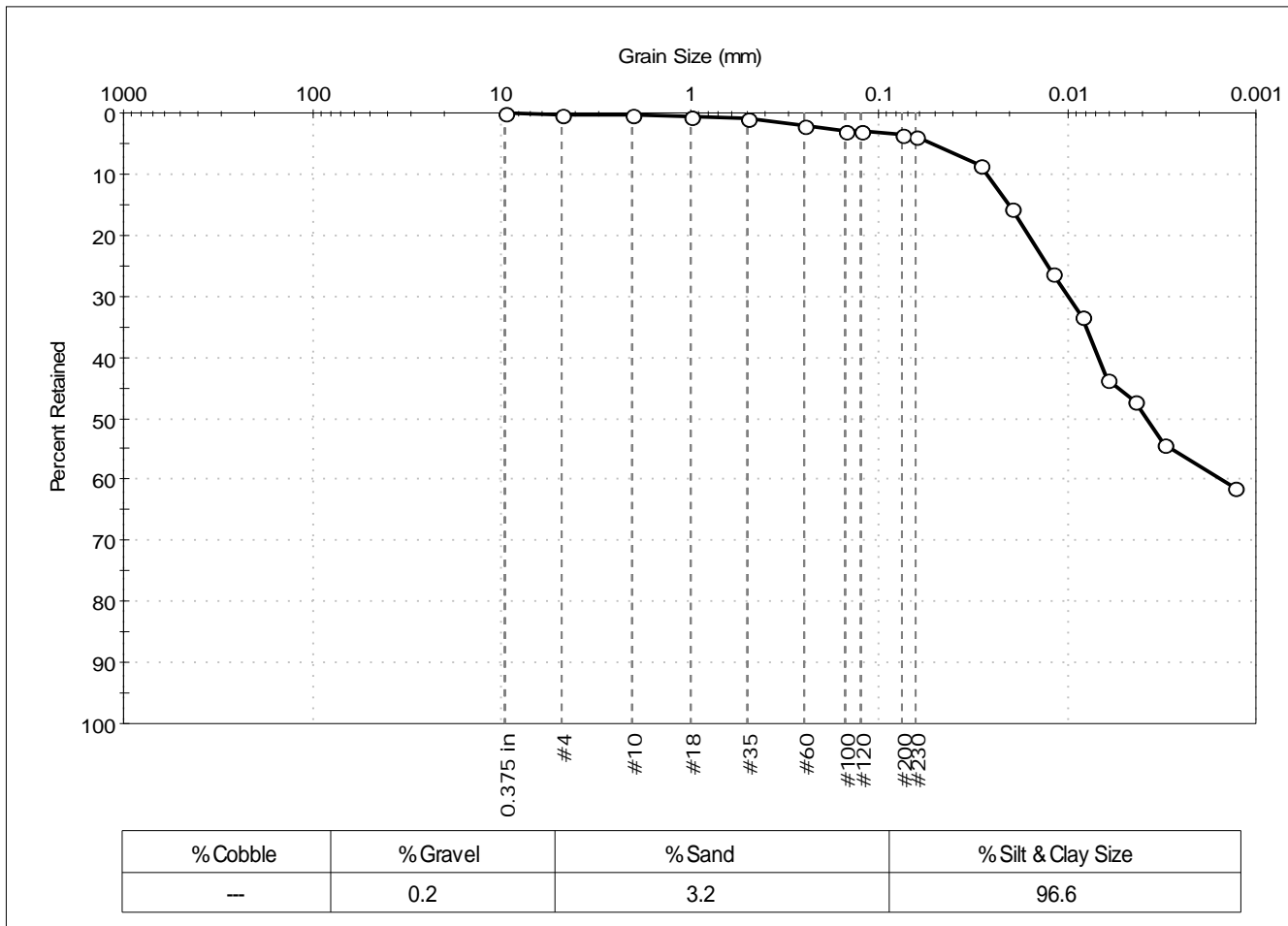
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 335-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0098               | Test Date: 10/08/14         | Test Id: 309532                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0288             | 9            |               |          |
| ---        | 0.0199             | 16           |               |          |
| ---        | 0.0119             | 26           |               |          |
| ---        | 0.0083             | 33           |               |          |
| ---        | 0.0061             | 44           |               |          |
| ---        | 0.0044             | 47           |               |          |
| ---        | 0.0031             | 54           |               |          |
| ---        | 0.0013             | 61           |               |          |

| <u>Coefficients</u>         |                       |
|-----------------------------|-----------------------|
| D <sub>85</sub> = 0.0206 mm | D <sub>30</sub> = N/A |
| D <sub>60</sub> = 0.0068 mm | D <sub>15</sub> = N/A |
| D <sub>50</sub> = 0.0038 mm | D <sub>10</sub> = N/A |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A  |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

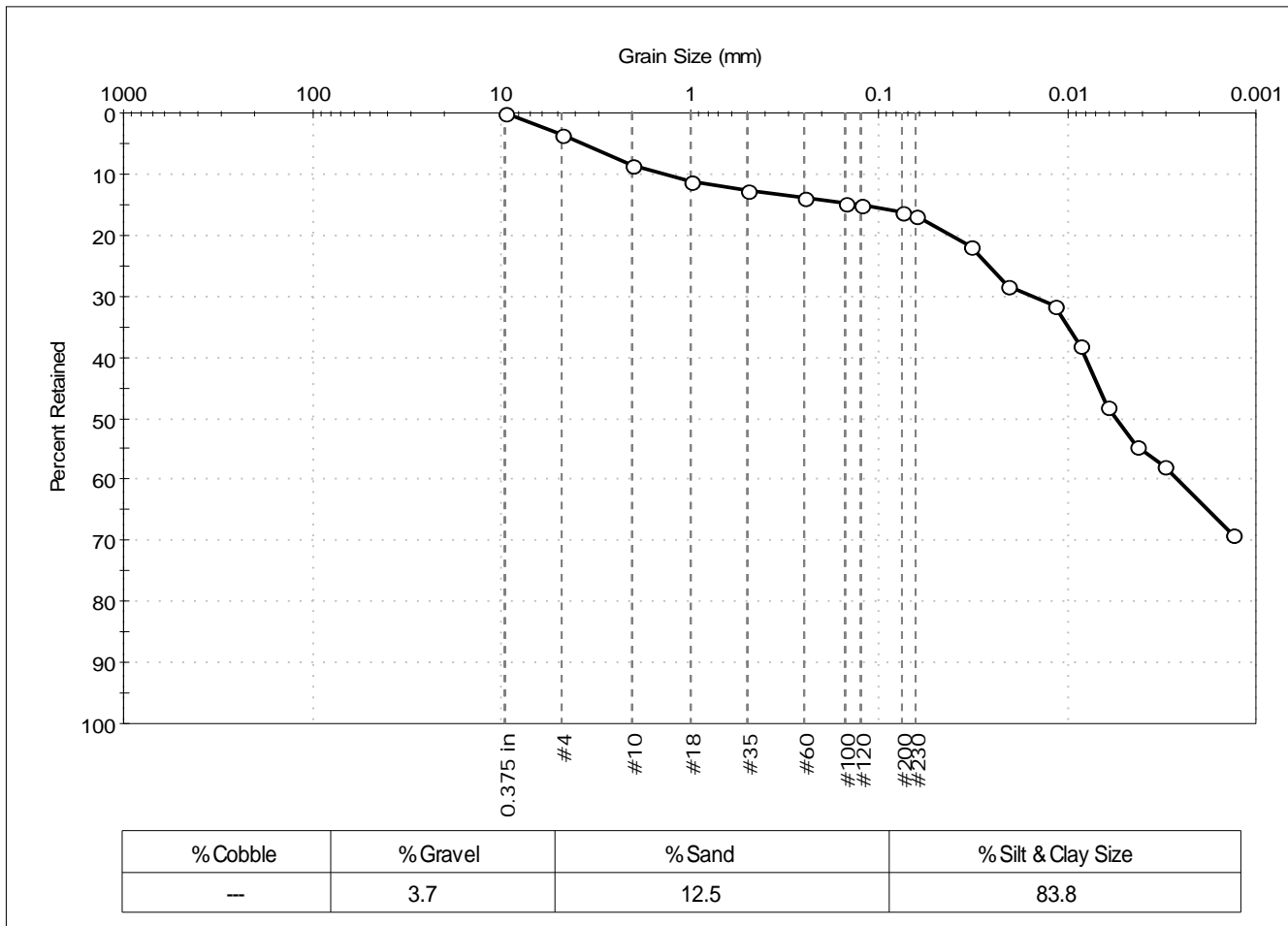
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 335-14LTM                              | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0099                             | Test Date: 10/08/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 309533             |                           |                        |
| Test Comment: ---                                 |                             |                           |                        |
| Sample Description: Wet, dark gray silt with sand |                             |                           |                        |
| Sample Comment: ---                               |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 15           |               |          |
| #200       | 0.075              | 16           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 22           |               |          |
| ---        | 0.0206             | 28           |               |          |
| ---        | 0.0118             | 32           |               |          |
| ---        | 0.0085             | 38           |               |          |
| ---        | 0.0061             | 48           |               |          |
| ---        | 0.0043             | 54           |               |          |
| ---        | 0.0031             | 58           |               |          |
| ---        | 0.0013             | 69           |               |          |

| <u>Coefficients</u>         |                       |
|-----------------------------|-----------------------|
| D <sub>85</sub> = 0.1203 mm | D <sub>30</sub> = N/A |
| D <sub>60</sub> = 0.0080 mm | D <sub>15</sub> = N/A |
| D <sub>50</sub> = 0.0055 mm | D <sub>10</sub> = N/A |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A  |

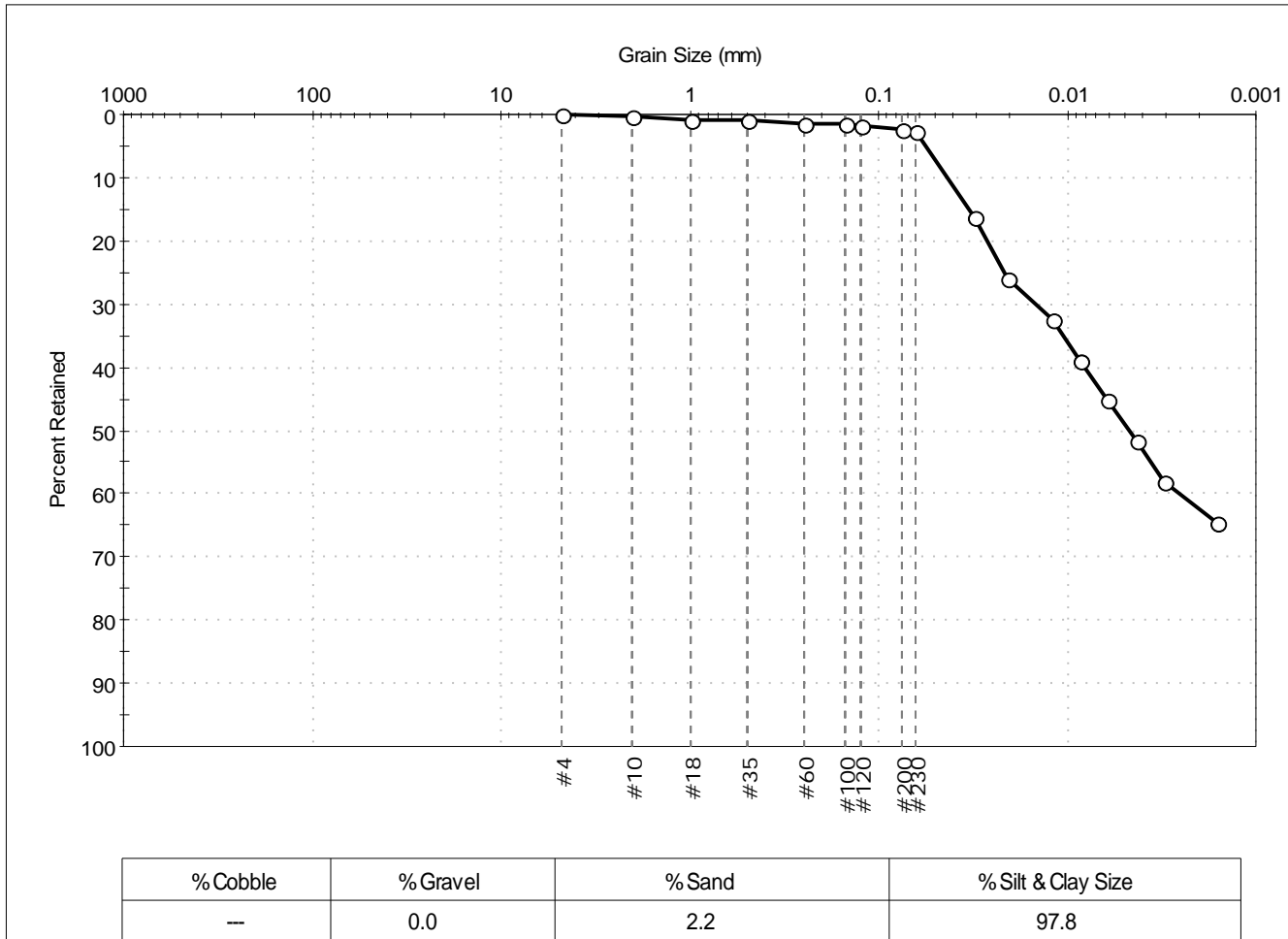
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 335-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0100                  | Test Date:   | 10/08/14   |
| Depth:              | ---                         | Test Id:     | 309534     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, greenish gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 16           |               |          |
| ---        | 0.0206             | 26           |               |          |
| ---        | 0.0120             | 32           |               |          |
| ---        | 0.0085             | 39           |               |          |
| ---        | 0.0061             | 45           |               |          |
| ---        | 0.0043             | 52           |               |          |
| ---        | 0.0031             | 58           |               |          |
| ---        | 0.0016             | 65           |               |          |

| <u>Coefficients</u>         |                       |
|-----------------------------|-----------------------|
| D <sub>85</sub> = 0.0335 mm | D <sub>30</sub> = N/A |
| D <sub>60</sub> = 0.0080 mm | D <sub>15</sub> = N/A |
| D <sub>50</sub> = 0.0047 mm | D <sub>10</sub> = N/A |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A  |

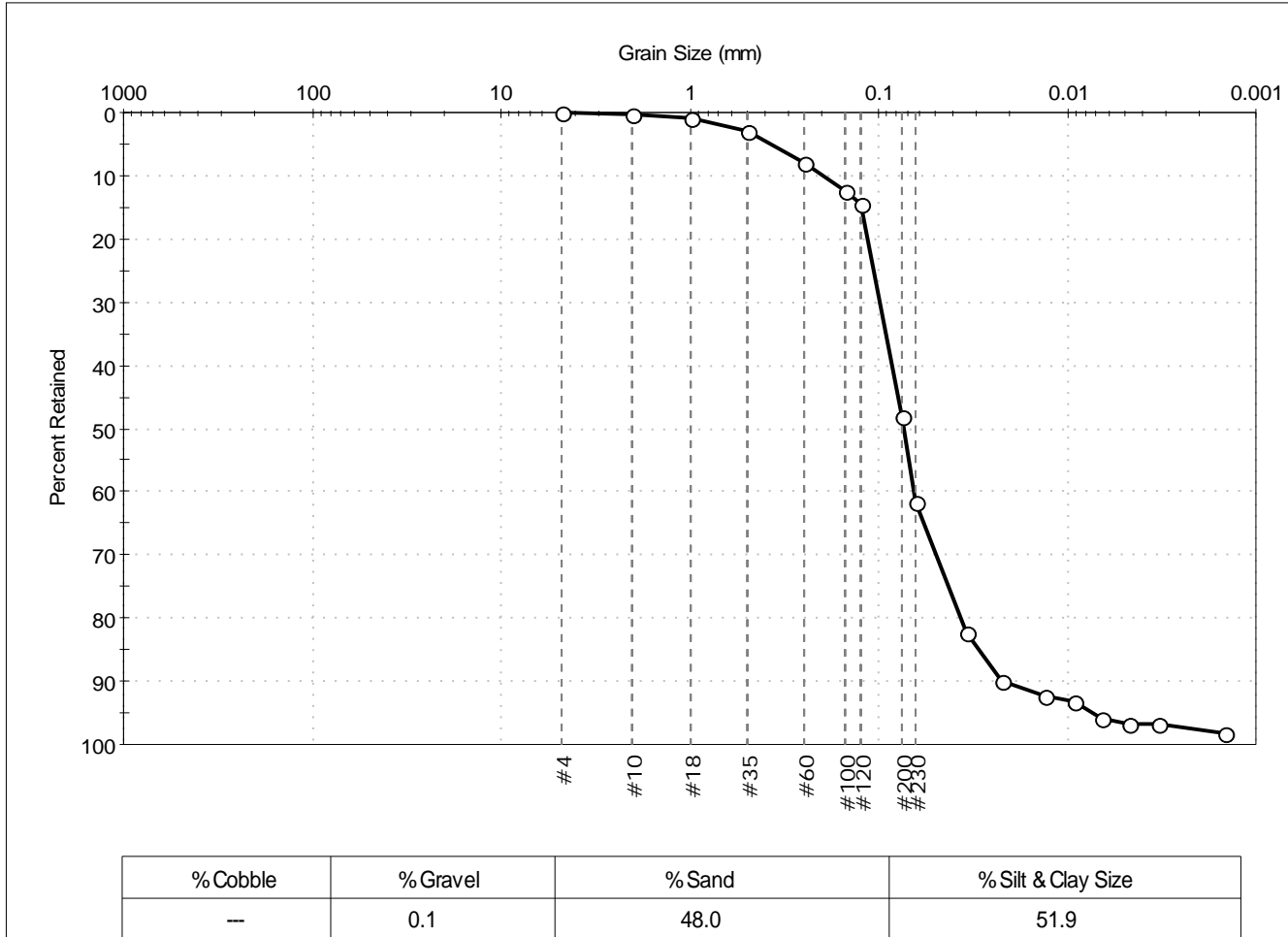
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                        | Project No: GTX-302366 |
| Boring ID: 349-14LTM                | Sample Type: bag            | Tested By: jbr                                   | Checked By: jdt        |
| Sample ID: NBH14-0101               | Test Date: 11/06/14         | Test Id: 310090                                  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 8            |               |          |
| #100       | 0.15               | 12           |               |          |
| #120       | 0.12               | 15           |               |          |
| #200       | 0.075              | 48           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 82           |               |          |
| ---        | 0.0224             | 90           |               |          |
| ---        | 0.0131             | 92           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 96           |               |          |
| ---        | 0.0047             | 97           |               |          |
| ---        | 0.0033             | 97           |               |          |
| ---        | 0.0014             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1241 mm | D <sub>30</sub> = 0.0493 mm |
| D <sub>60</sub> = 0.0848 mm | D <sub>15</sub> = 0.0297 mm |
| D <sub>50</sub> = 0.0731 mm | D <sub>10</sub> = 0.0222 mm |
| C <sub>u</sub> = 3.820      | C <sub>c</sub> = 1.291      |

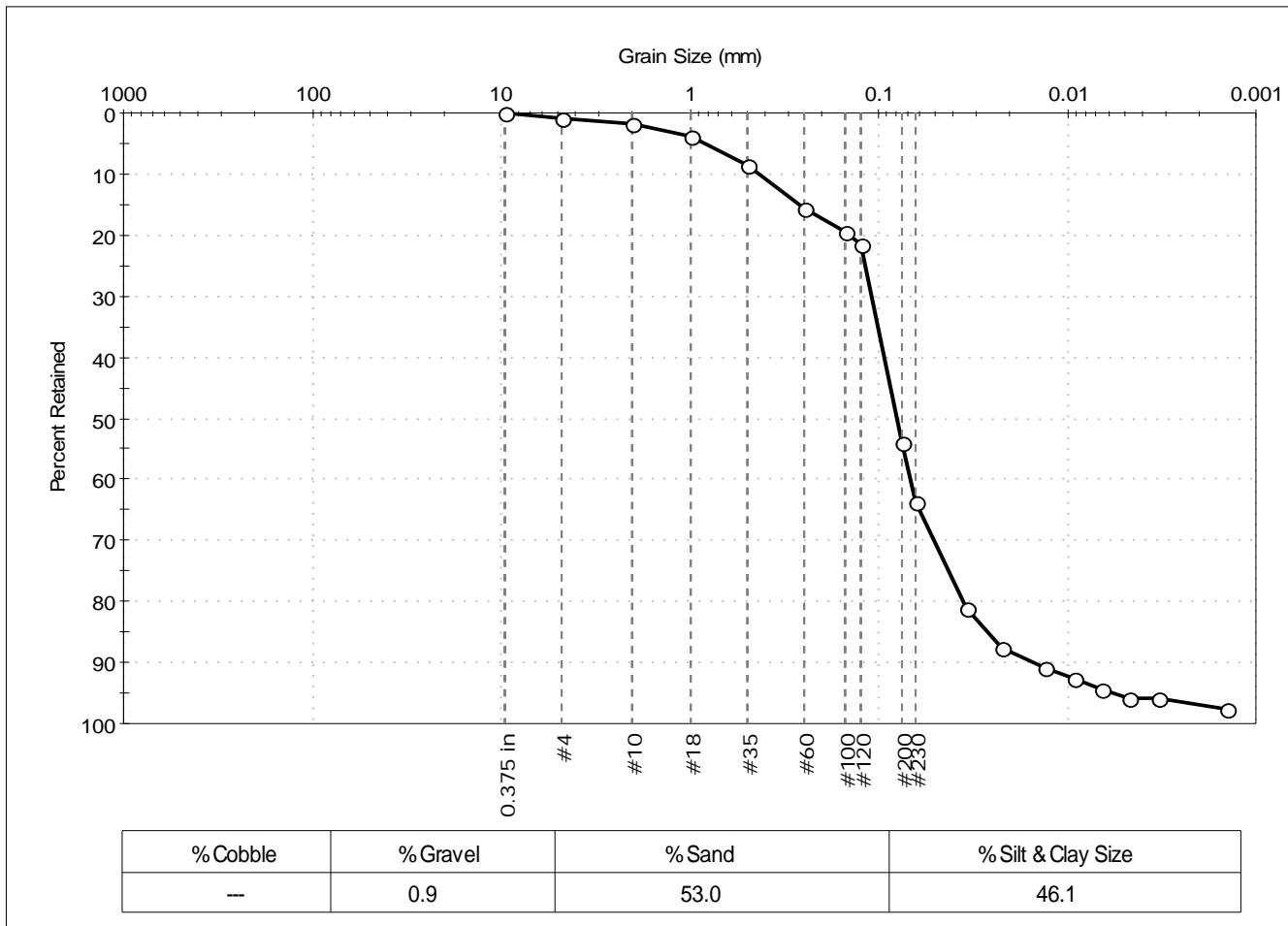
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                              |              |            |
|---------------------|------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute  |              |            |
| Project:            | New Bedford Harbor           |              |            |
| Location:           | New Bedford, MA              | Project No:  | GTX-302366 |
| Boring ID:          | 349-14LTM                    | Sample Type: | bag        |
| Sample ID:          | NBH14-0102                   | Test Date:   | 11/06/14   |
| Depth:              | ---                          | Test Id:     | 310091     |
| Test Comment:       | ---                          |              |            |
| Sample Description: | Moist, olive gray silty sand |              |            |
| Sample Comment:     | ---                          |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 19           |               |          |
| #120       | 0.12               | 21           |               |          |
| #200       | 0.075              | 54           |               |          |
| #230       | 0.063              | 64           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 81           |               |          |
| ---        | 0.0222             | 88           |               |          |
| ---        | 0.0130             | 91           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2643 mm | D <sub>30</sub> = 0.0505 mm |
| D <sub>60</sub> = 0.0934 mm | D <sub>15</sub> = 0.0267 mm |
| D <sub>50</sub> = 0.0797 mm | D <sub>10</sub> = 0.0153 mm |
| C <sub>u</sub> = 6.105      | C <sub>c</sub> = 1.785      |

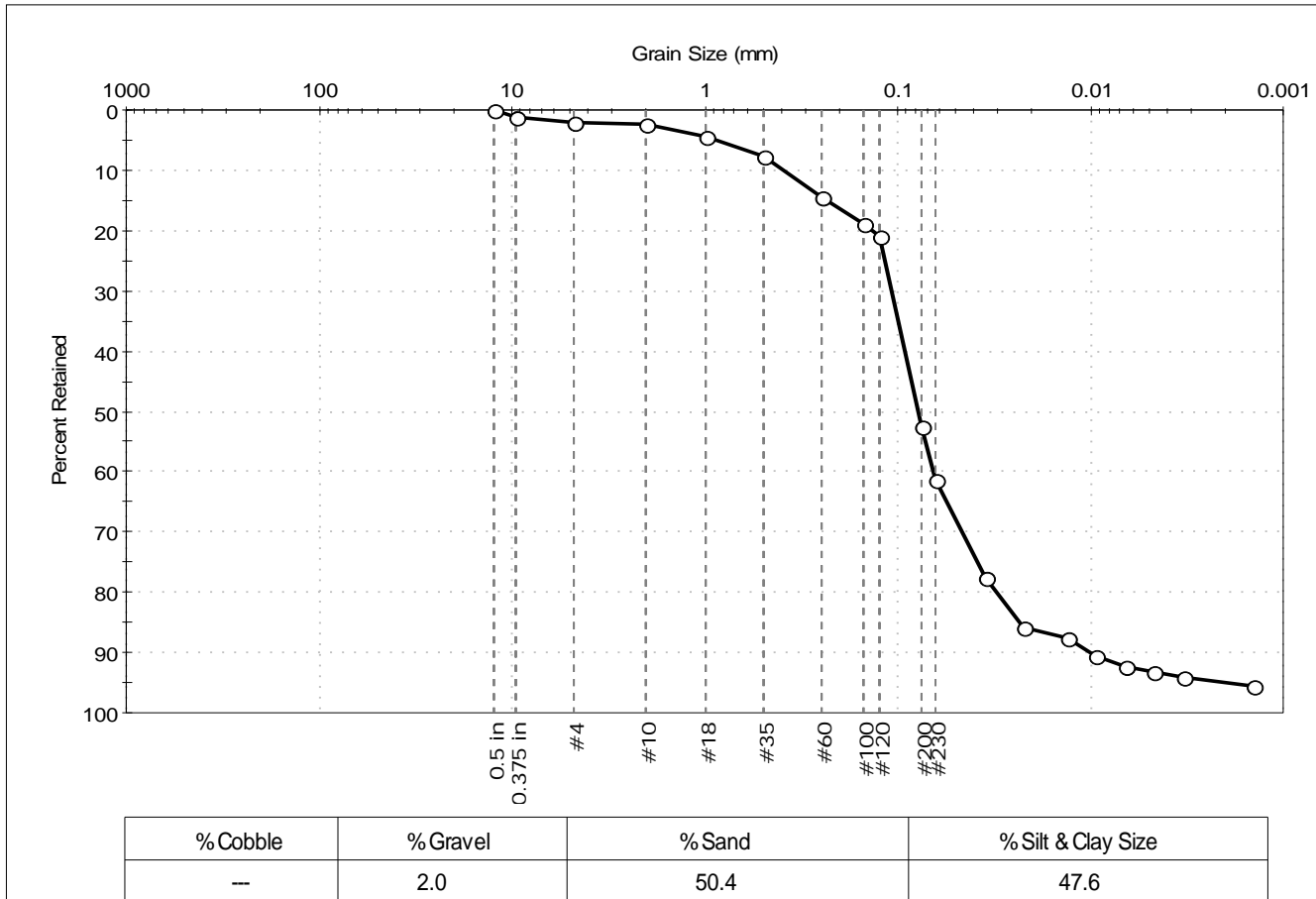
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 349-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0103  
 Test Date: 11/18/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310092  
 Test Comment: ---  
 Sample Description: Moist, olive gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 19           |               |          |
| #120       | 0.12               | 21           |               |          |
| #200       | 0.075              | 52           |               |          |
| #230       | 0.063              | 61           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0347             | 78           |               |          |
| ---        | 0.0225             | 86           |               |          |
| ---        | 0.0131             | 88           |               |          |
| ---        | 0.0093             | 90           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2349 mm | D <sub>30</sub> = 0.0458 mm |
| D <sub>60</sub> = 0.0917 mm | D <sub>15</sub> = 0.0235 mm |
| D <sub>50</sub> = 0.0780 mm | D <sub>10</sub> = 0.0099 mm |
| C <sub>u</sub> = 9.263      | C <sub>c</sub> = 2.311      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

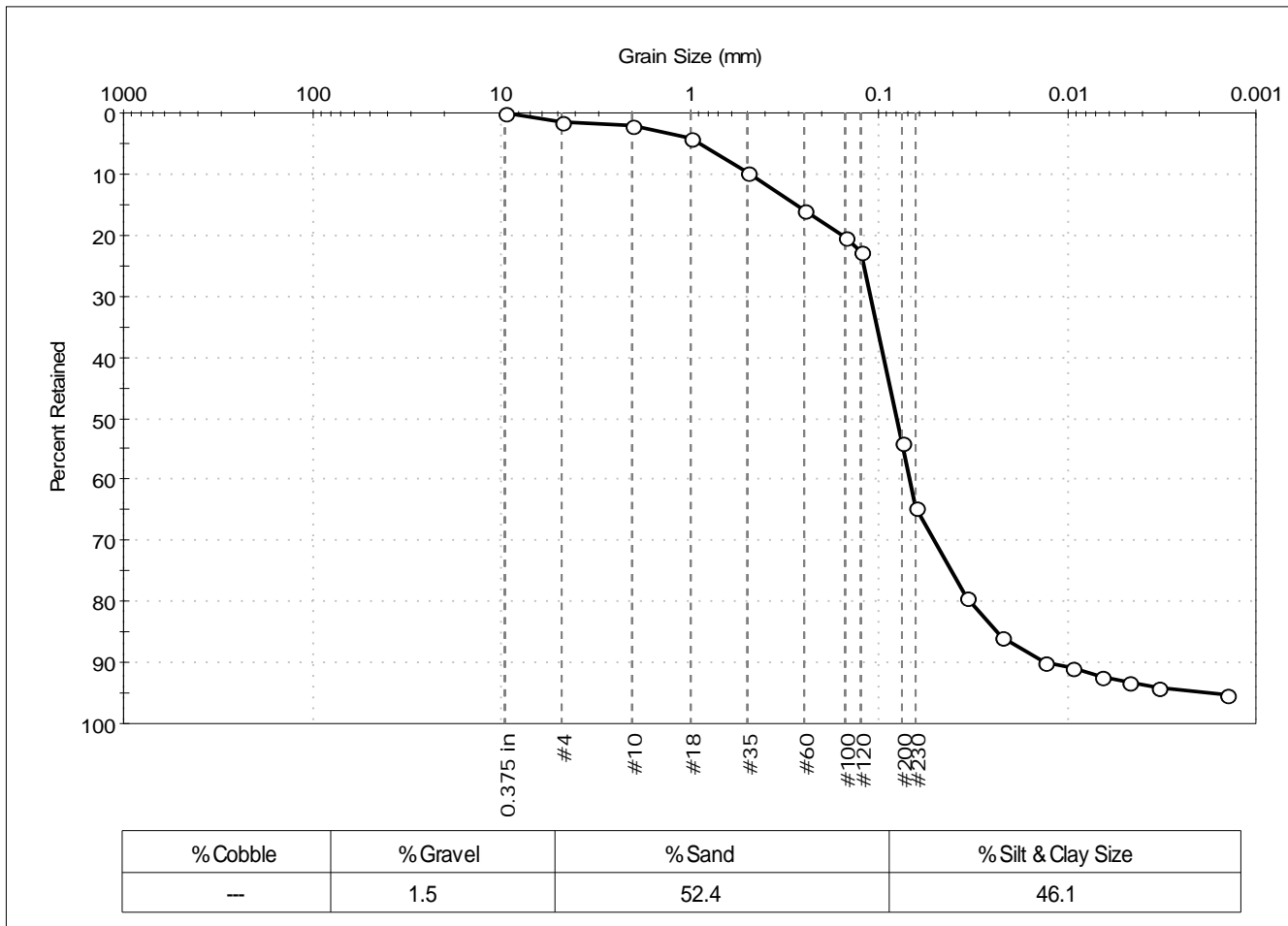
Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve





|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute              | Project No: GTX-302366 |
| Project: New Bedford Harbor                      |                        |
| Location: New Bedford, MA                        |                        |
| Boring ID: 349-14LTM                             | Sample Type: bag       |
| Sample ID: NBH14-0104                            | Test Date: 11/18/14    |
| Depth: ---                                       | Test Id: 310093        |
| Test Comment: ---                                | Tested By: jbr         |
| Sample Description: Moist, olive gray silty sand | Checked By: jdt        |
| Sample Comment: ---                              |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 23           |               |          |
| #200       | 0.075              | 54           |               |          |
| #230       | 0.063              | 65           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 79           |               |          |
| ---        | 0.0224             | 86           |               |          |
| ---        | 0.0131             | 90           |               |          |
| ---        | 0.0093             | 91           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2786 mm | D <sub>30</sub> = 0.0506 mm |
| D <sub>60</sub> = 0.0941 mm | D <sub>15</sub> = 0.0237 mm |
| D <sub>50</sub> = 0.0799 mm | D <sub>10</sub> = 0.0128 mm |
| C <sub>u</sub> = 7.352      | C <sub>c</sub> = 2.126      |

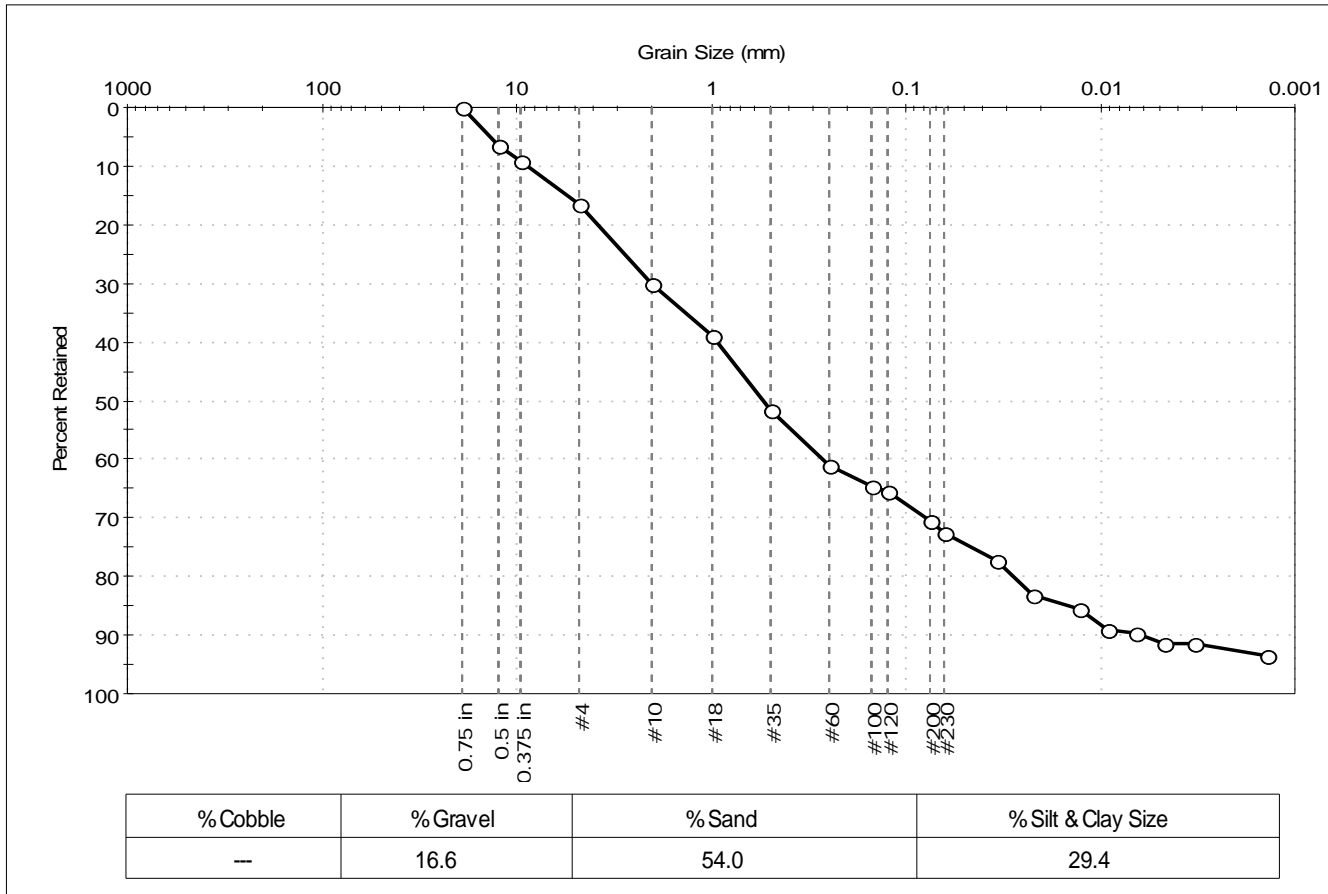
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 352-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0105   | Test Date: 11/18/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310094             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, dark olive gray silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 7            |               |          |
| 0.375 in   | 9.50               | 9            |               |          |
| #4         | 4.75               | 17           |               |          |
| #10        | 2.00               | 30           |               |          |
| #18        | 1.00               | 39           |               |          |
| #35        | 0.50               | 52           |               |          |
| #60        | 0.25               | 61           |               |          |
| #100       | 0.15               | 65           |               |          |
| #120       | 0.12               | 66           |               |          |
| #200       | 0.075              | 71           |               |          |
| #230       | 0.063              | 73           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 77           |               |          |
| ---        | 0.0222             | 83           |               |          |
| ---        | 0.0129             | 86           |               |          |
| ---        | 0.0093             | 89           |               |          |
| ---        | 0.0066             | 90           |               |          |
| ---        | 0.0047             | 91           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.4992 mm | D <sub>30</sub> = 0.0797 mm |
| D <sub>60</sub> = 0.9390 mm | D <sub>15</sub> = 0.0149 mm |
| D <sub>50</sub> = 0.5470 mm | D <sub>10</sub> = 0.0063 mm |
| C <sub>u</sub> = 149.048    | C <sub>c</sub> = 1.074      |

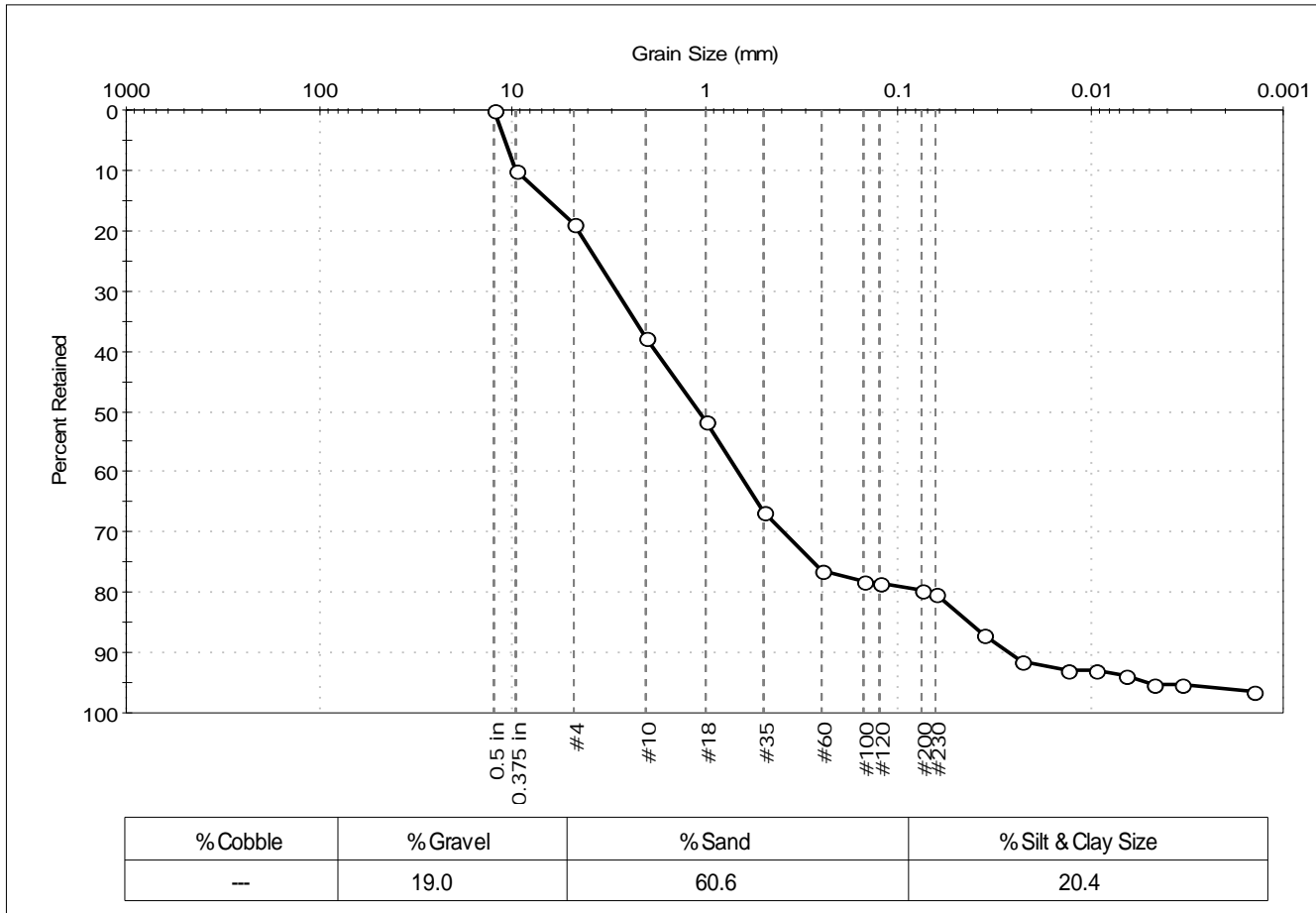
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute                   |              |            |
| Project:            | New Bedford Harbor                            |              |            |
| Location:           | New Bedford, MA                               | Project No:  | GTX-302366 |
| Boring ID:          | 352-14LTM                                     | Sample Type: | bag        |
| Sample ID:          | NBH14-0106                                    | Test Date:   | 11/18/14   |
| Depth:              | ---   | Checked By:  | jdt        |
|                     |   | Test Id:     | 310095     |
| Test Comment:       | ---   |              |            |
| Sample Description: | Moist, dark olive gray silty sand with gravel |              |            |
| Sample Comment:     | ---   |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 10           |               |          |
| #4         | 4.75               | 19           |               |          |
| #10        | 2.00               | 38           |               |          |
| #18        | 1.00               | 52           |               |          |
| #35        | 0.50               | 67           |               |          |
| #60        | 0.25               | 76           |               |          |
| #100       | 0.15               | 78           |               |          |
| #120       | 0.12               | 78           |               |          |
| #200       | 0.075              | 80           |               |          |
| #230       | 0.063              | 80           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0354             | 87           |               |          |
| ---        | 0.0228             | 92           |               |          |
| ---        | 0.0132             | 93           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 6.4883 mm | D <sub>30</sub> = 0.3937 mm |
| D <sub>60</sub> = 1.7903 mm | D <sub>15</sub> = 0.0424 mm |
| D <sub>50</sub> = 1.0809 mm | D <sub>10</sub> = 0.0266 mm |
| C <sub>u</sub> = 67.305     | C <sub>c</sub> = 3.255      |

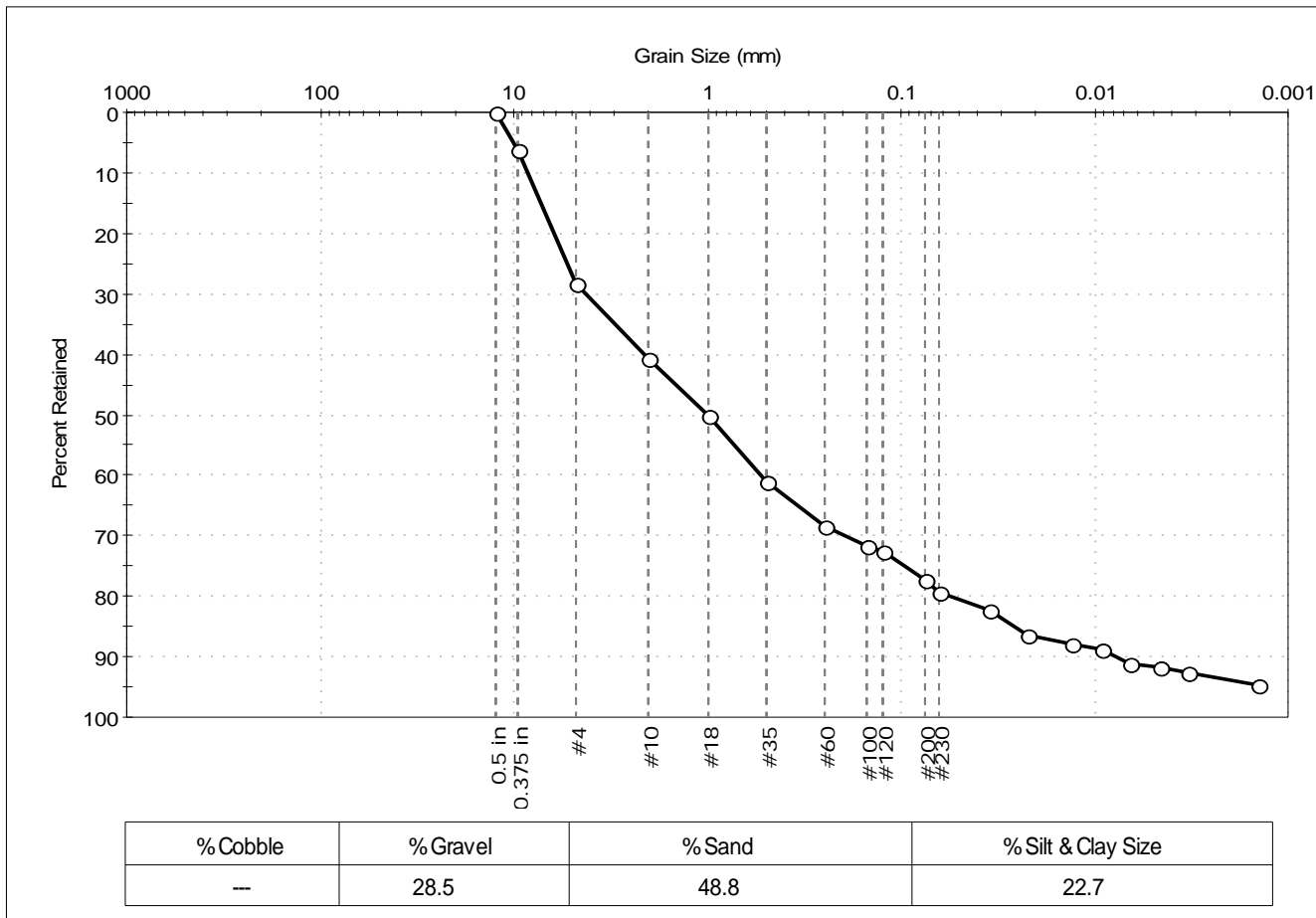
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute                                |              |            |
| Project:            | New Bedford Harbor   |              |            |
| Location:           | New Bedford, MA  | Project No:  | GTX-302366 |
| Boring ID:          | 352-14LTM  | Sample Type: | bag        |
| Sample ID:          | NBH14-0107   | Test Date:   | 11/18/14   |
| Depth:              | ---  | Checked By:  | jdt        |
|                     |  | Test Id:     | 310096     |
| Test Comment:       | ---  |              |            |
| Sample Description: | Moist, dark olive gray silty sand with gravel and organics |              |            |
| Sample Comment:     | ---  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 6            |               |          |
| #4         | 4.75               | 28           |               |          |
| #10        | 2.00               | 41           |               |          |
| #18        | 1.00               | 50           |               |          |
| #35        | 0.50               | 61           |               |          |
| #60        | 0.25               | 69           |               |          |
| #100       | 0.15               | 72           |               |          |
| #120       | 0.12               | 72           |               |          |
| #200       | 0.075              | 77           |               |          |
| #230       | 0.063              | 79           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0349             | 82           |               |          |
| ---        | 0.0224             | 86           |               |          |
| ---        | 0.0130             | 88           |               |          |
| ---        | 0.0092             | 89           |               |          |
| ---        | 0.0066             | 91           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 7.2134 mm | D <sub>30</sub> = 0.1957 mm |
| D <sub>60</sub> = 2.0907 mm | D <sub>15</sub> = 0.0260 mm |
| D <sub>50</sub> = 1.0130 mm | D <sub>10</sub> = 0.0076 mm |
| C <sub>u</sub> = 275.092    | C <sub>c</sub> = 2.410      |

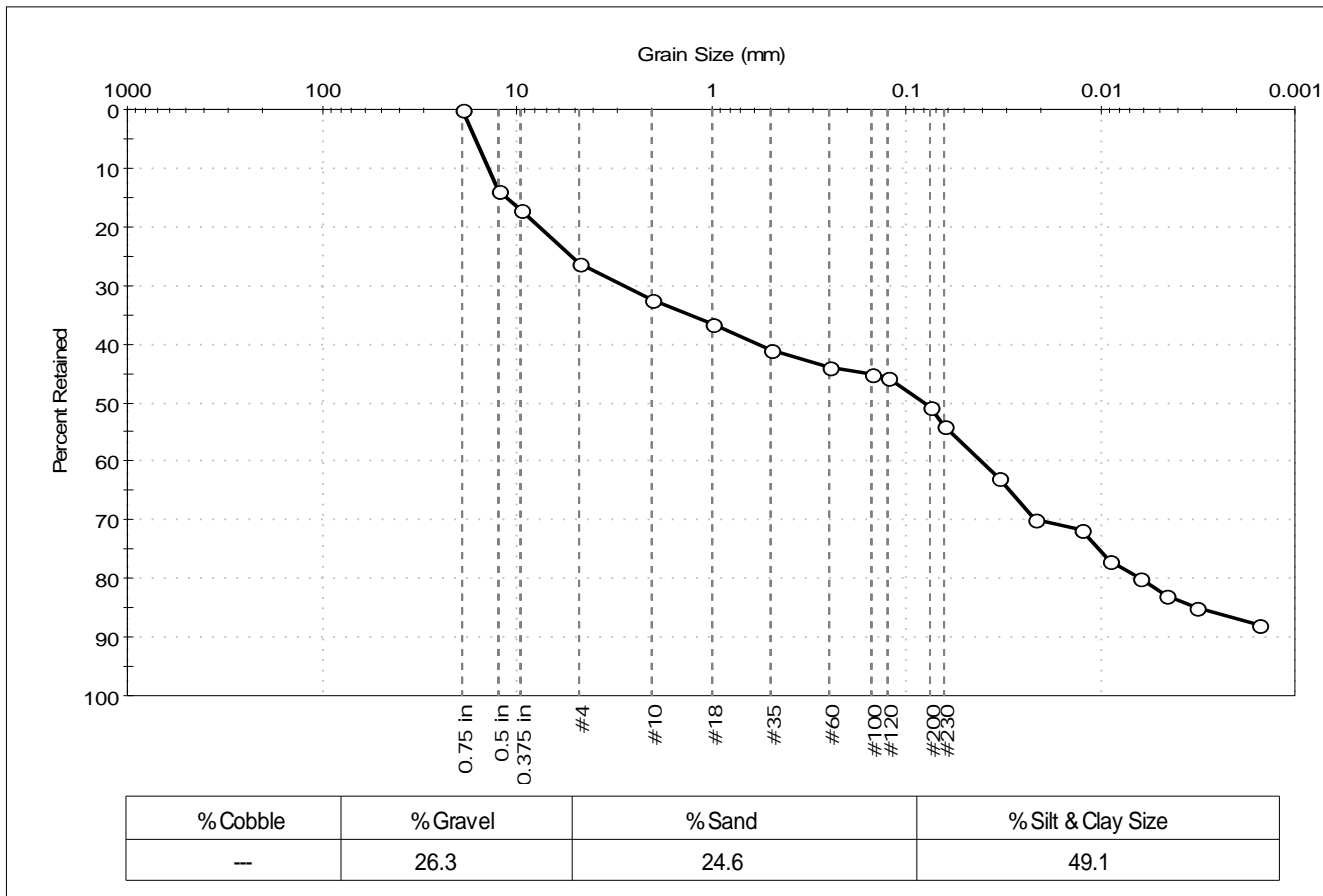
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute                  |              |            |
| Project:            | New Bedford Harbor                           |              |            |
| Location:           | New Bedford, MA                              | Project No:  | GTX-302366 |
| Boring ID:          | 352-14LTM                                    | Sample Type: | bag        |
| Sample ID:          | NBH14-0108                                   | Test Date:   | 11/19/14   |
| Depth:              | ---  | Checked By:  | jdt        |
|                     |  | Test Id:     | 310097     |
| Test Comment:       | ---  |              |            |
| Sample Description: | Moist, very dark gray silty gravel with sand |              |            |
| Sample Comment:     | ---  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 14           |               |          |
| 0.375 in   | 9.50               | 17           |               |          |
| #4         | 4.75               | 26           |               |          |
| #10        | 2.00               | 32           |               |          |
| #18        | 1.00               | 37           |               |          |
| #35        | 0.50               | 41           |               |          |
| #60        | 0.25               | 44           |               |          |
| #100       | 0.15               | 45           |               |          |
| #120       | 0.12               | 46           |               |          |
| #200       | 0.075              | 51           |               |          |
| #230       | 0.063              | 54           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0332             | 63           |               |          |
| ---        | 0.0215             | 70           |               |          |
| ---        | 0.0124             | 72           |               |          |
| ---        | 0.0089             | 77           |               |          |
| ---        | 0.0064             | 80           |               |          |
| ---        | 0.0046             | 83           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0016             | 88           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 11.4838 mm | D <sub>30</sub> = 0.0204 mm |
| D <sub>60</sub> = 0.5916 mm  | D <sub>15</sub> = 0.0031 mm |
| D <sub>50</sub> = 0.0819 mm  | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A         | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

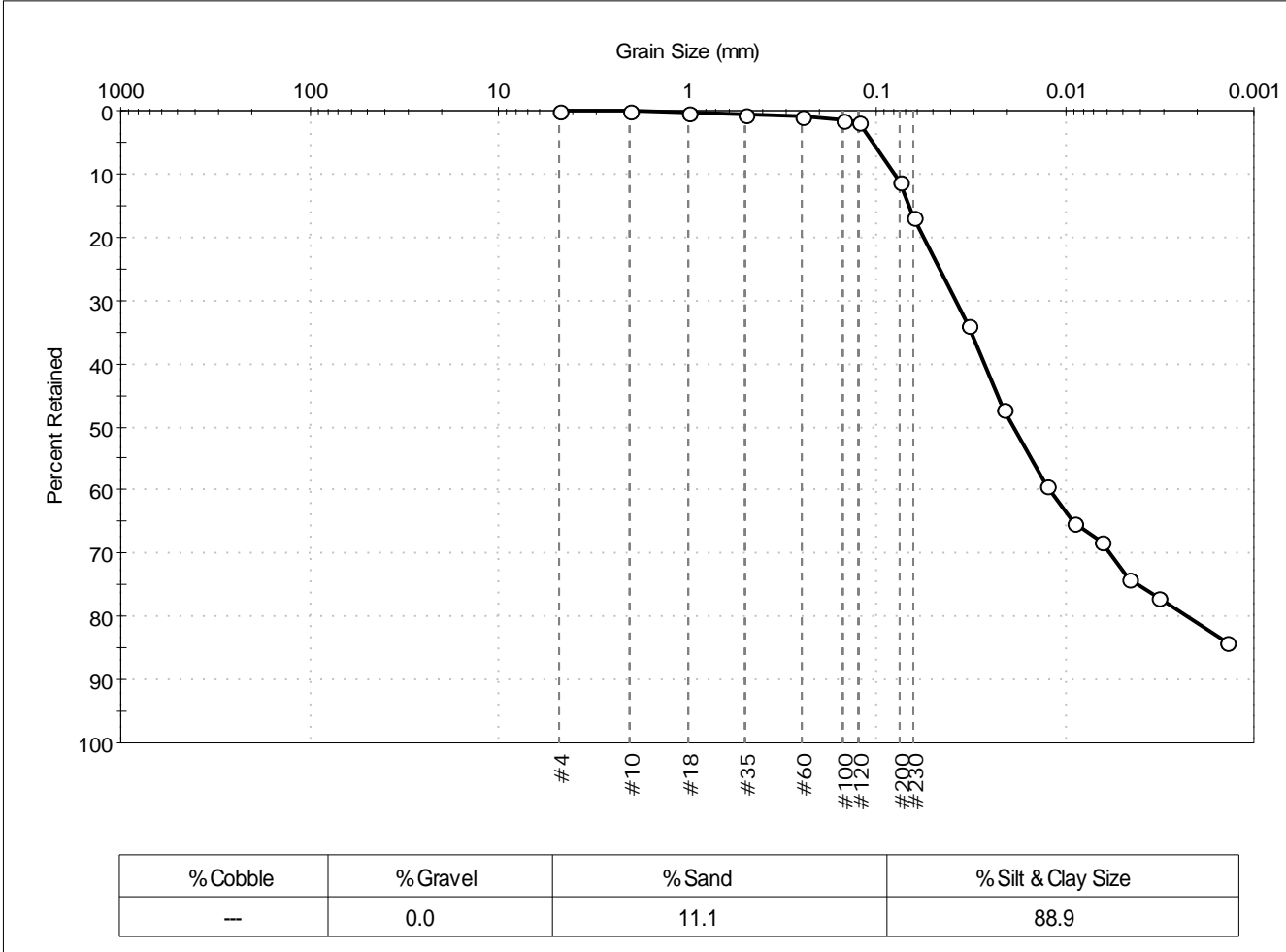
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                  | Project No: GTX-302366 |
| Boring ID: 345-14LTM                | Sample Type: bag            | Tested By: jbr                             | Checked By: jdt        |
| Sample ID: NBH14-0109               | Test Date: 11/18/14         | Test Id: 310098                            |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 34           |               |          |
| ---        | 0.0212             | 47           |               |          |
| ---        | 0.0125             | 59           |               |          |
| ---        | 0.0090             | 65           |               |          |
| ---        | 0.0064             | 68           |               |          |
| ---        | 0.0046             | 74           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0014             | 84           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0665 mm | D <sub>30</sub> = 0.0058 mm |
| D <sub>60</sub> = 0.0266 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0188 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

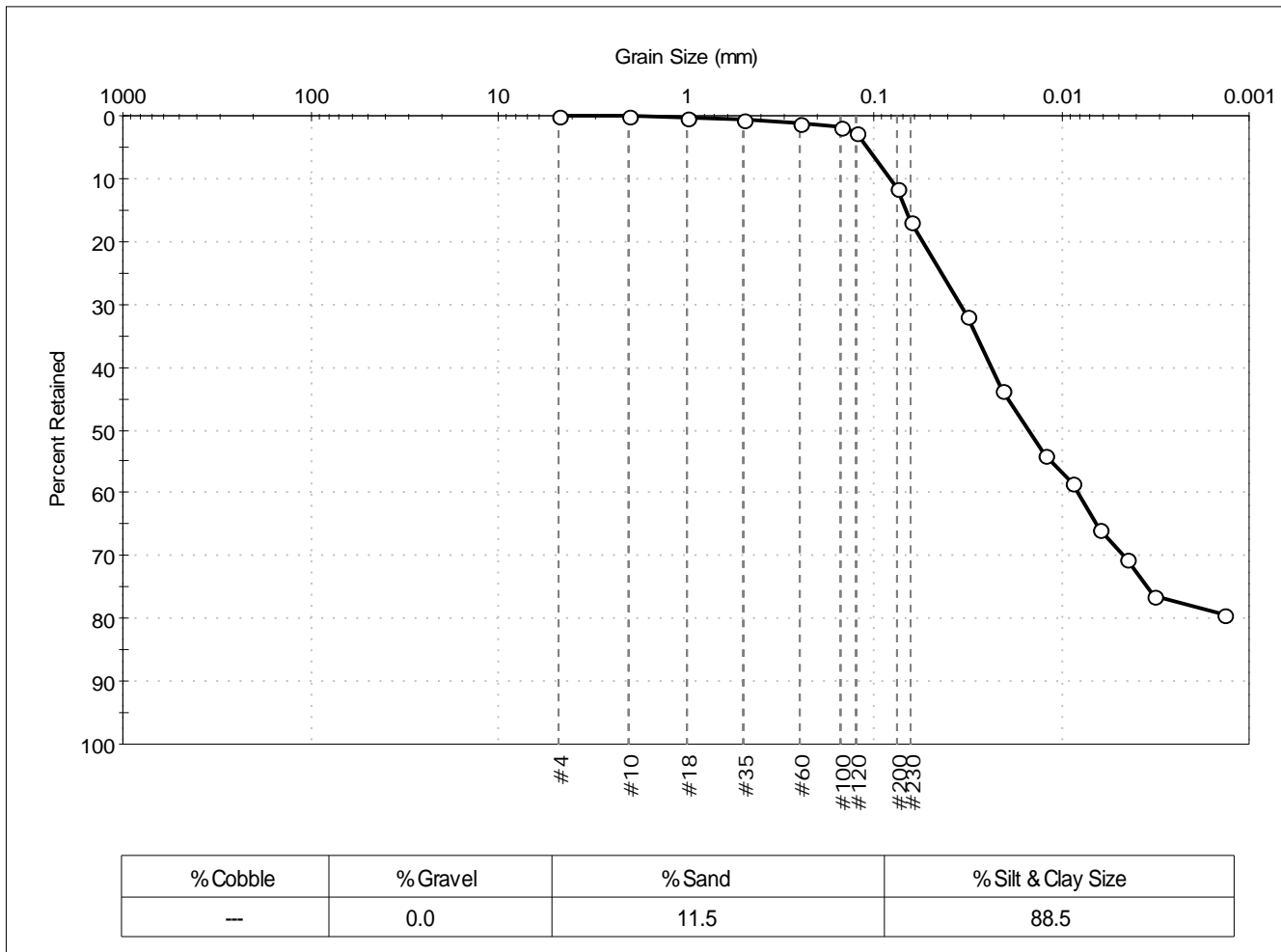
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                        | Project No: GTX-302366 |
| Boring ID: 345-14LTM                | Sample Type: bag            | Tested By: jbr                                   | Checked By: jdt        |
| Sample ID: NBH14-0110               | Test Date: 11/03/14         | Test Id: 310099                                  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark greenish gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 32           |               |          |
| ---        | 0.0208             | 44           |               |          |
| ---        | 0.0123             | 54           |               |          |
| ---        | 0.0088             | 59           |               |          |
| ---        | 0.0063             | 66           |               |          |
| ---        | 0.0045             | 70           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0666 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0238 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0152 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

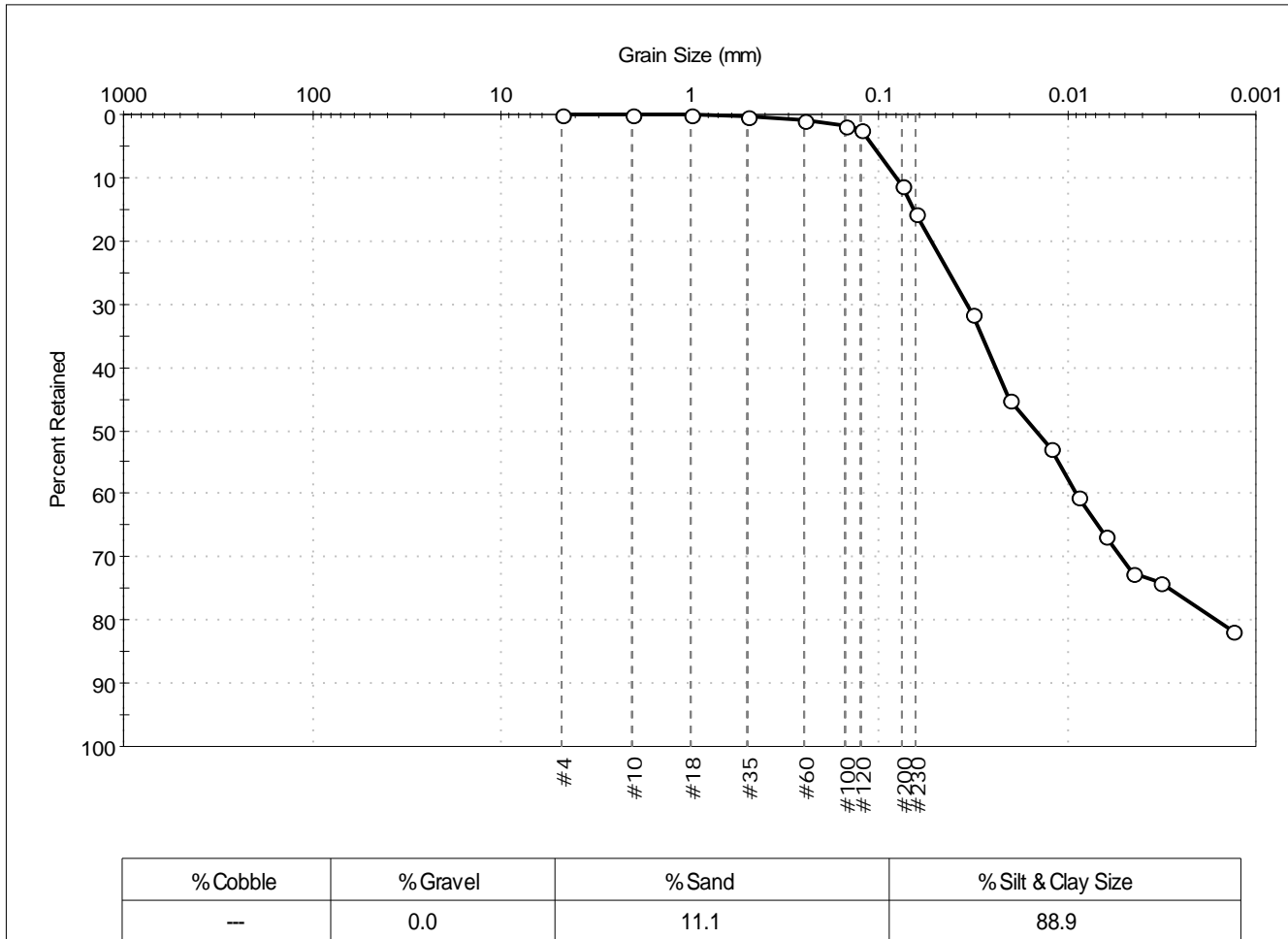
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |                                    |                        |
|-------------------------------------|-----------------------------|------------------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA          | Project No: GTX-302366 |
| Boring ID: 345-14LTM                | Sample Type: bag            | Tested By: jbr                     | Checked By: jdt        |
| Sample ID: NBH14-0110DUP            | Test Date: 10/27/14         | Test Id: 310100                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 16           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 32           |               |          |
| ---        | 0.0204             | 45           |               |          |
| ---        | 0.0122             | 53           |               |          |
| ---        | 0.0088             | 60           |               |          |
| ---        | 0.0063             | 67           |               |          |
| ---        | 0.0045             | 73           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0013             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0648 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0242 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0148 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

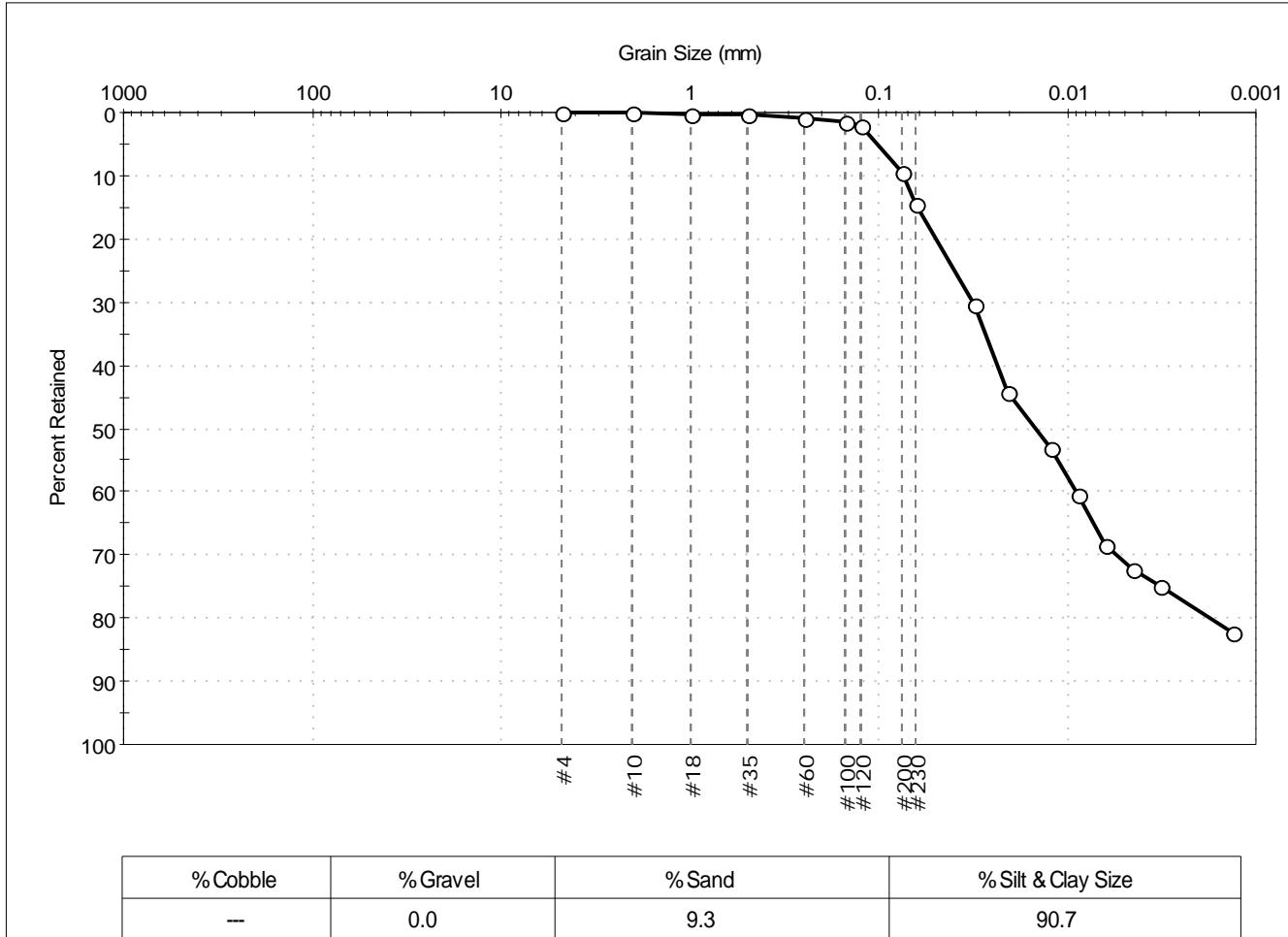
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 345-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0111               | Test Date: 11/18/14         | Test Id: 310101                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 14           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 30           |               |          |
| ---        | 0.0206             | 44           |               |          |
| ---        | 0.0122             | 53           |               |          |
| ---        | 0.0088             | 61           |               |          |
| ---        | 0.0063             | 69           |               |          |
| ---        | 0.0045             | 72           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0013             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0616 mm | D <sub>30</sub> = 0.0055 mm |
| D <sub>60</sub> = 0.0233 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0146 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

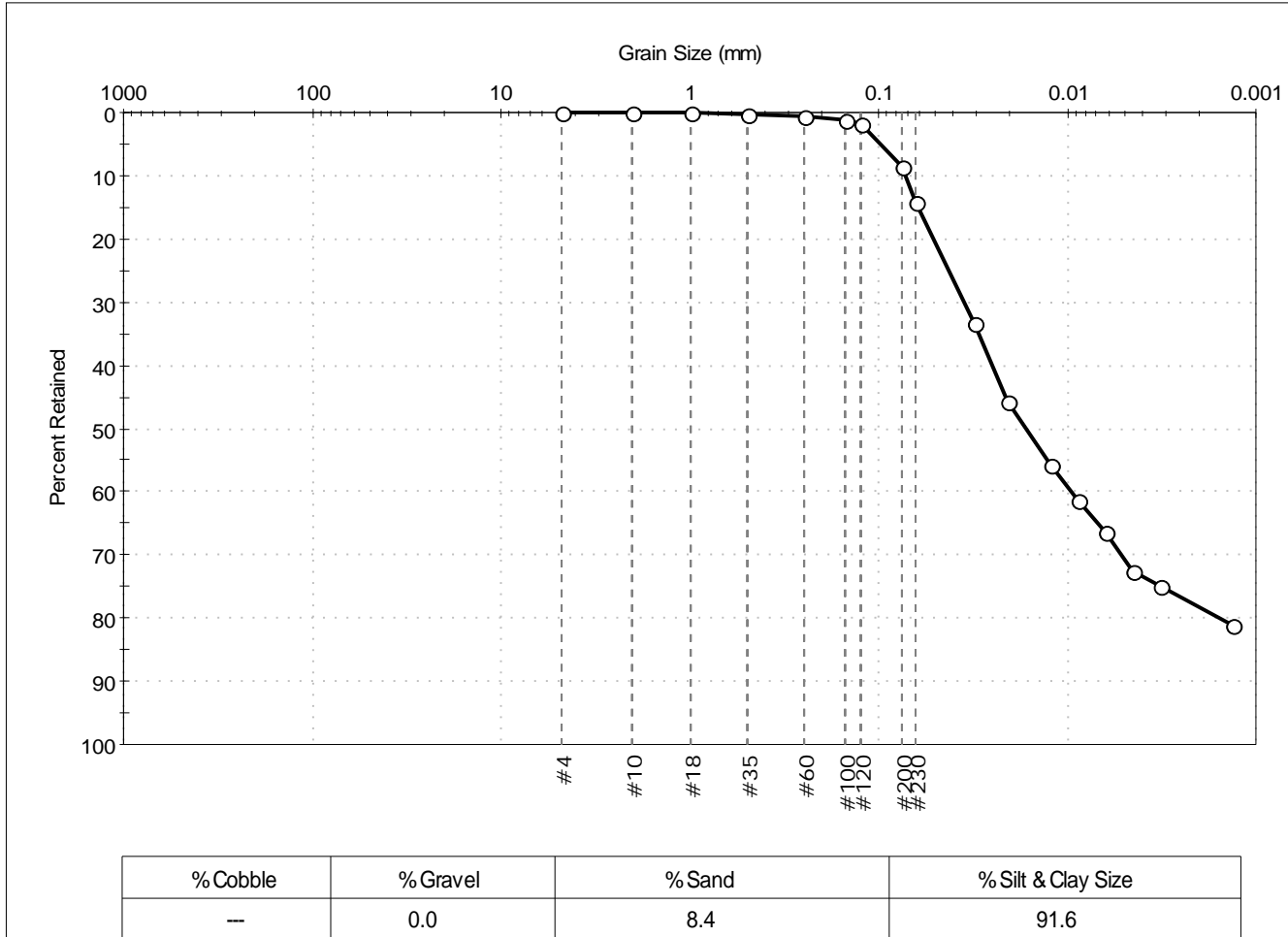
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                  | Project No: GTX-302366 |
| Boring ID: 345-14LTM                | Sample Type: bag            | Tested By: jbr                             | Checked By: jdt        |
| Sample ID: NBH14-0112               | Test Date: 11/18/14         | Test Id: 310102                            |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 14           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 33           |               |          |
| ---        | 0.0207             | 46           |               |          |
| ---        | 0.0123             | 56           |               |          |
| ---        | 0.0088             | 61           |               |          |
| ---        | 0.0063             | 66           |               |          |
| ---        | 0.0045             | 73           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0013             | 81           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0613 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0252 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0167 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

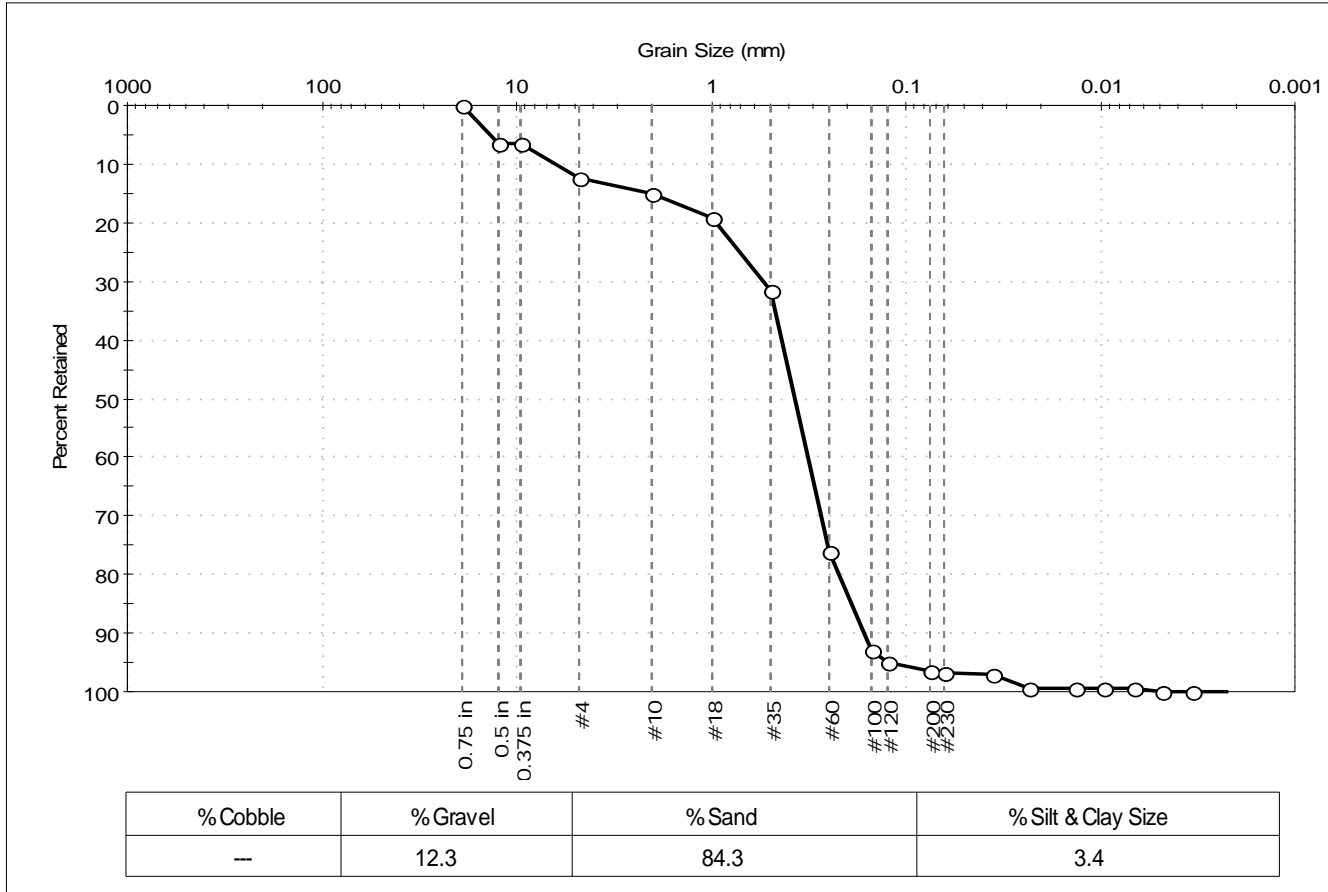
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                  | Project No: GTX-302366 |
| Boring ID: 318-14LTM                | Sample Type: bag            | Tested By: jbr                             | Checked By: jdt        |
| Sample ID: NBH14-0113               | Test Date: 11/18/14         | Test Id: 310103                            |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 6            |               |          |
| 0.375 in   | 9.50               | 6            |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 15           |               |          |
| #18        | 1.00               | 19           |               |          |
| #35        | 0.50               | 32           |               |          |
| #60        | 0.25               | 76           |               |          |
| #100       | 0.15               | 93           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 96.6         |               |          |
| #230       | 0.063              | 97           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0362             | 97           |               |          |
| ---        | 0.0235             | 99           |               |          |
| ---        | 0.0135             | 99           |               |          |
| ---        | 0.0096             | 99           |               |          |
| ---        | 0.0068             | 99           |               |          |
| ---        | 0.0048             | 100          |               |          |
| ---        | 0.0034             | 100          |               |          |
| ---        | 0.0014             | 100          |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.1110 mm | D <sub>30</sub> = 0.2746 mm |
| D <sub>60</sub> = 0.4389 mm | D <sub>15</sub> = 0.1909 mm |
| D <sub>50</sub> = 0.3754 mm | D <sub>10</sub> = 0.1643 mm |
| C <sub>u</sub> = 2.671      | C <sub>c</sub> = 1.046      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

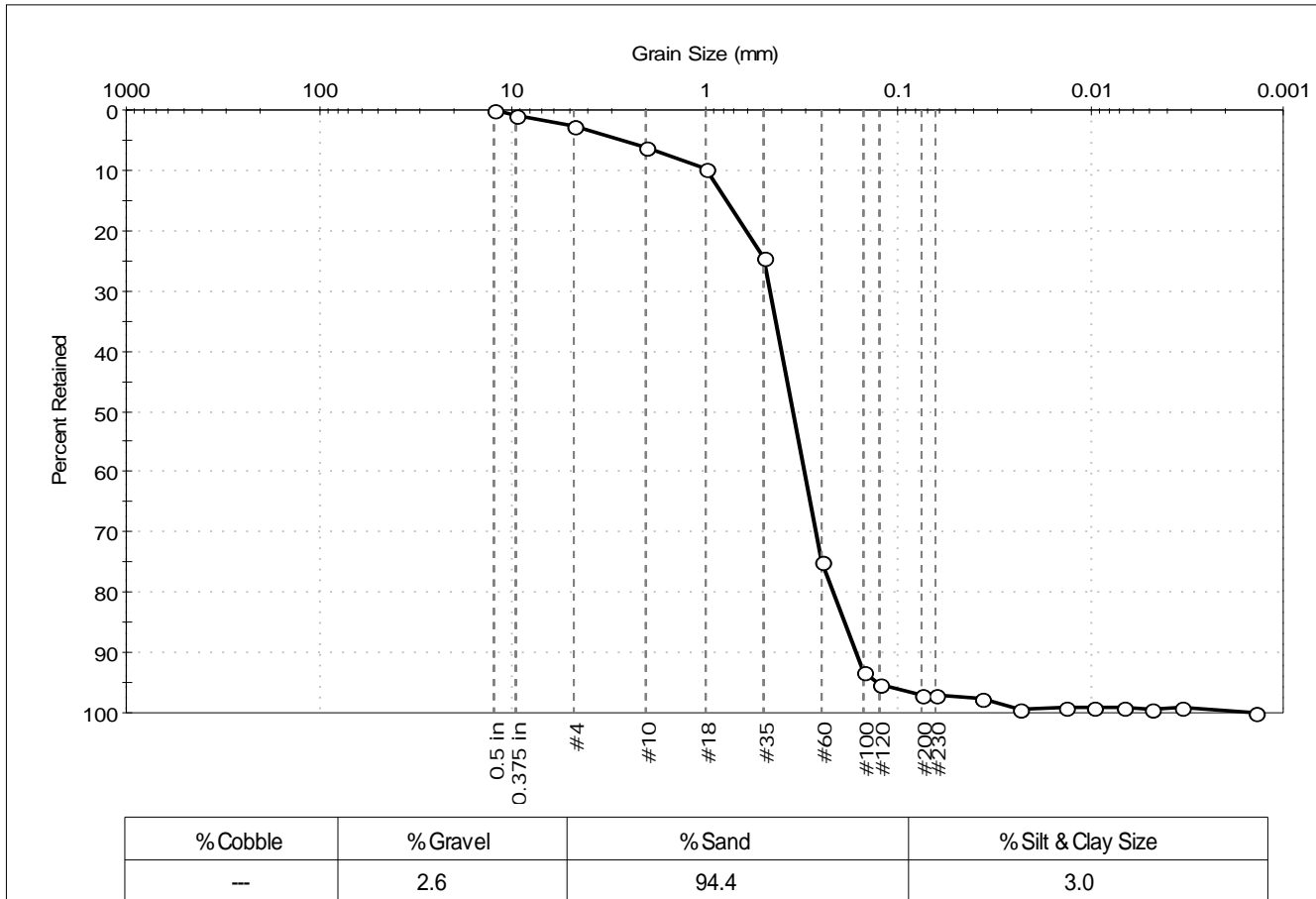
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute        | Project No: GTX-302366 |
| Project: New Bedford Harbor                |                        |
| Location: New Bedford, MA                  |                        |
| Boring ID: 318-14LTM                       | Sample Type: bag       |
| Sample ID: NBH14-0114                      | Test Date: 11/18/14    |
| Depth: ---                                 | Test Id: 310104        |
| Test Comment: ---                          | Tested By: jbr         |
| Sample Description: Moist, olive gray sand | Checked By: jdt        |
| Sample Comment: ---                        |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 75           |               |          |
| #100       | 0.15               | 93           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 97.0         |               |          |
| #230       | 0.063              | 97           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0366             | 98           |               |          |
| ---        | 0.0235             | 99           |               |          |
| ---        | 0.0135             | 99           |               |          |
| ---        | 0.0095             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0014             | 100          |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7829 mm | D <sub>30</sub> = 0.2678 mm |
| D <sub>60</sub> = 0.4043 mm | D <sub>15</sub> = 0.1888 mm |
| D <sub>50</sub> = 0.3524 mm | D <sub>10</sub> = 0.1640 mm |
| C <sub>u</sub> = 2.465      | C <sub>c</sub> = 1.082      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

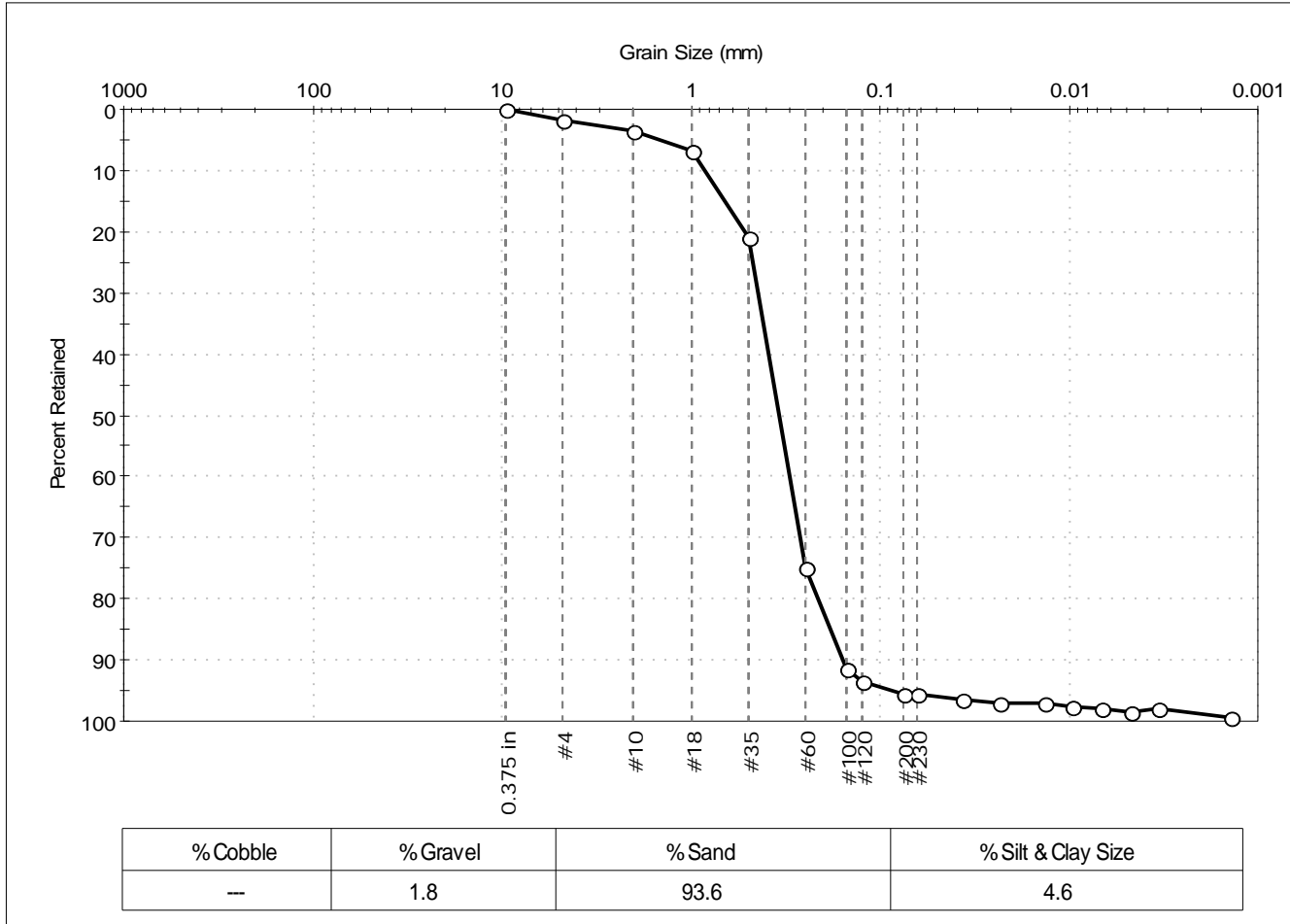
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 318-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0115                  | Test Date:   | 11/18/14   |
| Depth:              | ---                         | Test Id:     | 310105     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, olive gray sand      |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 75           |               |          |
| #100       | 0.15               | 91           |               |          |
| #120       | 0.12               | 94           |               |          |
| #200       | 0.075              | 95.4         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0368             | 96           |               |          |
| ---        | 0.0233             | 97           |               |          |
| ---        | 0.0135             | 97           |               |          |
| ---        | 0.0095             | 98           |               |          |
| ---        | 0.0067             | 98           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6703 mm | D <sub>30</sub> = 0.2662 mm |
| D <sub>60</sub> = 0.3918 mm | D <sub>15</sub> = 0.1832 mm |
| D <sub>50</sub> = 0.3444 mm | D <sub>10</sub> = 0.1571 mm |
| C <sub>u</sub> = 2.494      | C <sub>c</sub> = 1.151      |

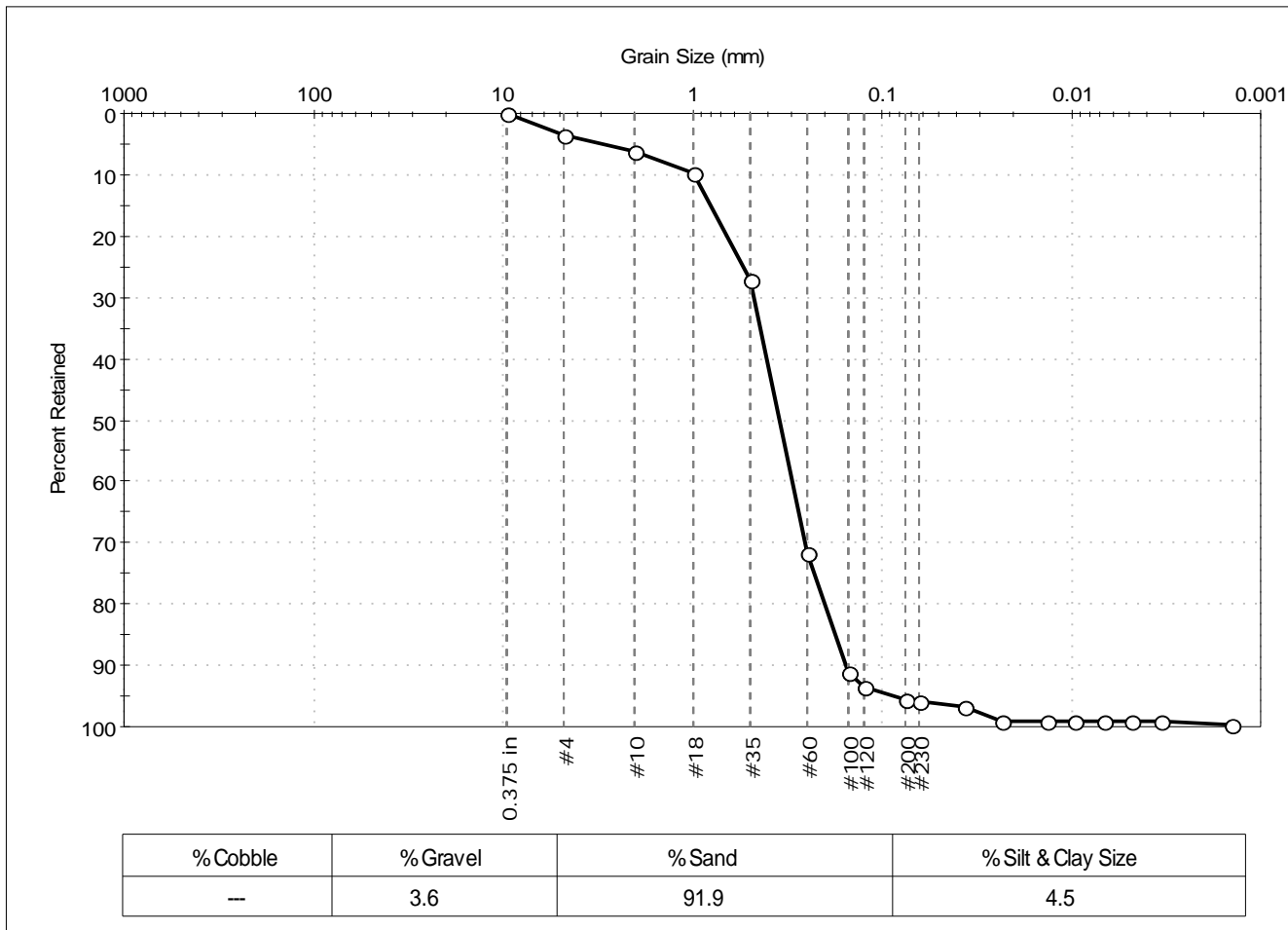
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute        | Project No: GTX-302366 |
| Project: New Bedford Harbor                |                        |
| Location: New Bedford, MA                  |                        |
| Boring ID: 318-14LTM                       | Sample Type: bag       |
| Sample ID: NBH14-0116                      | Test Date: 11/18/14    |
| Depth: ---                                 | Test Id: 310106        |
| Test Comment: ---                          | Tested By: jbr         |
| Sample Description: Moist, olive gray sand | Checked By: jdt        |
| Sample Comment: ---                        |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 27           |               |          |
| #60        | 0.25               | 72           |               |          |
| #100       | 0.15               | 91           |               |          |
| #120       | 0.12               | 93           |               |          |
| #200       | 0.075              | 95.5         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0365             | 97           |               |          |
| ---        | 0.0235             | 99           |               |          |
| ---        | 0.0134             | 99           |               |          |
| ---        | 0.0096             | 99           |               |          |
| ---        | 0.0068             | 99           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0014             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8112 mm | D <sub>30</sub> = 0.2563 mm |
| D <sub>60</sub> = 0.4089 mm | D <sub>15</sub> = 0.1765 mm |
| D <sub>50</sub> = 0.3499 mm | D <sub>10</sub> = 0.1550 mm |
| C <sub>u</sub> = 2.638      | C <sub>c</sub> = 1.036      |

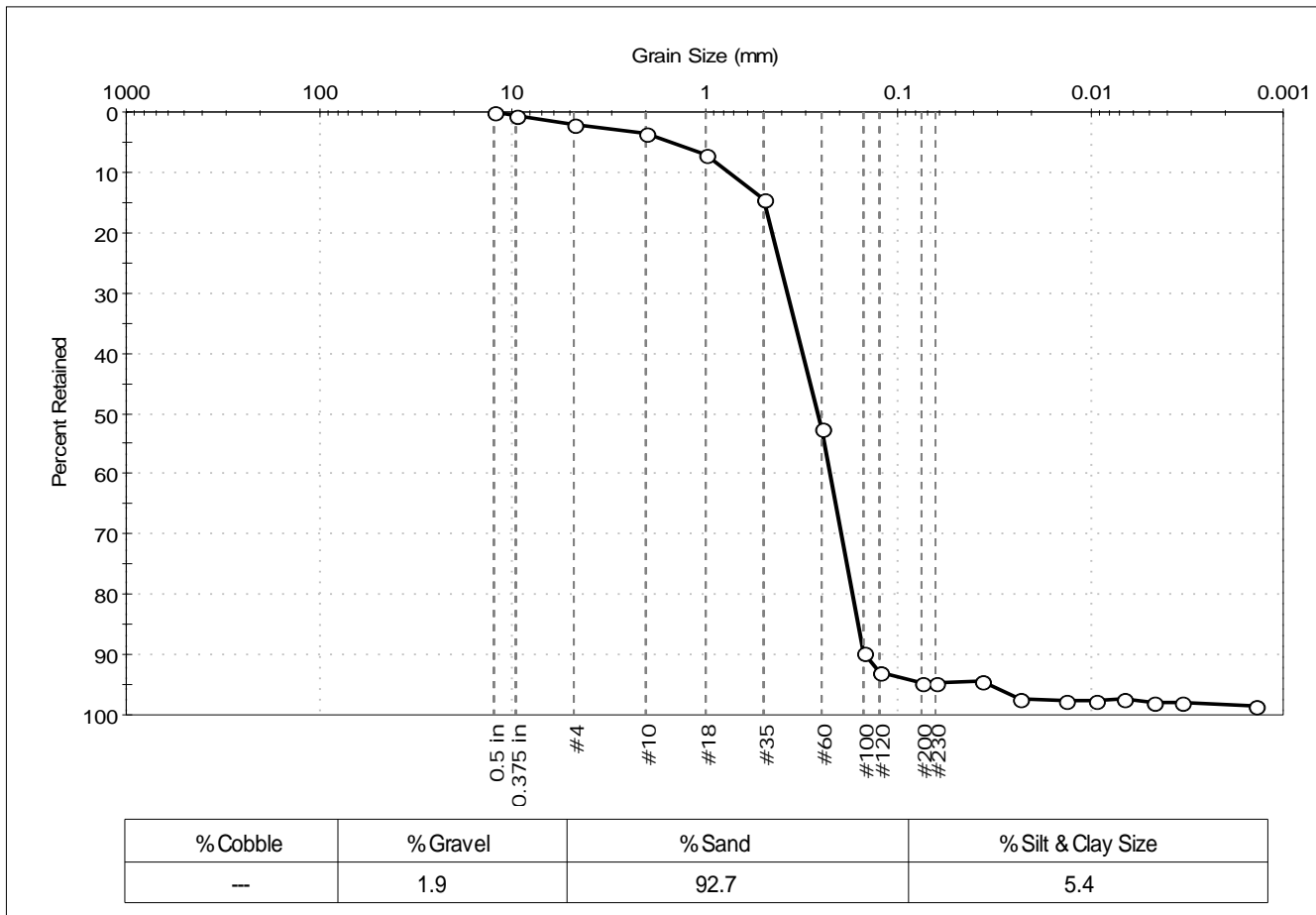
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                 | Project No: GTX-302366 |
| Boring ID: 311-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0117               | Test Date: 11/18/14         | Test Id: 310107   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray sand with silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 53           |               |          |
| #100       | 0.15               | 90           |               |          |
| #120       | 0.12               | 93           |               |          |
| #200       | 0.075              | 94.6         |               |          |
| #230       | 0.063              | 95           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 94           |               |          |
| ---        | 0.0233             | 97           |               |          |
| ---        | 0.0135             | 98           |               |          |
| ---        | 0.0095             | 98           |               |          |
| ---        | 0.0067             | 97           |               |          |
| ---        | 0.0048             | 98           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0014             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4955 mm | D <sub>30</sub> = 0.1965 mm |
| D <sub>60</sub> = 0.3143 mm | D <sub>15</sub> = 0.1597 mm |
| D <sub>50</sub> = 0.2620 mm | D <sub>10</sub> = 0.1464 mm |
| C <sub>u</sub> = 2.147      | C <sub>c</sub> = 0.839      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

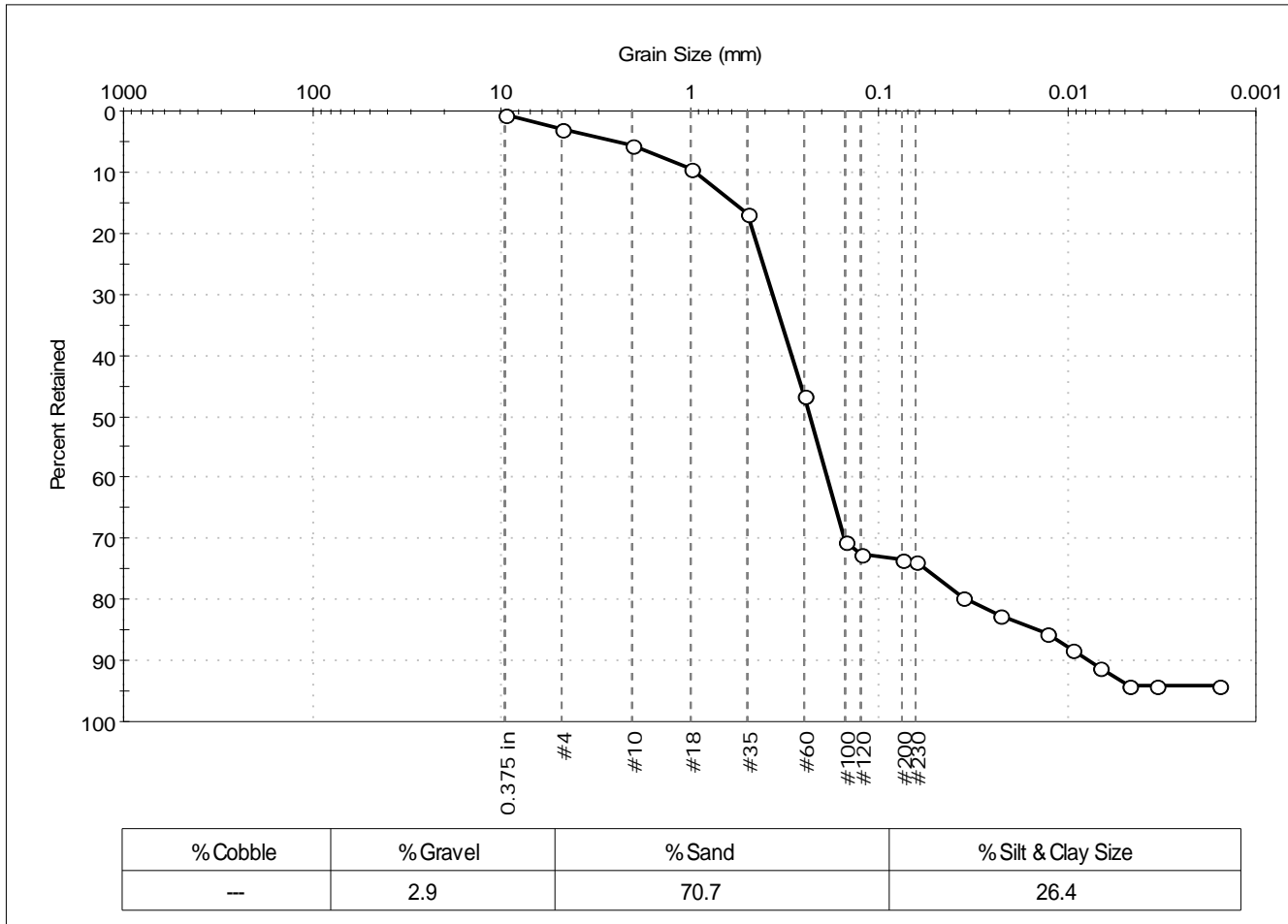
Separation of Sample: #230 Sieve





|                     |                                   |              |            |
|---------------------|-----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute       |              |            |
| Project:            | New Bedford Harbor                |              |            |
| Location:           | New Bedford, MA                   | Project No:  | GTX-302366 |
| Boring ID:          | 311-14LTM                         | Sample Type: | bag        |
| Sample ID:          | NBH14-0118                        | Test Date:   | 11/18/14   |
| Depth:              | ---                               | Test Id:     | 310108     |
| Test Comment:       | ---                               |              |            |
| Sample Description: | Moist, dark olive gray silty sand |              |            |
| Sample Comment:     | ---                               |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 17           |               |          |
| #60        | 0.25               | 47           |               |          |
| #100       | 0.15               | 71           |               |          |
| #120       | 0.12               | 73           |               |          |
| #200       | 0.075              | 74           |               |          |
| #230       | 0.063              | 74           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0361             | 80           |               |          |
| ---        | 0.0230             | 83           |               |          |
| ---        | 0.0128             | 85           |               |          |
| ---        | 0.0095             | 88           |               |          |
| ---        | 0.0067             | 91           |               |          |
| ---        | 0.0048             | 94           |               |          |
| ---        | 0.0034             | 94           |               |          |
| ---        | 0.0016             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5925 mm | D <sub>30</sub> = 0.1517 mm |
| D <sub>60</sub> = 0.2922 mm | D <sub>15</sub> = 0.0140 mm |
| D <sub>50</sub> = 0.2331 mm | D <sub>10</sub> = 0.0078 mm |
| C <sub>u</sub> = 37.462     | C <sub>c</sub> = 10.097     |

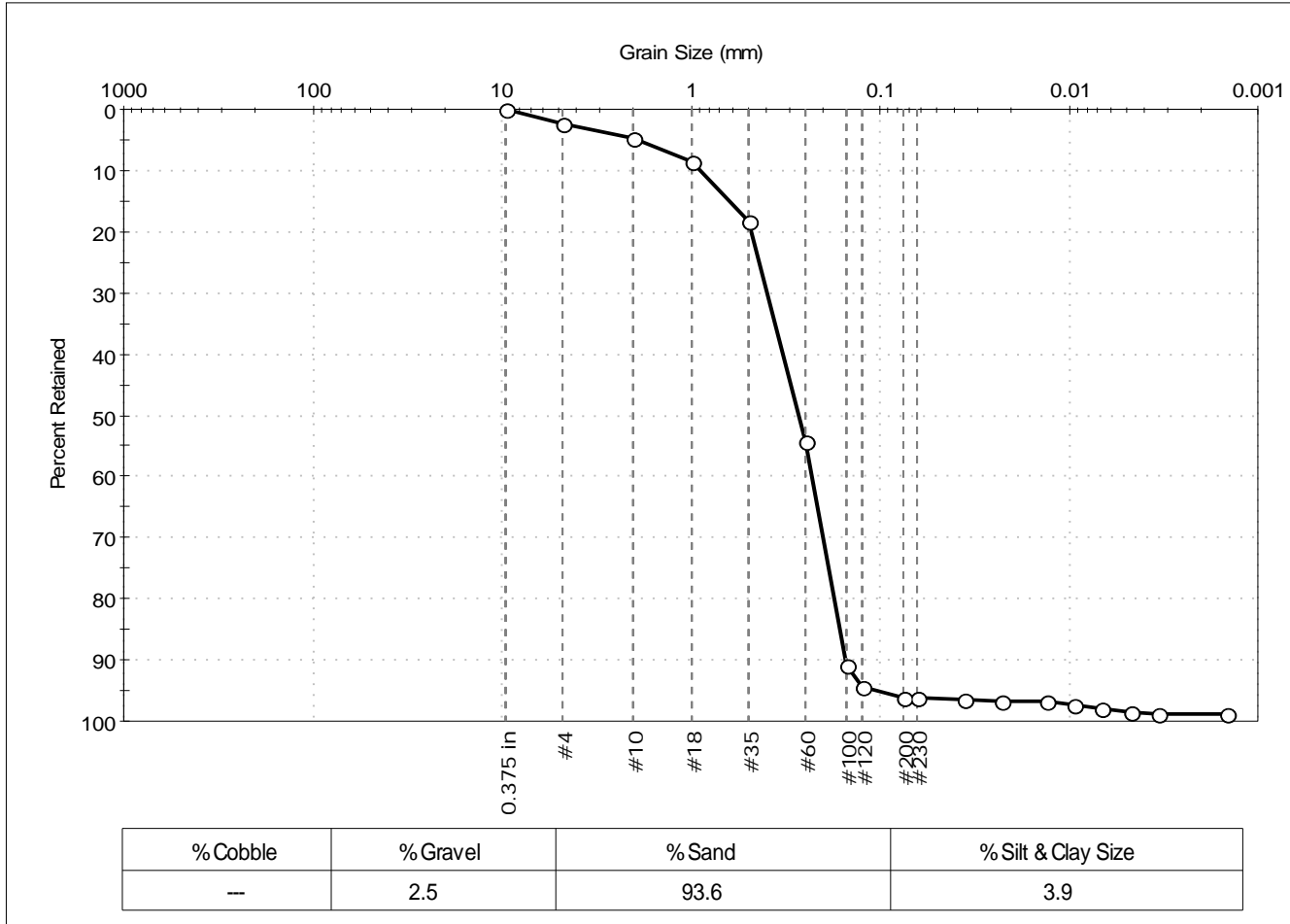
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| ASTM                  | N/A                               |
| AASHTO                | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 311-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0119                  | Test Date:   | 11/18/14   |
| Depth:              | ---                         | Test Id:     | 310109     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, dark olive gray sand |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 54           |               |          |
| #100       | 0.15               | 91           |               |          |
| #120       | 0.12               | 94           |               |          |
| #200       | 0.075              | 96.1         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0356             | 96           |               |          |
| ---        | 0.0230             | 97           |               |          |
| ---        | 0.0133             | 97           |               |          |
| ---        | 0.0094             | 97           |               |          |
| ---        | 0.0067             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0015             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6273 mm | D <sub>30</sub> = 0.2011 mm |
| D <sub>60</sub> = 0.3292 mm | D <sub>15</sub> = 0.1631 mm |
| D <sub>50</sub> = 0.2719 mm | D <sub>10</sub> = 0.1521 mm |
| C <sub>u</sub> = 2.164      | C <sub>c</sub> = 0.808      |

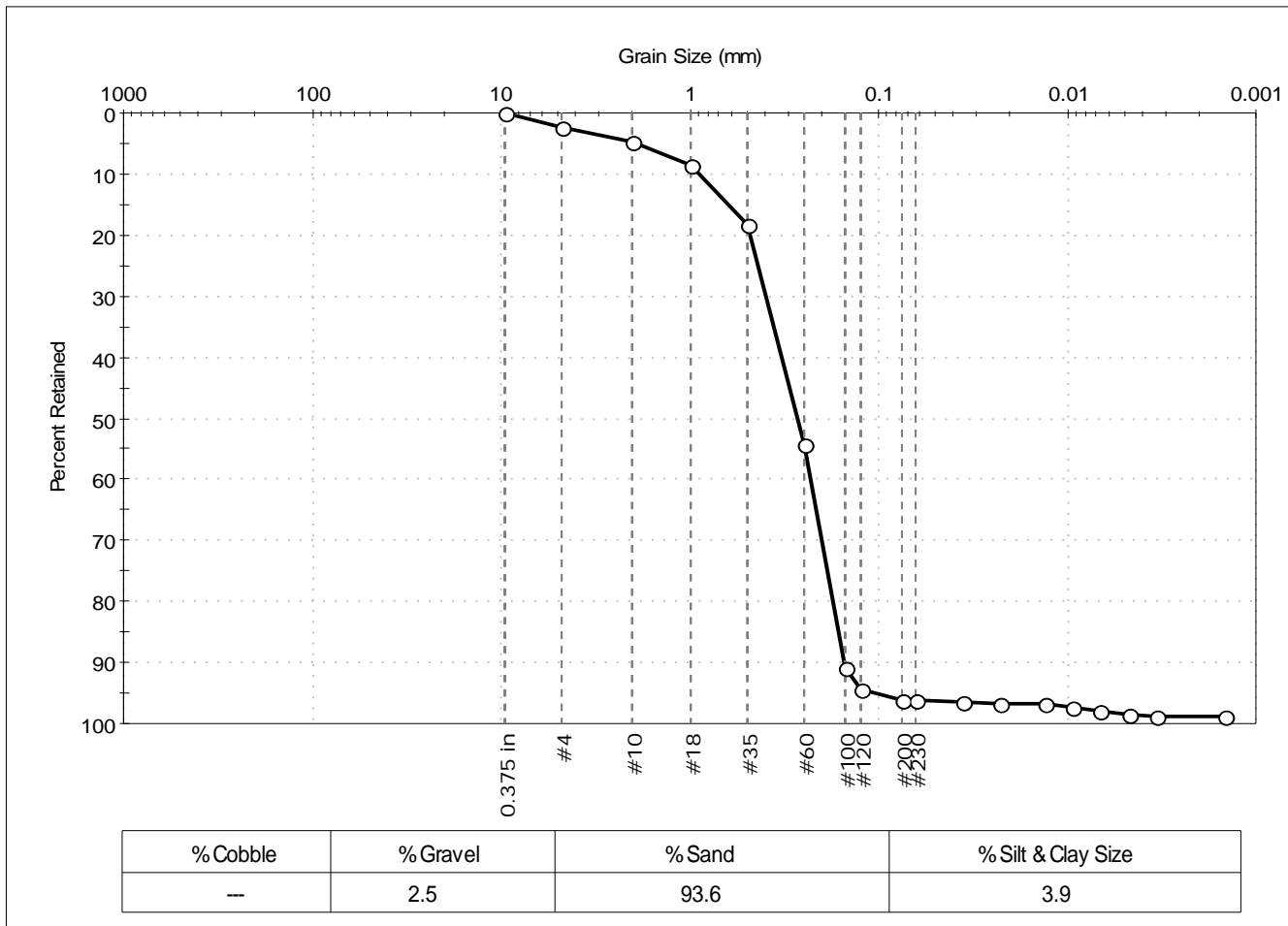
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute             | Project No: GTX-302366 |
| Project: New Bedford Harbor                     |                        |
| Location: New Bedford, MA                       |                        |
| Boring ID: 311-14LTM                            | Sample Type: bag       |
| Sample ID: NBH14-0119                           | Test Date: 11/18/14    |
| Depth: ---                                      | Test Id: 310109        |
| Test Comment: ---                               | Tested By: jbr         |
| Sample Description: Moist, dark olive gray sand | Checked By: jdt        |
| Sample Comment: ---                             |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 54           |               |          |
| #100       | 0.15               | 91           |               |          |
| #120       | 0.12               | 94           |               |          |
| #200       | 0.075              | 96.1         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0356             | 96           |               |          |
| ---        | 0.0230             | 97           |               |          |
| ---        | 0.0133             | 97           |               |          |
| ---        | 0.0094             | 97           |               |          |
| ---        | 0.0067             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0015             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6273 mm | D <sub>30</sub> = 0.2011 mm |
| D <sub>60</sub> = 0.3292 mm | D <sub>15</sub> = 0.1631 mm |
| D <sub>50</sub> = 0.2719 mm | D <sub>10</sub> = 0.1521 mm |
| C <sub>u</sub> = 2.164      | C <sub>c</sub> = 0.808      |

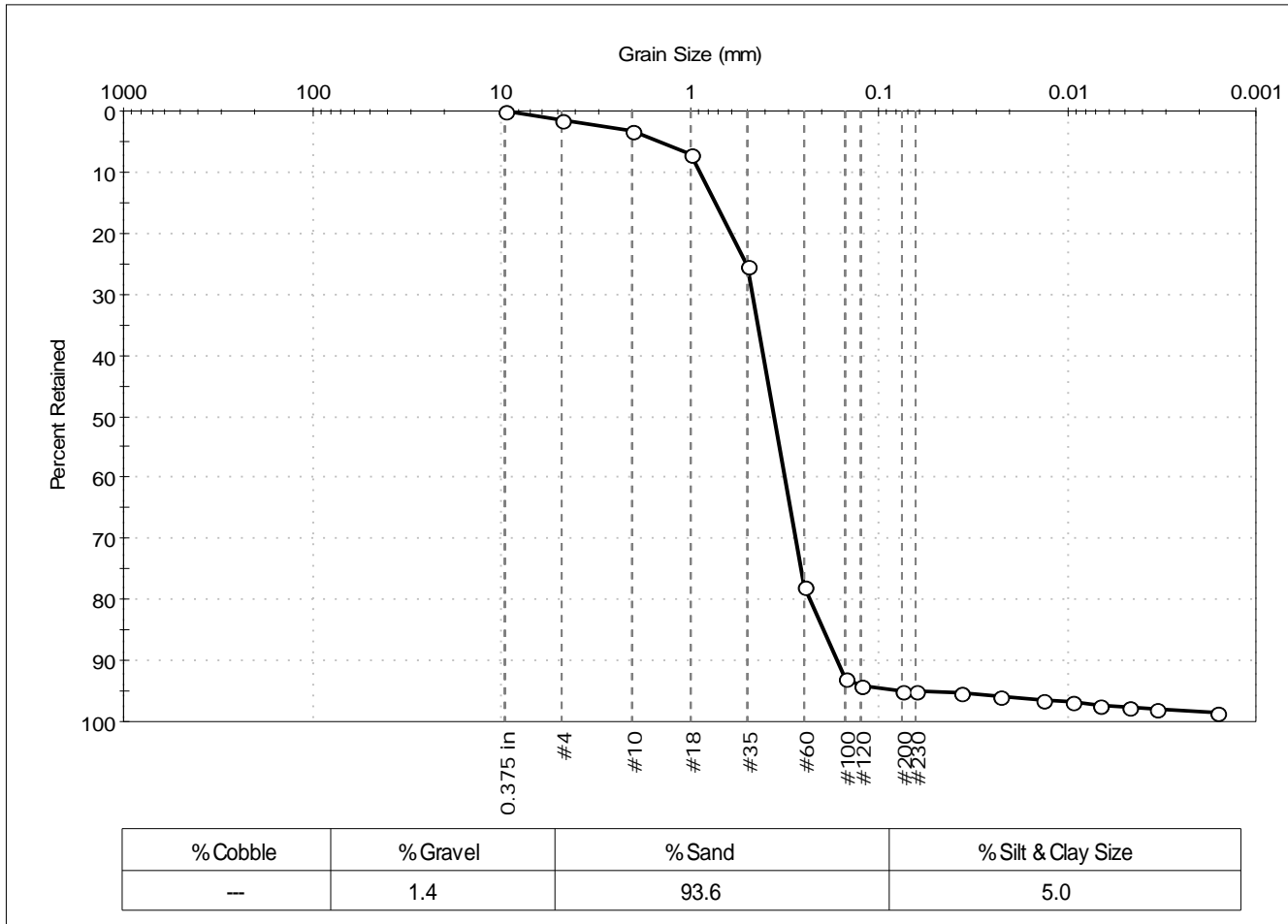
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                  |              |            |
|---------------------|----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute      |              |            |
| Project:            | New Bedford Harbor               |              |            |
| Location:           | New Bedford, MA                  | Project No:  | GTX-302366 |
| Boring ID:          | 306-14LTM                        | Sample Type: | bag        |
| Sample ID:          | NBH14-0121                       | Test Date:   | 11/18/14   |
| Depth:              | ---                              | Test Id:     | 310111     |
| Test Comment:       | ---                              |              |            |
| Sample Description: | Moist, olive gray sand with silt |              |            |
| Sample Comment:     | ---                              |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 78           |               |          |
| #100       | 0.15               | 93           |               |          |
| #120       | 0.12               | 94           |               |          |
| #200       | 0.075              | 95.0         |               |          |
| #230       | 0.063              | 95           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 95           |               |          |
| ---        | 0.0229             | 96           |               |          |
| ---        | 0.0134             | 96           |               |          |
| ---        | 0.0095             | 97           |               |          |
| ---        | 0.0067             | 97           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0016             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7421 mm | D <sub>30</sub> = 0.2778 mm |
| D <sub>60</sub> = 0.4128 mm | D <sub>15</sub> = 0.1967 mm |
| D <sub>50</sub> = 0.3617 mm | D <sub>10</sub> = 0.1658 mm |
| C <sub>u</sub> = 2.490      | C <sub>c</sub> = 1.128      |

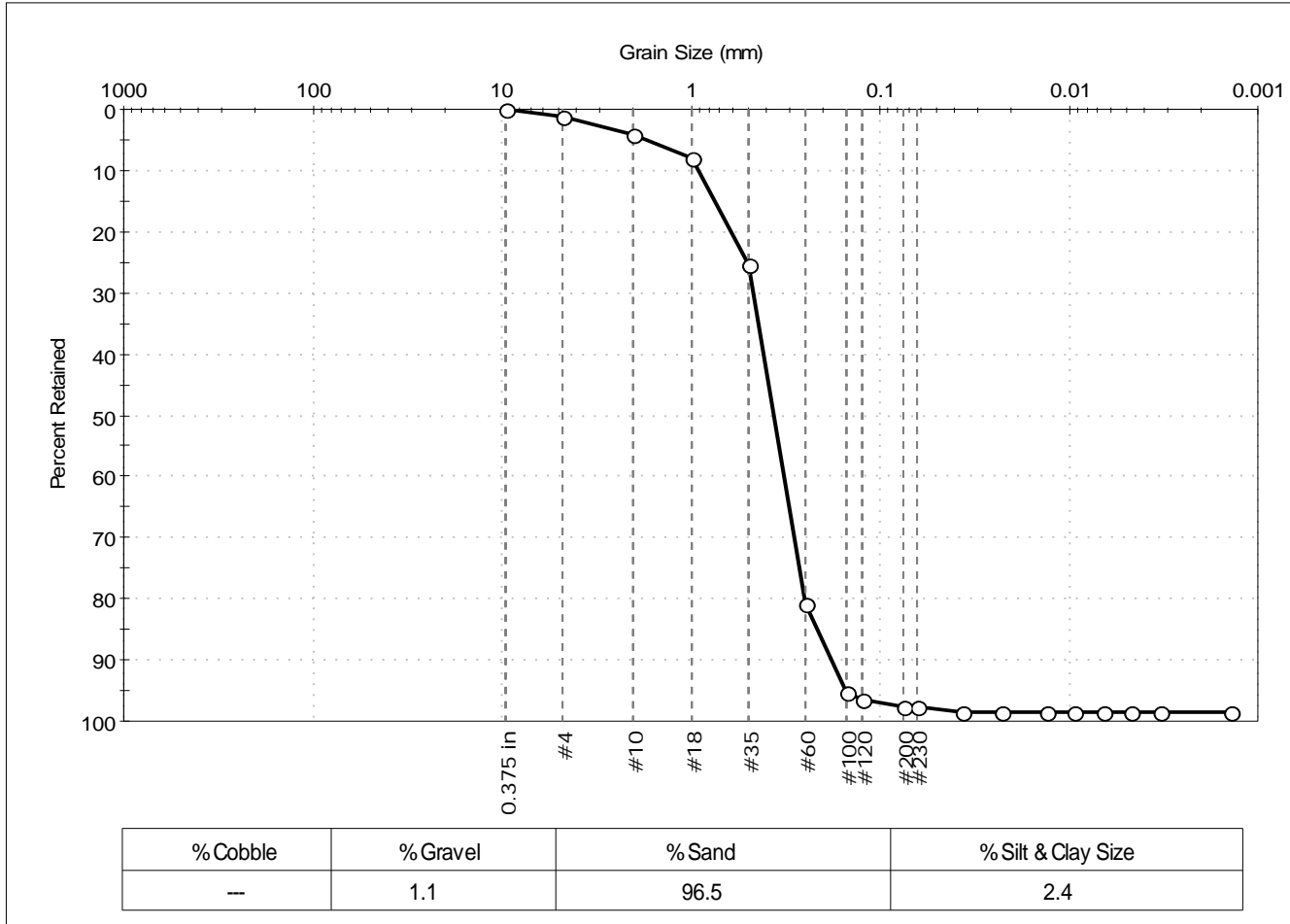
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                        | Project No: GTX-302366 |
| Boring ID: 306-14LTM                | Sample Type: bag            | Tested By: jbr                                   | Checked By: jdt        |
| Sample ID: NBH14-0122               | Test Date: 11/17/14         | Test Id: 310112                                  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, light olive gray sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 81           |               |          |
| #100       | 0.15               | 95           |               |          |
| #120       | 0.12               | 96           |               |          |
| #200       | 0.075              | 97.6         |               |          |
| #230       | 0.063              | 98           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 99           |               |          |
| ---        | 0.0230             | 99           |               |          |
| ---        | 0.0133             | 99           |               |          |
| ---        | 0.0094             | 99           |               |          |
| ---        | 0.0066             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7560 mm | D <sub>30</sub> = 0.2862 mm |
| D <sub>60</sub> = 0.4166 mm | D <sub>15</sub> = 0.2158 mm |
| D <sub>50</sub> = 0.3676 mm | D <sub>10</sub> = 0.1810 mm |
| C <sub>u</sub> = 2.302      | C <sub>c</sub> = 1.086      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

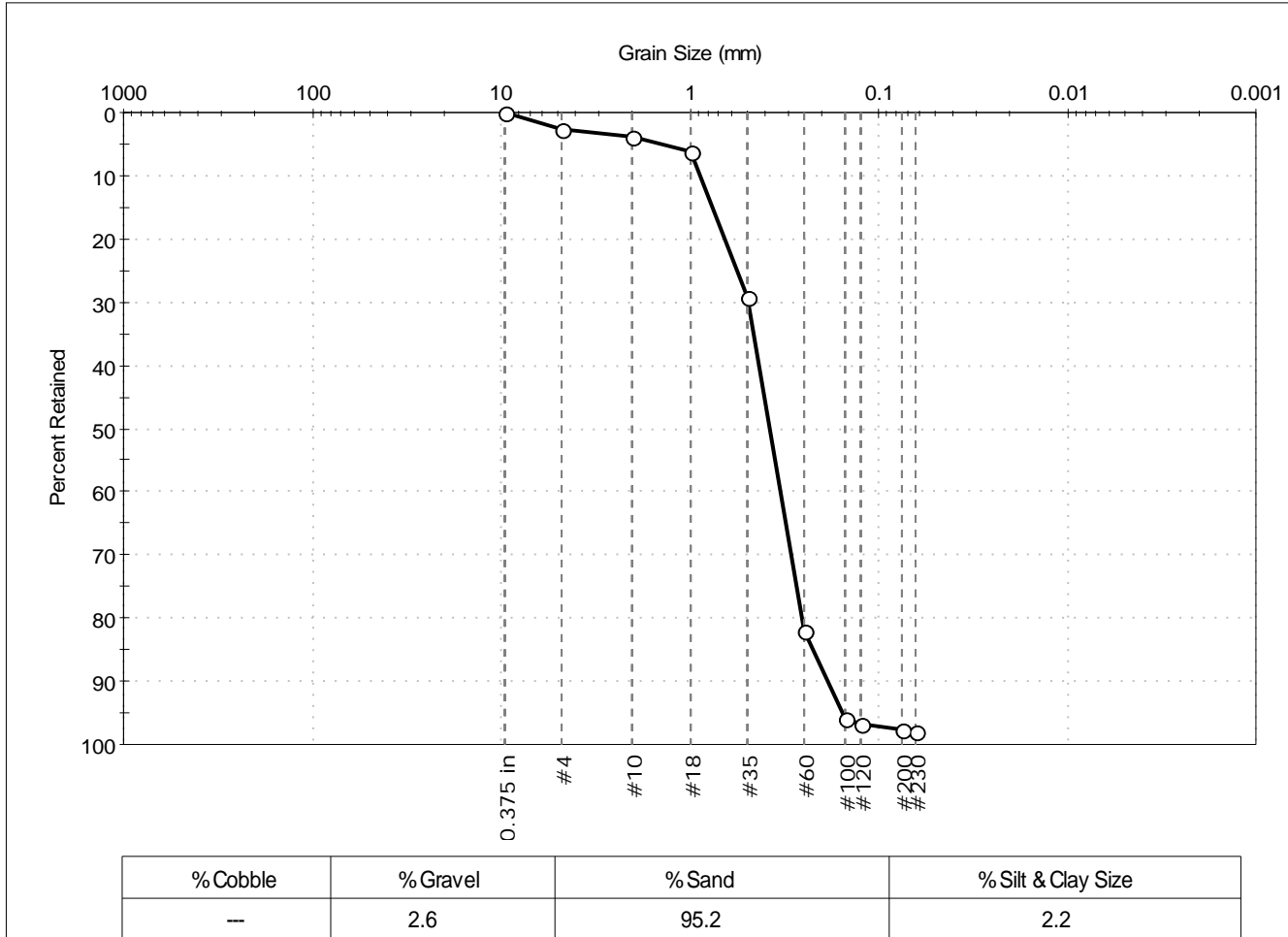
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 306-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0123                                | Test Date:   | 11/18/14   |
| Depth:              | ---                                       | Test Id:     | 310113     |
| Test Comment:       | Less than 5% fines, no hydrometer was run |              |            |
| Sample Description: | Moist, light olive gray sand              |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm | Pct Retained | Spec. Percent | Complies |
|------------|----------------|--------------|---------------|----------|
| 0.375 in   | 9.50           | 0            |               |          |
| #4         | 4.75           | 3            |               |          |
| #10        | 2.00           | 4            |               |          |
| #18        | 1.00           | 6            |               |          |
| #35        | 0.50           | 29           |               |          |
| #60        | 0.25           | 82           |               |          |
| #100       | 0.15           | 96           |               |          |
| #120       | 0.12           | 97           |               |          |
| #200       | 0.075          | 97.8         |               |          |
| #230       | 0.063          | 98           |               |          |
|            |                |              |               |          |
|            |                |              |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7690 mm | D <sub>30</sub> = 0.2927 mm |
| D <sub>60</sub> = 0.4342 mm | D <sub>15</sub> = 0.2240 mm |
| D <sub>50</sub> = 0.3807 mm | D <sub>10</sub> = 0.1867 mm |
| C <sub>u</sub> = 2.326      | C <sub>c</sub> = 1.057      |

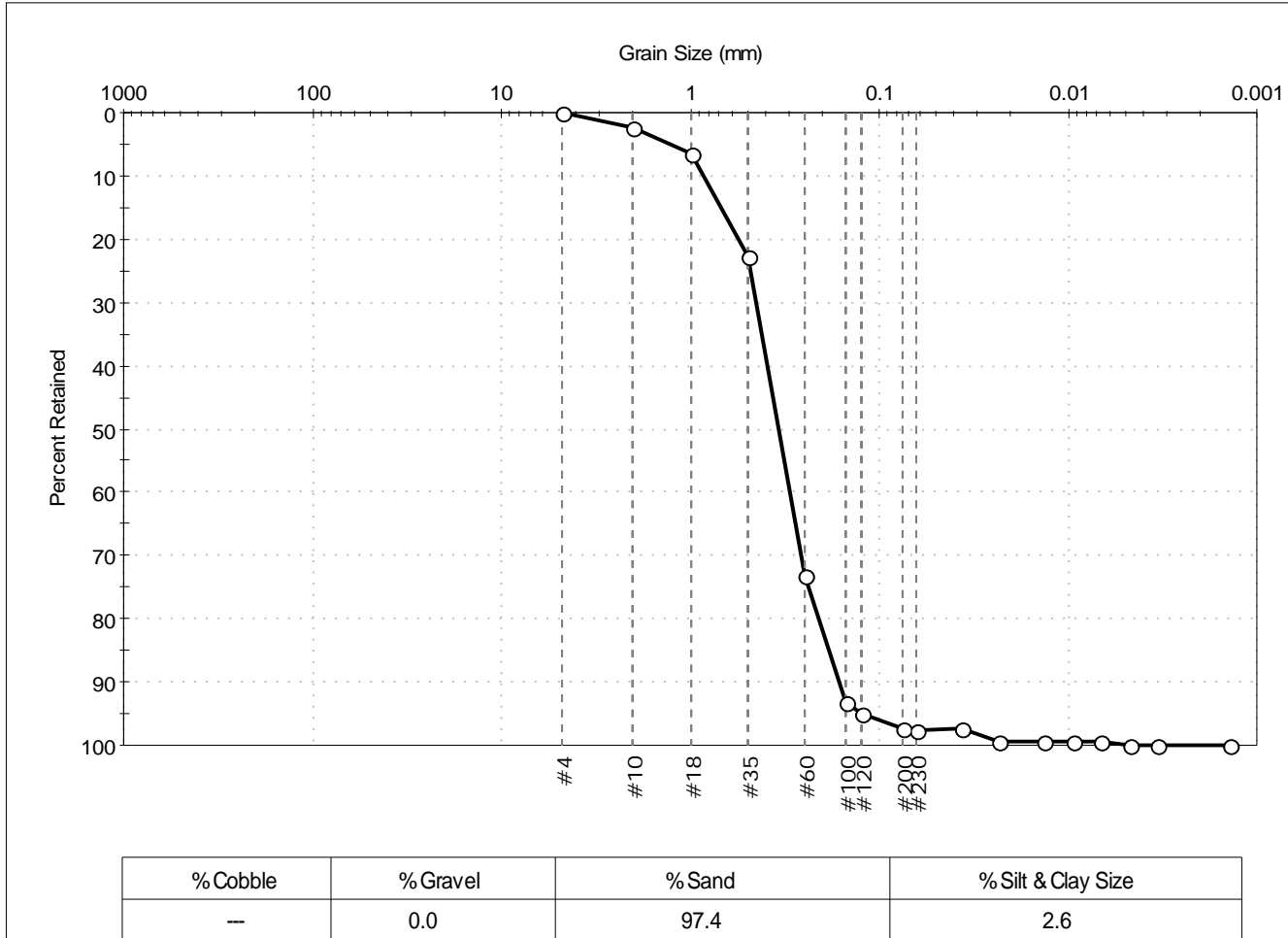
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u> |     |
|--------------------------------|-----|
| Sand/Gravel Particle Shape :   | --- |
| Sand/Gravel Hardness :         | --- |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute              | Project No: GTX-302366 |
| Project: New Bedford Harbor                      |                        |
| Location: New Bedford, MA                        |                        |
| Boring ID: 306-14LTM                             | Sample Type: bag       |
| Sample ID: NBH14-0124                            | Test Date: 11/06/14    |
| Depth: ---                                       | Test Id: 310114        |
| Test Comment: ---                                | Tested By: jbr         |
| Sample Description: Moist, light olive gray sand | Checked By: jdt        |
| Sample Comment: ---                              |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 73           |               |          |
| #100       | 0.15               | 93           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 97.4         |               |          |
| #230       | 0.063              | 98           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 97           |               |          |
| ---        | 0.0232             | 99           |               |          |
| ---        | 0.0134             | 99           |               |          |
| ---        | 0.0095             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0048             | 100          |               |          |
| ---        | 0.0034             | 100          |               |          |
| ---        | 0.0014             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6977 mm | D <sub>30</sub> = 0.2608 mm |
| D <sub>60</sub> = 0.3943 mm | D <sub>15</sub> = 0.1848 mm |
| D <sub>50</sub> = 0.3435 mm | D <sub>10</sub> = 0.1629 mm |
| C <sub>u</sub> = 2.421      | C <sub>c</sub> = 1.059      |

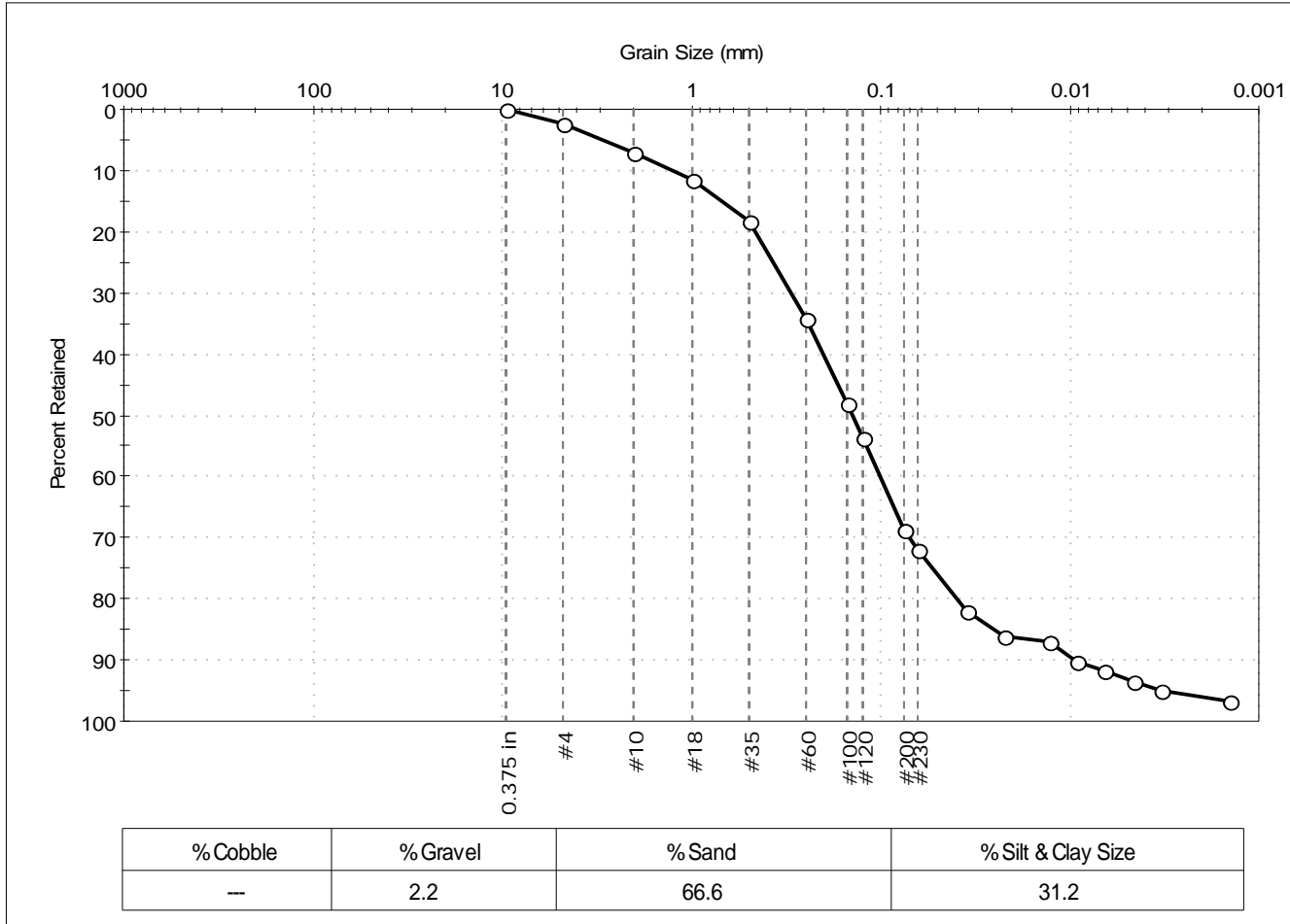
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute            |              |            |
| Project:            | New Bedford Harbor                     |              |            |
| Location:           | New Bedford, MA                        | Project No:  | GTX-302366 |
| Boring ID:          | 221-14LTM                              | Sample Type: | bag        |
| Sample ID:          | NBH14-0125                             | Test Date:   | 11/13/14   |
| Depth:              | ---                                    | Test Id:     | 310116     |
| Test Comment:       | ---                                    |              |            |
| Sample Description: | Moist, very dark olive gray silty sand |              |            |
| Sample Comment:     | ---                                    |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 48           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 69           |               |          |
| #230       | 0.063              | 72           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0346             | 82           |               |          |
| ---        | 0.0222             | 86           |               |          |
| ---        | 0.0129             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6991 mm | D <sub>30</sub> = 0.0702 mm |
| D <sub>60</sub> = 0.2028 mm | D <sub>15</sub> = 0.0250 mm |
| D <sub>50</sub> = 0.1412 mm | D <sub>10</sub> = 0.0094 mm |
| C <sub>u</sub> = 21.574     | C <sub>c</sub> = 2.585      |

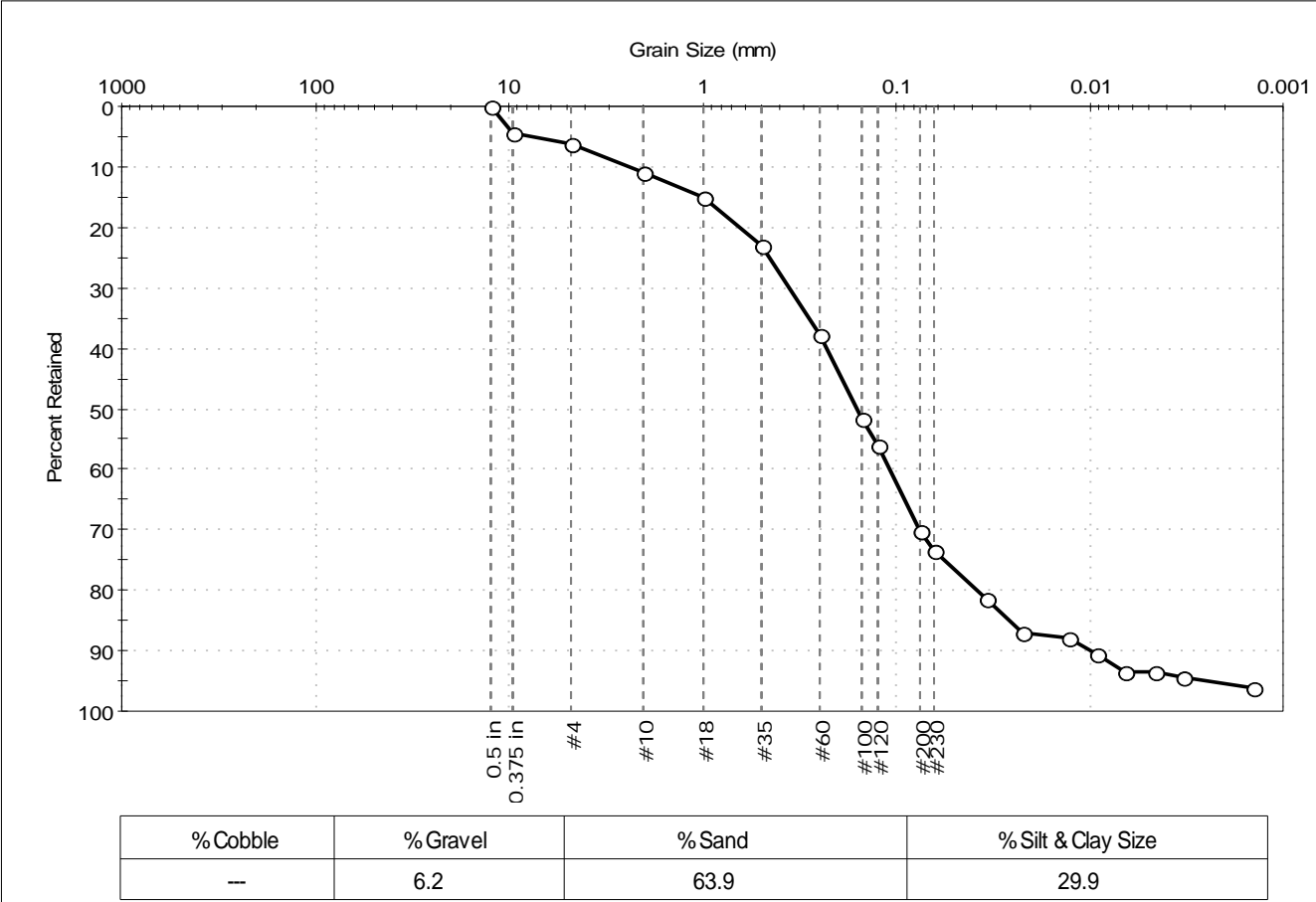
| <u>Classification</u>                    |     |
|--|-----|
| ASTM                                     | N/A |
| AASHTO Silty Gravel and Sand (A-2-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 221-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0125DUP            | Test Date: 11/17/14         | Test Id: 313929  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 11           |               |          |
| #18        | 1.00               | 15           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 38           |               |          |
| #100       | 0.15               | 52           |               |          |
| #120       | 0.12               | 56           |               |          |
| #200       | 0.075              | 70           |               |          |
| #230       | 0.063              | 74           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0345             | 81           |               |          |
| ---        | 0.0223             | 87           |               |          |
| ---        | 0.0129             | 88           |               |          |
| ---        | 0.0092             | 91           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.0227 mm | D <sub>30</sub> = 0.0754 mm |
| D <sub>60</sub> = 0.2296 mm | D <sub>15</sub> = 0.0261 mm |
| D <sub>50</sub> = 0.1589 mm | D <sub>10</sub> = 0.0100 mm |
| C <sub>u</sub> = 22.960     | C <sub>c</sub> = 2.476      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

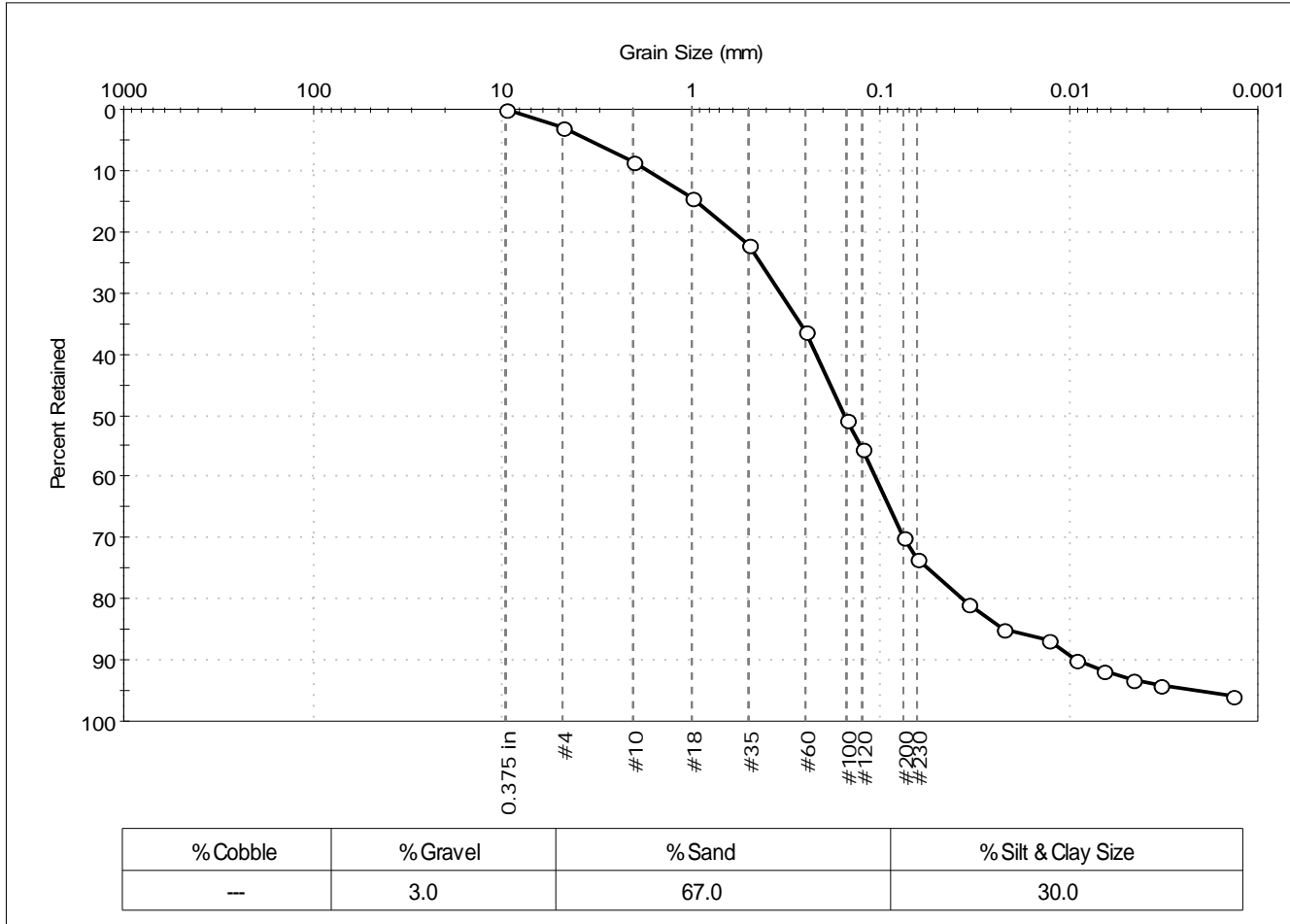
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                                   |              |            |
|---------------------|-----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute       |              |            |
| Project:            | New Bedford Harbor                |              |            |
| Location:           | New Bedford, MA                   | Project No:  | GTX-302366 |
| Boring ID:          | 221-14LTM                         | Sample Type: | bag        |
| Sample ID:          | NBH14-0126                        | Test Date:   | 11/06/14   |
| Depth:              | ---                               | Test Id:     | 310117     |
| Test Comment:       | ---                               |              |            |
| Sample Description: | Moist, dark olive gray silty sand |              |            |
| Sample Comment:     | ---                               |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 15           |               |          |
| #35        | 0.50               | 22           |               |          |
| #60        | 0.25               | 36           |               |          |
| #100       | 0.15               | 51           |               |          |
| #120       | 0.12               | 55           |               |          |
| #200       | 0.075              | 70           |               |          |
| #230       | 0.063              | 73           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0345             | 81           |               |          |
| ---        | 0.0222             | 85           |               |          |
| ---        | 0.0129             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.9625 mm | D <sub>30</sub> = 0.0748 mm |
| D <sub>60</sub> = 0.2185 mm | D <sub>15</sub> = 0.0222 mm |
| D <sub>50</sub> = 0.1538 mm | D <sub>10</sub> = 0.0092 mm |
| C <sub>u</sub> = 23.750     | C <sub>c</sub> = 2.783      |

| <u>Classification</u>                    |     |
|--|-----|
| ASTM                                     | N/A |
| AASHTO Silty Gravel and Sand (A-2-4 (0)) |     |

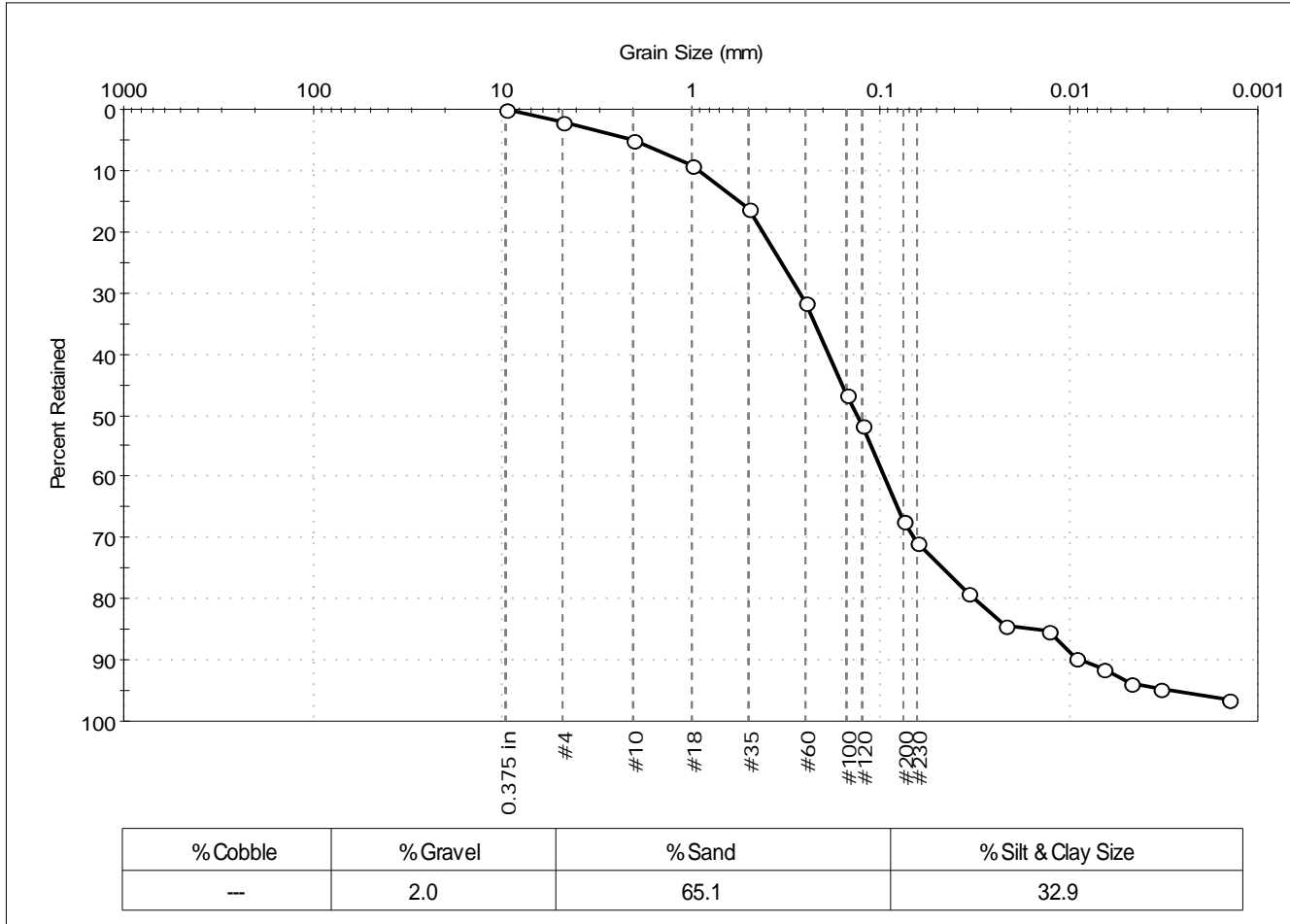
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                            | Project No: GTX-302366 |
| Boring ID: 221-14LTM                | Sample Type: bag            | Tested By: jbr                                       | Checked By: jdt        |
| Sample ID: NBH14-0127               | Test Date: 11/13/14         | Test Id: 310118                                      |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 32           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 52           |               |          |
| #200       | 0.075              | 67           |               |          |
| #230       | 0.063              | 71           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0343             | 79           |               |          |
| ---        | 0.0219             | 84           |               |          |
| ---        | 0.0128             | 85           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0065             | 91           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5664 mm | D <sub>30</sub> = 0.0652 mm |
| D <sub>60</sub> = 0.1880 mm | D <sub>15</sub> = 0.0146 mm |
| D <sub>50</sub> = 0.1330 mm | D <sub>10</sub> = 0.0084 mm |
| C <sub>u</sub> = 22.381     | C <sub>c</sub> = 2.692      |

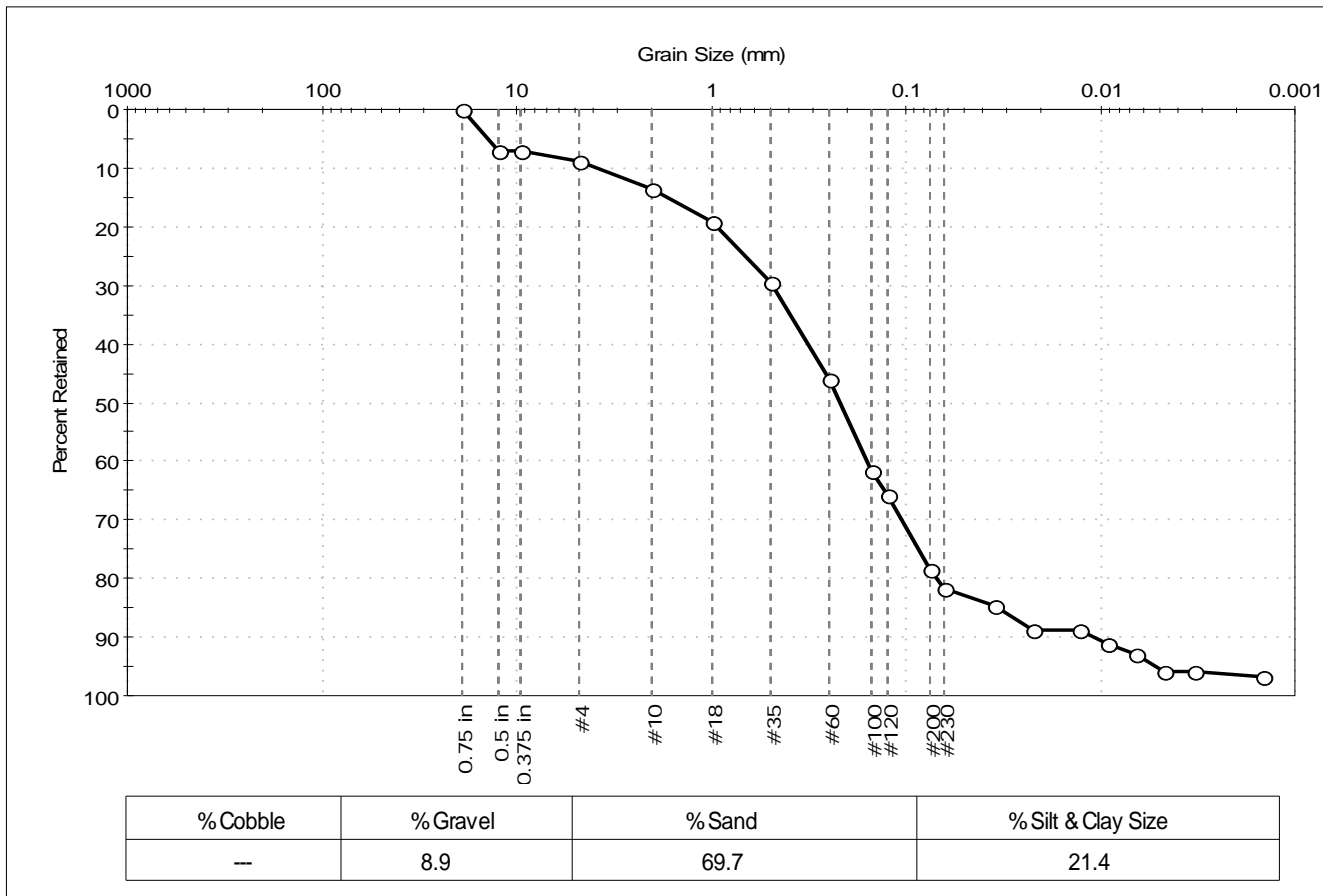
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| ASTM                  | N/A                               |
| AASHTO                | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                             | Project No: GTX-302366 |
| Boring ID: 221-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0128               | Test Date: 11/08/14         | Test Id: 310119                                       |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 7            |               |          |
| 0.375 in   | 9.50               | 7            |               |          |
| #4         | 4.75               | 9            |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 19           |               |          |
| #35        | 0.50               | 30           |               |          |
| #60        | 0.25               | 46           |               |          |
| #100       | 0.15               | 62           |               |          |
| #120       | 0.12               | 66           |               |          |
| #200       | 0.075              | 79           |               |          |
| #230       | 0.063              | 82           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0348             | 85           |               |          |
| ---        | 0.0224             | 89           |               |          |
| ---        | 0.0129             | 89           |               |          |
| ---        | 0.0092             | 91           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0015             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.6742 mm | D <sub>30</sub> = 0.1057 mm |
| D <sub>60</sub> = 0.3211 mm | D <sub>15</sub> = 0.0340 mm |
| D <sub>50</sub> = 0.2189 mm | D <sub>10</sub> = 0.0109 mm |
| C <sub>u</sub> = 29.459     | C <sub>c</sub> = 3.192      |

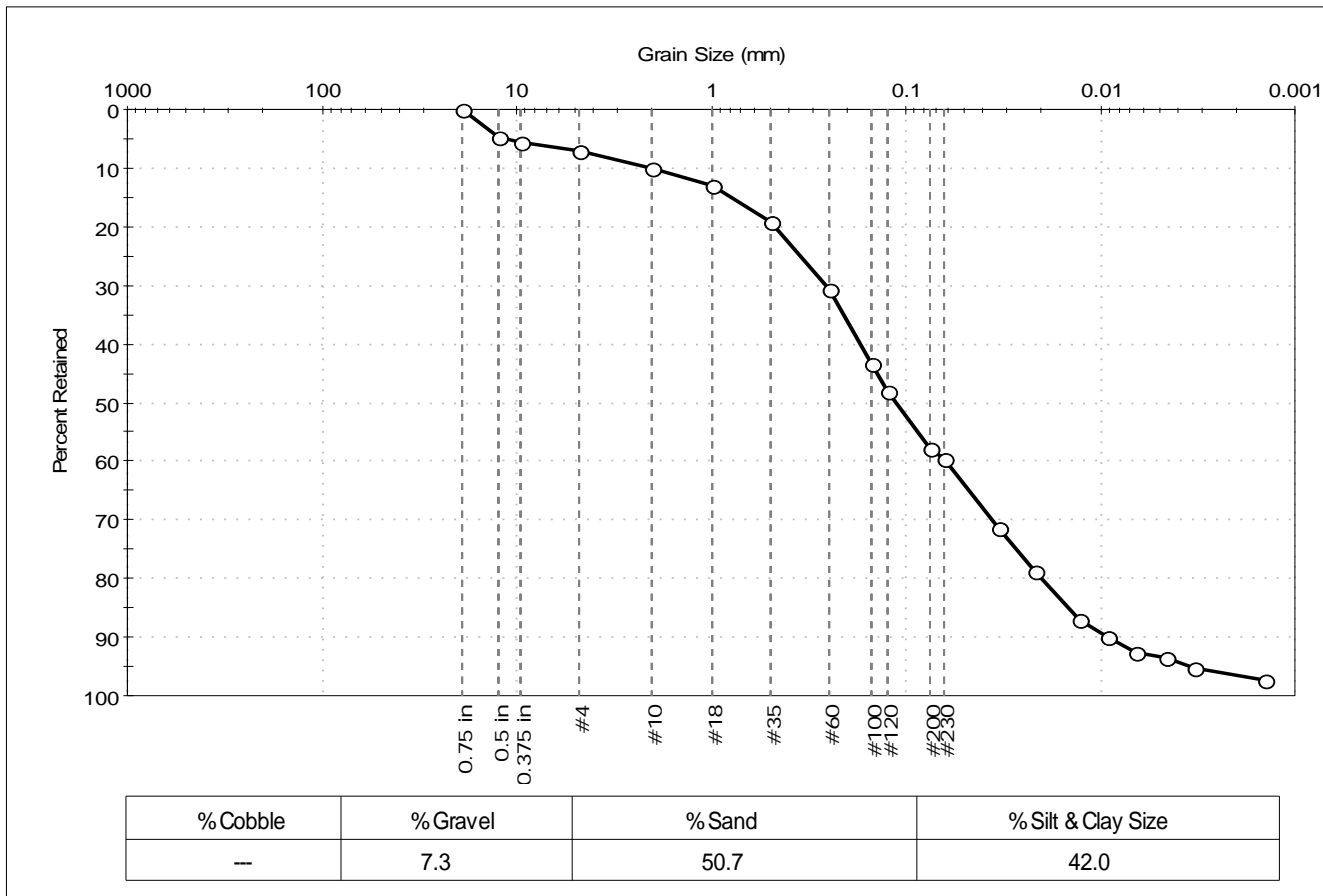
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 249-14LTM                                       | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0129                                      | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310120             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 6            |               |          |
| #4         | 4.75               | 7            |               |          |
| #10        | 2.00               | 10           |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 31           |               |          |
| #100       | 0.15               | 43           |               |          |
| #120       | 0.12               | 48           |               |          |
| #200       | 0.075              | 58           |               |          |
| #230       | 0.063              | 59           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 71           |               |          |
| ---        | 0.0217             | 79           |               |          |
| ---        | 0.0129             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8023 mm | D <sub>30</sub> = 0.0360 mm |
| D <sub>60</sub> = 0.1709 mm | D <sub>15</sub> = 0.0147 mm |
| D <sub>50</sub> = 0.1134 mm | D <sub>10</sub> = 0.0091 mm |
| C <sub>u</sub> = 18.780     | C <sub>c</sub> = 0.833      |

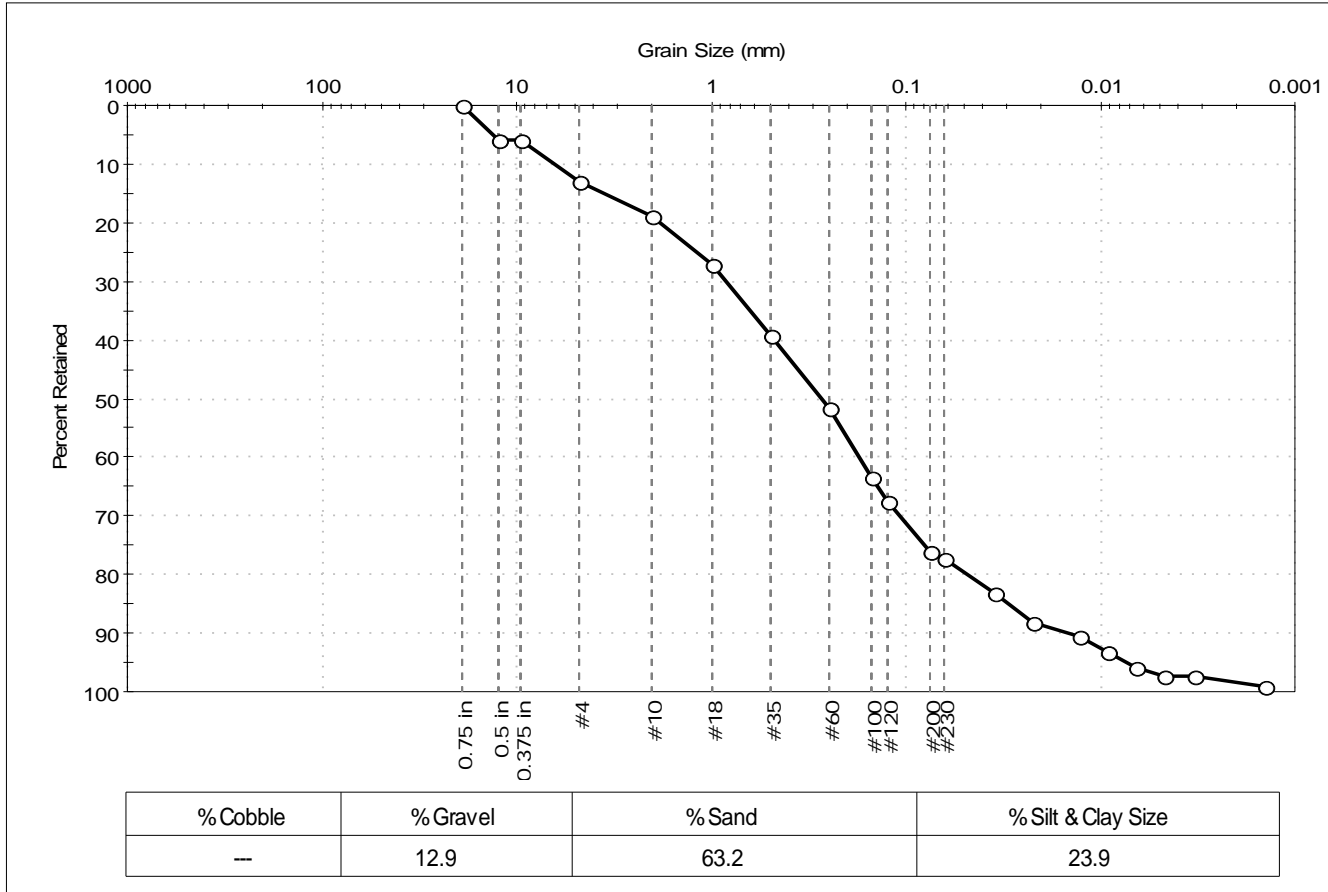
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 249-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0130               | Test Date: 11/06/14         | Test Id: 310121  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 6            |               |          |
| 0.375 in   | 9.50               | 6            |               |          |
| #4         | 4.75               | 13           |               |          |
| #10        | 2.00               | 19           |               |          |
| #18        | 1.00               | 27           |               |          |
| #35        | 0.50               | 39           |               |          |
| #60        | 0.25               | 52           |               |          |
| #100       | 0.15               | 63           |               |          |
| #120       | 0.12               | 68           |               |          |
| #200       | 0.075              | 76           |               |          |
| #230       | 0.063              | 77           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0347             | 83           |               |          |
| ---        | 0.0223             | 88           |               |          |
| ---        | 0.0130             | 91           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 96           |               |          |
| ---        | 0.0047             | 97           |               |          |
| ---        | 0.0033             | 97           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.5512 mm | D <sub>30</sub> = 0.1086 mm |
| D <sub>60</sub> = 0.4806 mm | D <sub>15</sub> = 0.0293 mm |
| D <sub>50</sub> = 0.2733 mm | D <sub>10</sub> = 0.0150 mm |
| C <sub>u</sub> = 32.040     | C <sub>c</sub> = 1.636      |

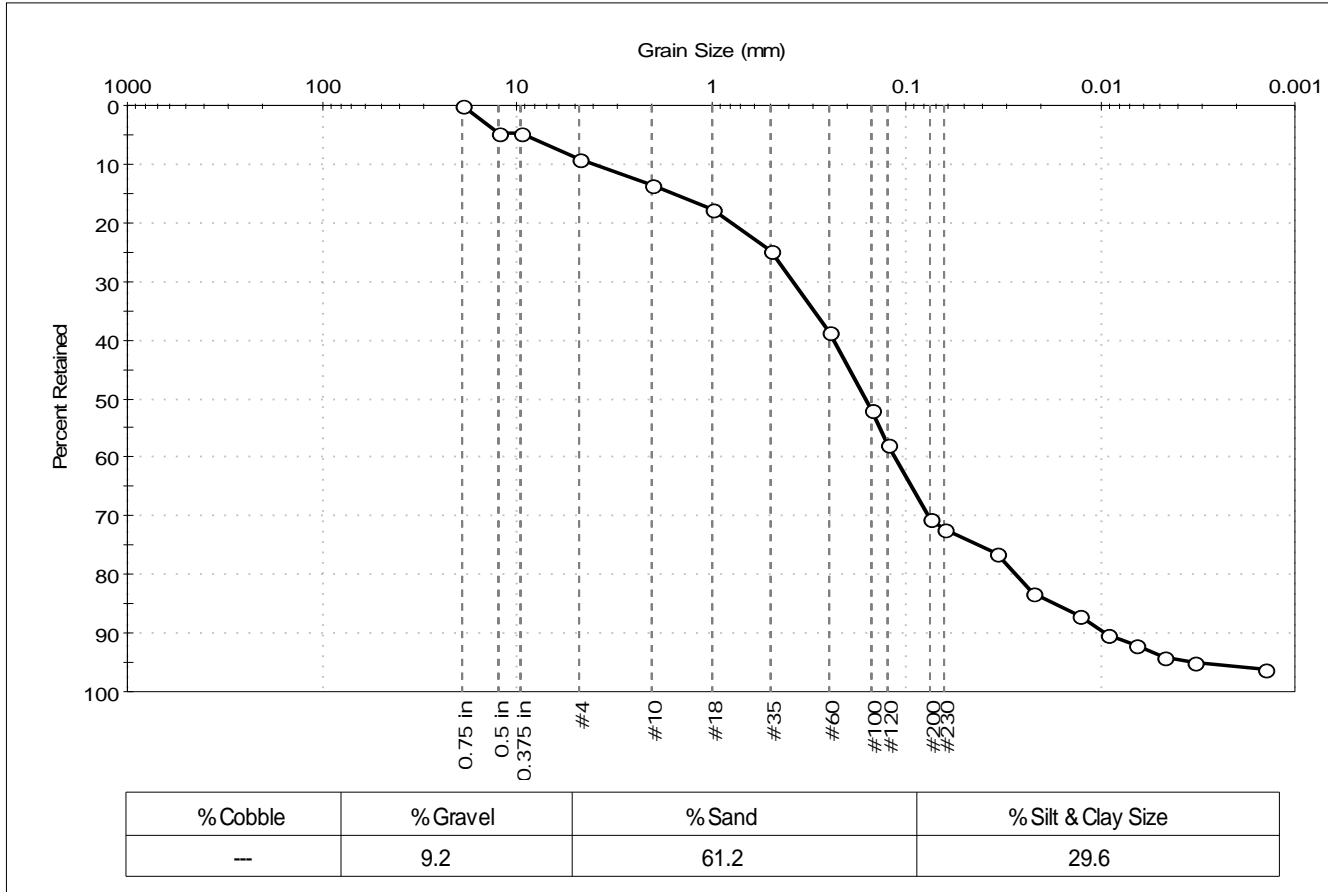
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 249-14LTM                                       | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0131                                      | Test Date: 11/12/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310122             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 9            |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 18           |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 39           |               |          |
| #100       | 0.15               | 52           |               |          |
| #120       | 0.12               | 58           |               |          |
| #200       | 0.075              | 70           |               |          |
| #230       | 0.063              | 72           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 76           |               |          |
| ---        | 0.0222             | 83           |               |          |
| ---        | 0.0130             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.5748 mm | D <sub>30</sub> = 0.0761 mm |
| D <sub>60</sub> = 0.2370 mm | D <sub>15</sub> = 0.0174 mm |
| D <sub>50</sub> = 0.1615 mm | D <sub>10</sub> = 0.0094 mm |
| C <sub>u</sub> = 25.213     | C <sub>c</sub> = 2.600      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

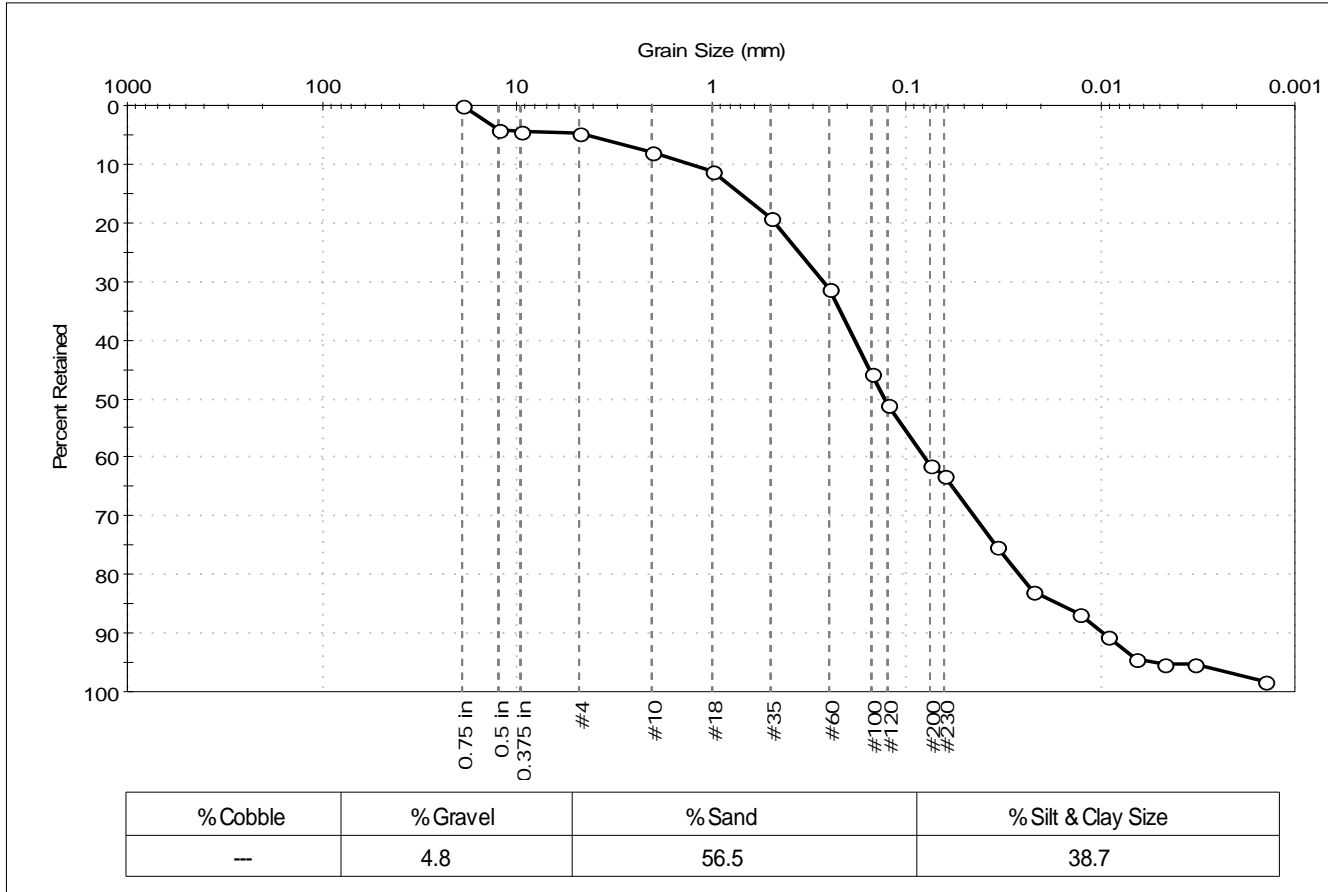
Sand/Gravel Particle Shape : ANGULAR  
 Sand/Gravel Hardness : HARD  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 249-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0132               | Test Date: 11/06/14         | Test Id: 310123  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 4            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 31           |               |          |
| #100       | 0.15               | 46           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 61           |               |          |
| #230       | 0.063              | 63           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0339             | 75           |               |          |
| ---        | 0.0222             | 83           |               |          |
| ---        | 0.0129             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 94           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7240 mm | D <sub>30</sub> = 0.0442 mm |
| D <sub>60</sub> = 0.1839 mm | D <sub>15</sub> = 0.0163 mm |
| D <sub>50</sub> = 0.1294 mm | D <sub>10</sub> = 0.0096 mm |
| C <sub>u</sub> = 19.156     | C <sub>c</sub> = 1.107      |

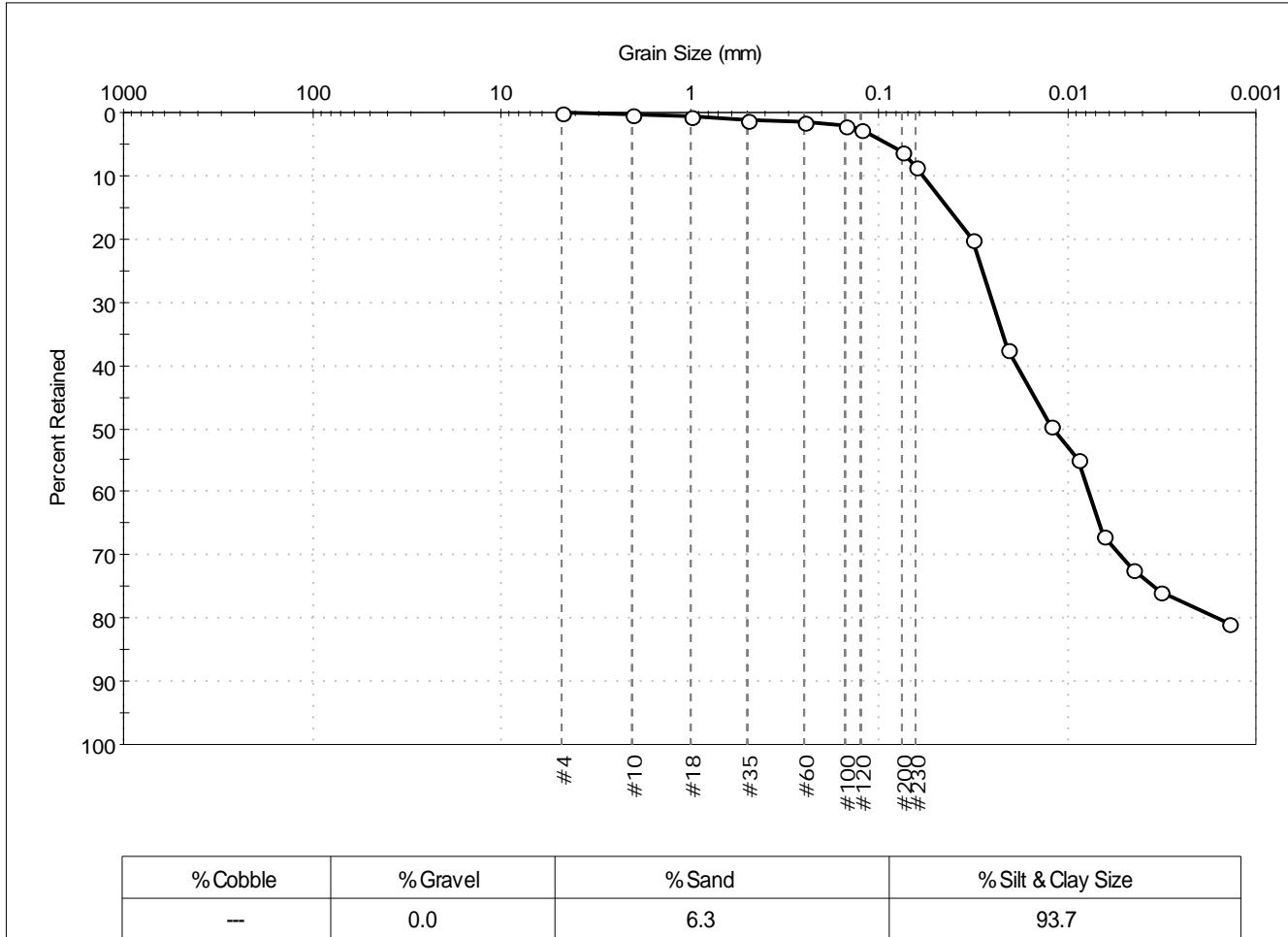
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                      |                             |                           |                        |
|--------------------------------------|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute  | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 317-14LTM                 | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0133                | Test Date: 11/12/14         | Checked By: jdt           |                        |
| Depth: ---                           | Test Id: 310124             |                           |                        |
| Test Comment: ---                    |                             |                           |                        |
| Sample Description: Moist, gary silt |                             |                           |                        |
| Sample Comment: ---                  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 20           |               |          |
| ---        | 0.0209             | 37           |               |          |
| ---        | 0.0124             | 50           |               |          |
| ---        | 0.0088             | 55           |               |          |
| ---        | 0.0064             | 67           |               |          |
| ---        | 0.0045             | 72           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0014             | 81           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0432 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0187 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0121 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

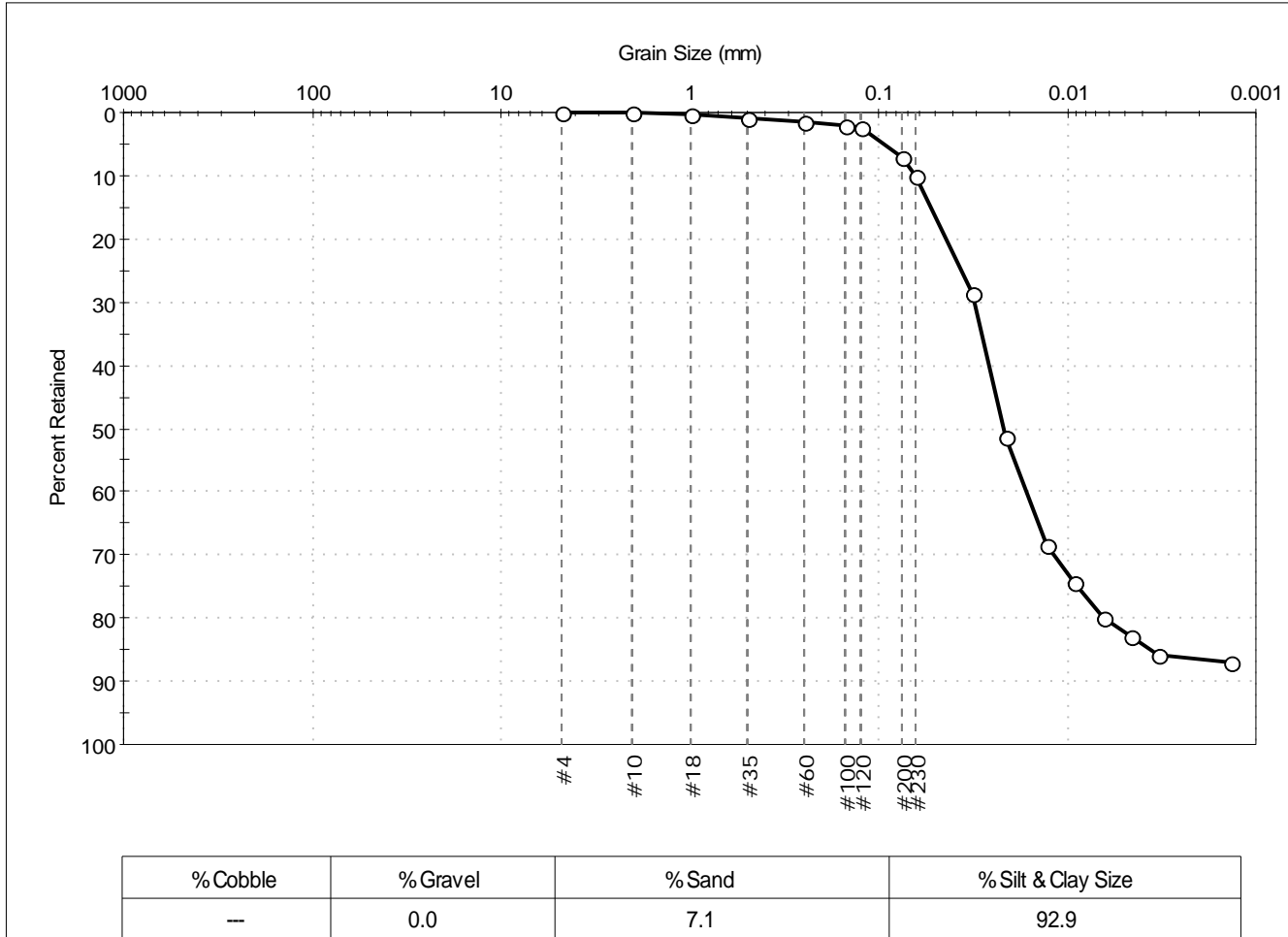
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 317-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0134                  | Test Date:   | 11/13/14   |
| Depth:              | ---                         | Test Id:     | 310125     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, dark gray silt       |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 7            |               |          |
| #230       | 0.063              | 10           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 29           |               |          |
| ---        | 0.0212             | 51           |               |          |
| ---        | 0.0127             | 69           |               |          |
| ---        | 0.0091             | 74           |               |          |
| ---        | 0.0065             | 80           |               |          |
| ---        | 0.0046             | 83           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0526 mm | D <sub>30</sub> = 0.0117 mm |
| D <sub>60</sub> = 0.0259 mm | D <sub>15</sub> = 0.0036 mm |
| D <sub>50</sub> = 0.0217 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

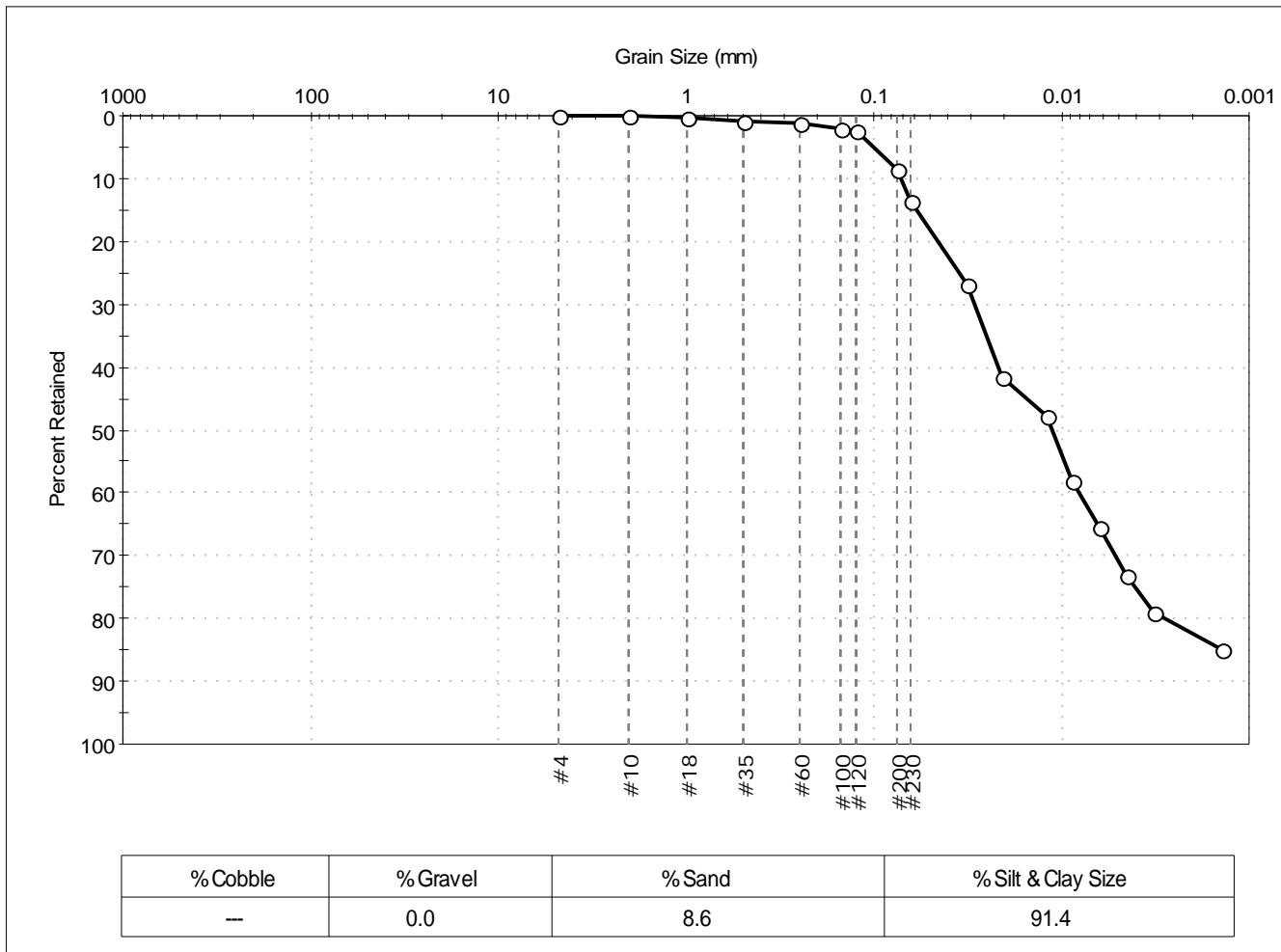
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 317-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0135                  | Test Date:   | 11/13/14   |
| Depth:              | ---                         | Test Id:     | 310126     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, dark olive gray silt |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 14           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 27           |               |          |
| ---        | 0.0207             | 42           |               |          |
| ---        | 0.0121             | 48           |               |          |
| ---        | 0.0087             | 58           |               |          |
| ---        | 0.0063             | 66           |               |          |
| ---        | 0.0045             | 73           |               |          |
| ---        | 0.0032             | 79           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0589 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0217 mm | D <sub>15</sub> = 0.0014 mm |
| D <sub>50</sub> = 0.0113 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

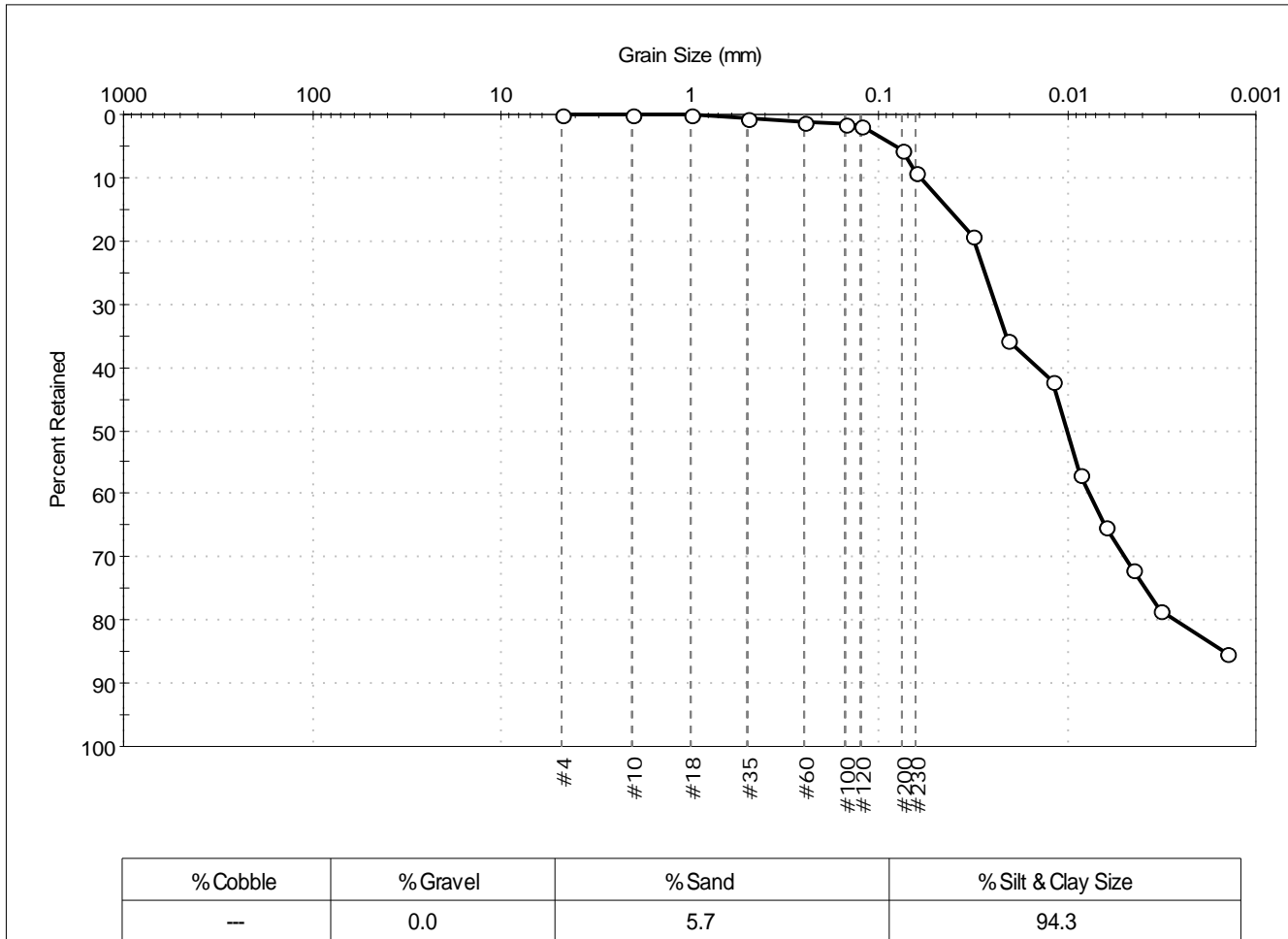
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 317-14LTM                            | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0136                           | Test Date: 11/13/14         | Test Id: 310127           |                        |
| Depth: ---                                      |                             |                           |                        |
| Test Comment: ---                               |                             |                           |                        |
| Sample Description: Moist, dark olive gray silt |                             |                           |                        |
| Sample Comment: ---                             |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0317             | 19           |               |          |
| ---        | 0.0207             | 36           |               |          |
| ---        | 0.0121             | 42           |               |          |
| ---        | 0.0087             | 57           |               |          |
| ---        | 0.0063             | 65           |               |          |
| ---        | 0.0045             | 72           |               |          |
| ---        | 0.0032             | 79           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0419 mm | D <sub>30</sub> = 0.0050 mm |
| D <sub>60</sub> = 0.0145 mm | D <sub>15</sub> = 0.0014 mm |
| D <sub>50</sub> = 0.0102 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

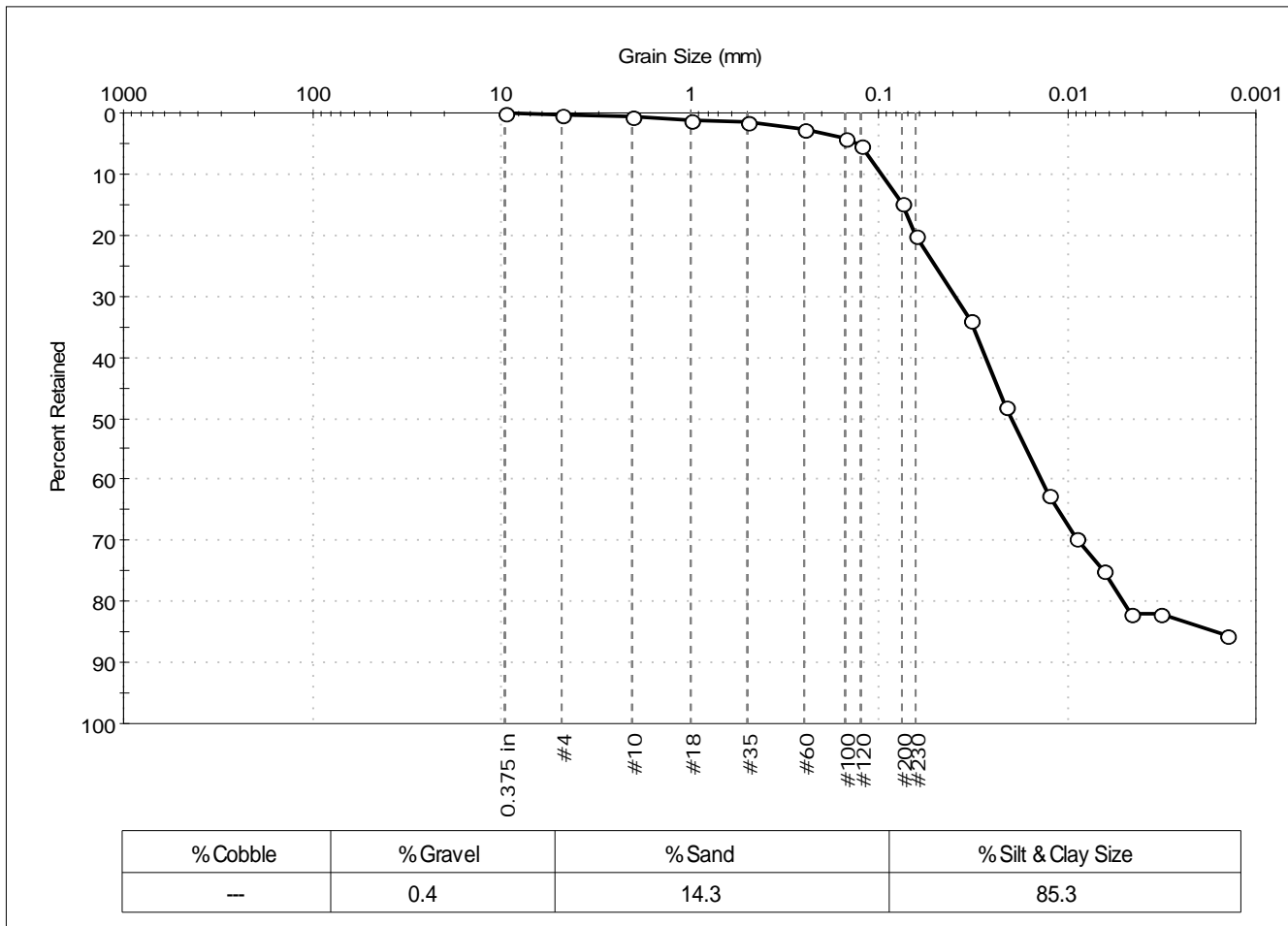
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 309-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0137                  | Test Date:   | 11/08/14   |
| Depth:              | ---                         | Test Id:     | 310128     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, very dark gray silt  |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 15           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 34           |               |          |
| ---        | 0.0214             | 48           |               |          |
| ---        | 0.0126             | 62           |               |          |
| ---        | 0.0090             | 70           |               |          |
| ---        | 0.0065             | 75           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0742 mm | D <sub>30</sub> = 0.0088 mm |
| D <sub>60</sub> = 0.0273 mm | D <sub>15</sub> = 0.0017 mm |
| D <sub>50</sub> = 0.0199 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

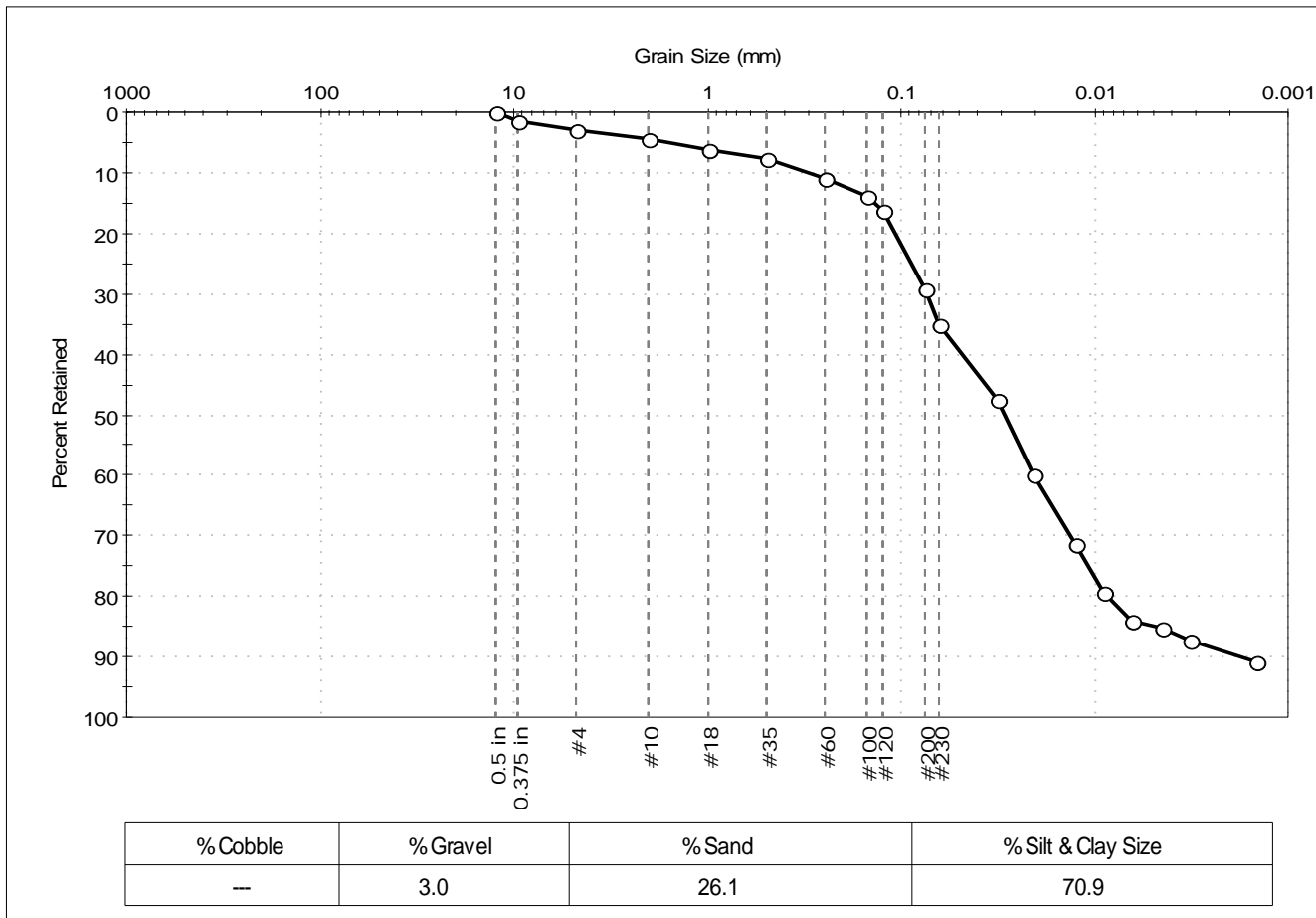
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                      |              |            |
|---------------------|--------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute          |              |            |
| Project:            | New Bedford Harbor                   |              |            |
| Location:           | New Bedford, MA                      | Project No:  | GTX-302366 |
| Boring ID:          | 309-14LTM                            | Sample Type: | bag        |
| Sample ID:          | NBH14-0138                           | Test Date:   | 11/08/14   |
| Depth:              | ---                                  | Test Id:     | 310129     |
| Test Comment:       | ---                                  |              |            |
| Sample Description: | Moist, very dark gray silt with sand |              |            |
| Sample Comment:     | ---                                  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 14           |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 35           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 47           |               |          |
| ---        | 0.0209             | 60           |               |          |
| ---        | 0.0125             | 71           |               |          |
| ---        | 0.0090             | 79           |               |          |
| ---        | 0.0064             | 84           |               |          |
| ---        | 0.0045             | 85           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0015             | 91           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1380 mm | D <sub>30</sub> = 0.0133 mm |
| D <sub>60</sub> = 0.0480 mm | D <sub>15</sub> = 0.0047 mm |
| D <sub>50</sub> = 0.0293 mm | D <sub>10</sub> = 0.0018 mm |
| C <sub>u</sub> = 26.667     | C <sub>c</sub> = 2.047      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

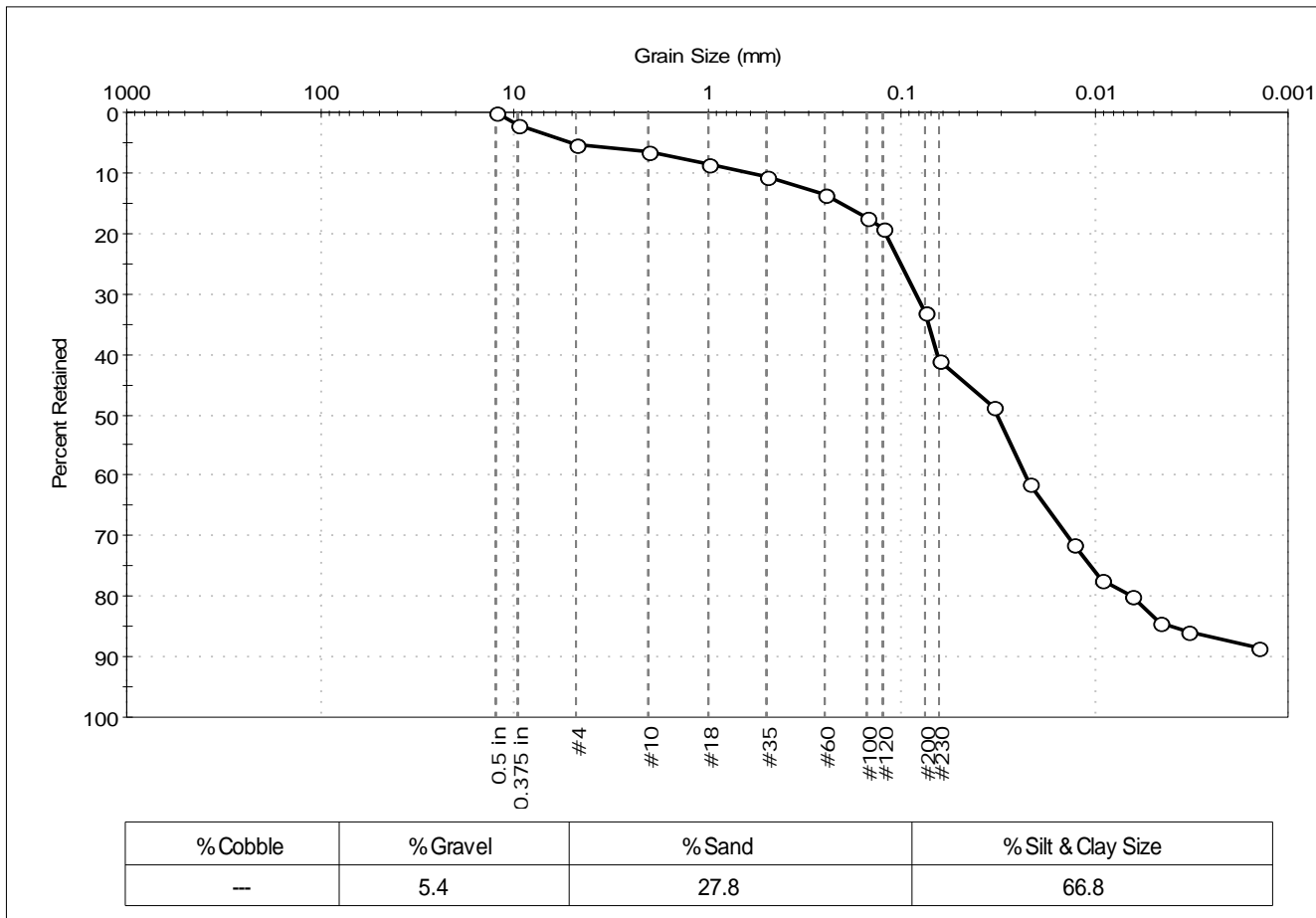
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                                | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 309-14LTM                | Sample Type: bag   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0139               | Test Date: 11/13/14  | Depth: ---                | Test Id: 310130        |
| Test Comment: ---                   | Sample Description: Moist, very dark olive gray sandy silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 19           |               |          |
| #200       | 0.075              | 33           |               |          |
| #230       | 0.063              | 41           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 49           |               |          |
| ---        | 0.0216             | 61           |               |          |
| ---        | 0.0127             | 71           |               |          |
| ---        | 0.0091             | 77           |               |          |
| ---        | 0.0065             | 80           |               |          |
| ---        | 0.0046             | 84           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2077 mm | D <sub>30</sub> = 0.0137 mm |
| D <sub>60</sub> = 0.0646 mm | D <sub>15</sub> = 0.0039 mm |
| D <sub>50</sub> = 0.0317 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

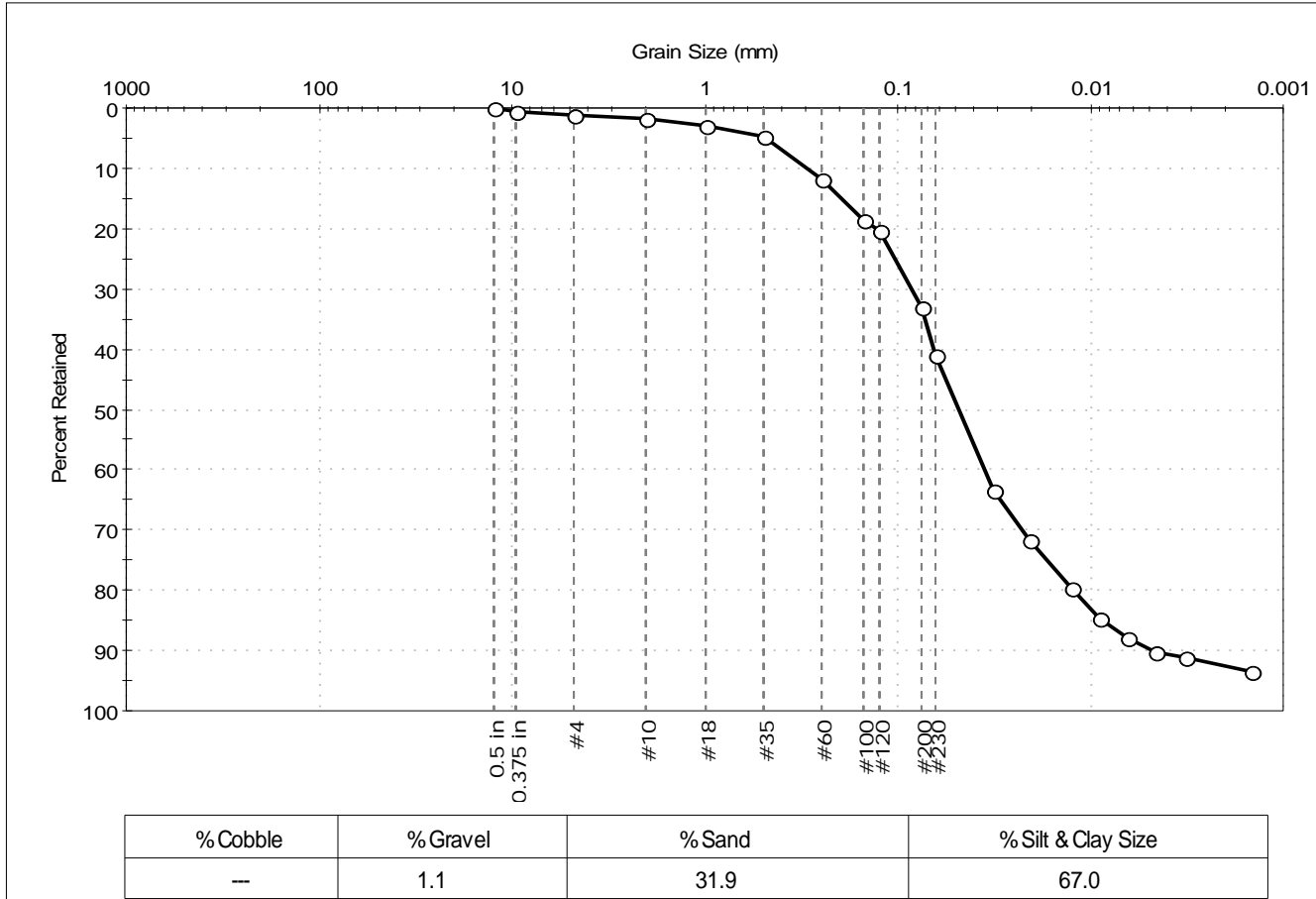
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                | Project No: GTX-302366 |
| Boring ID: 309-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0140               | Test Date: 11/08/14         | Test Id: 310131  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark grayish brown sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 19           |               |          |
| #120       | 0.12               | 20           |               |          |
| #200       | 0.075              | 33           |               |          |
| #230       | 0.063              | 41           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 64           |               |          |
| ---        | 0.0209             | 72           |               |          |
| ---        | 0.0125             | 80           |               |          |
| ---        | 0.0090             | 85           |               |          |
| ---        | 0.0064             | 88           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0015             | 94           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1955 mm | D <sub>30</sub> = 0.0228 mm |
| D <sub>60</sub> = 0.0644 mm | D <sub>15</sub> = 0.0086 mm |
| D <sub>50</sub> = 0.0481 mm | D <sub>10</sub> = 0.0048 mm |
| C <sub>u</sub> = 13.417     | C <sub>c</sub> = 1.682      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

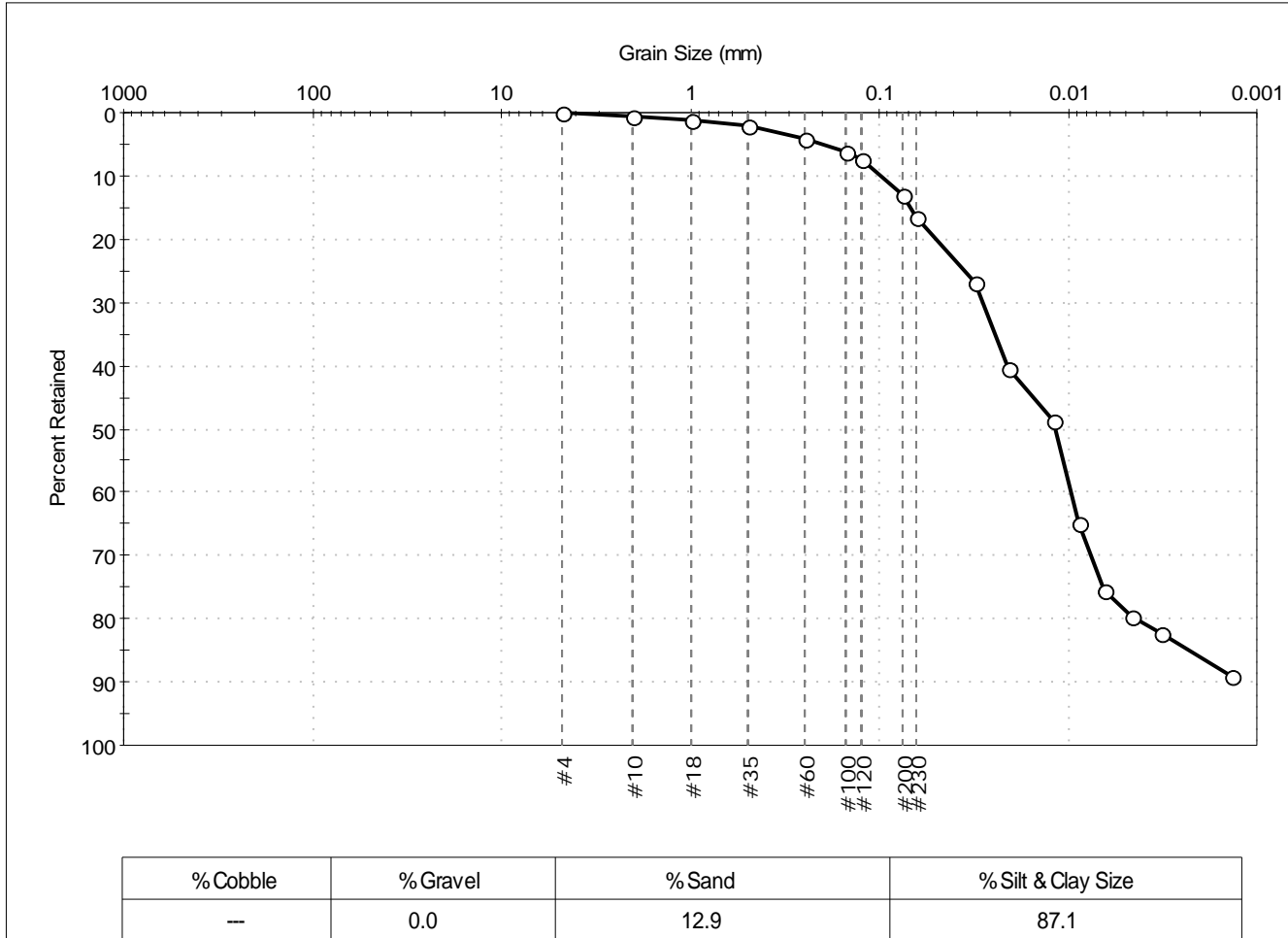
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                                    | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 310-14LTM                | Sample Type: bag   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0141               | Test Date: 11/12/14  | Depth: ---                | Test Id: 310132        |
| Test Comment: ---                   | Sample Description: Moist, very dark olive gray silt with sand |                           |                        |
| Sample Comment: ---                 |  |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 13           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0311             | 27           |               |          |
| ---        | 0.0205             | 40           |               |          |
| ---        | 0.0121             | 49           |               |          |
| ---        | 0.0089             | 65           |               |          |
| ---        | 0.0064             | 76           |               |          |
| ---        | 0.0046             | 80           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0014             | 89           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0679 mm | D <sub>30</sub> = 0.0076 mm |
| D <sub>60</sub> = 0.0208 mm | D <sub>15</sub> = 0.0023 mm |
| D <sub>50</sub> = 0.0118 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

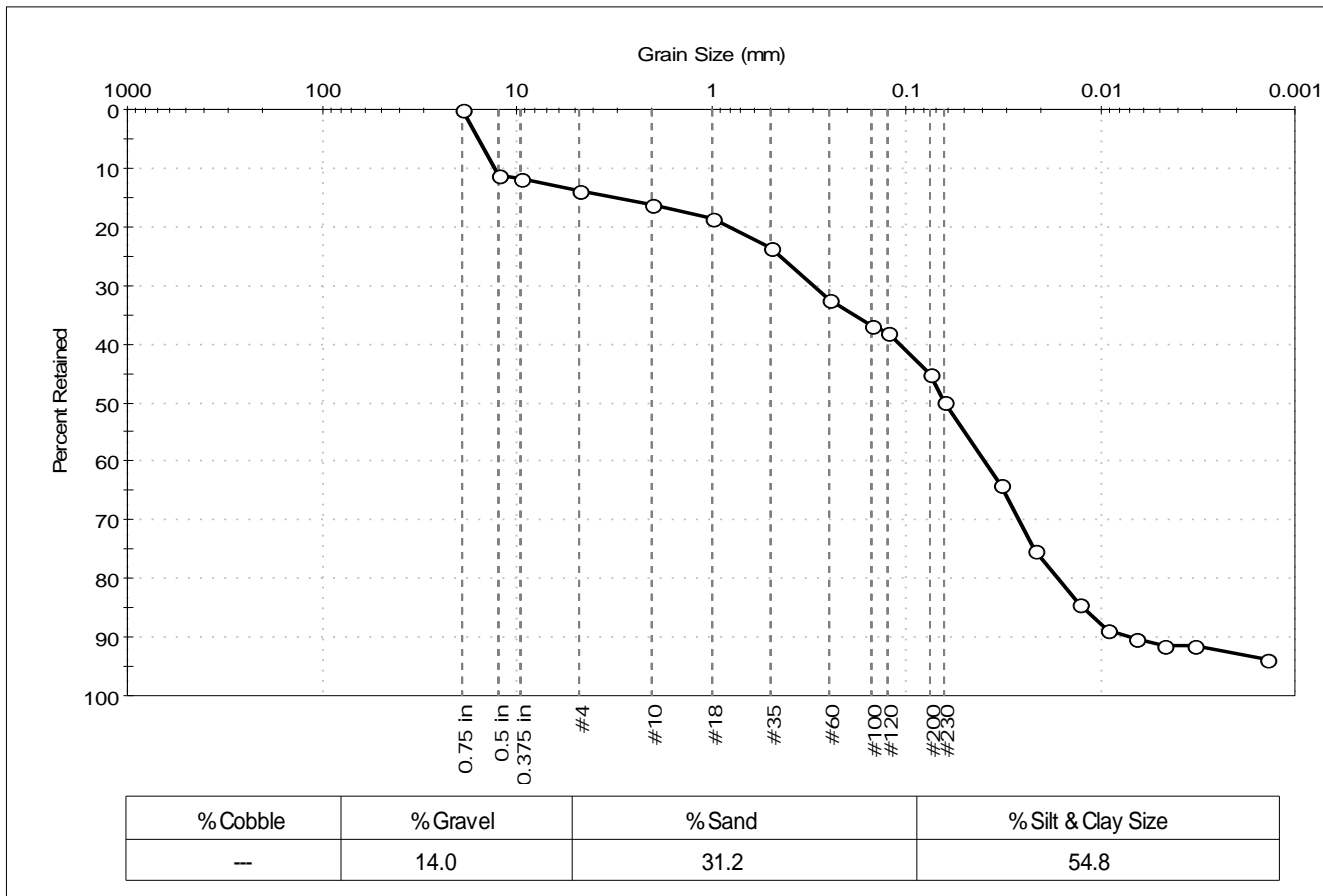
| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                         | Project No: GTX-302366 |
| Boring ID: 310-14LTM                | Sample Type: bag            | Tested By: jbr                                    | Checked By: jdt        |
| Sample ID: NBH14-0142               | Test Date: 11/18/14         | Test Id: 310133                                   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, greenish gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 11           |               |          |
| 0.375 in   | 9.50               | 12           |               |          |
| #4         | 4.75               | 14           |               |          |
| #10        | 2.00               | 16           |               |          |
| #18        | 1.00               | 19           |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 32           |               |          |
| #100       | 0.15               | 37           |               |          |
| #120       | 0.12               | 38           |               |          |
| #200       | 0.075              | 45           |               |          |
| #230       | 0.063              | 50           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 64           |               |          |
| ---        | 0.0217             | 75           |               |          |
| ---        | 0.0129             | 84           |               |          |
| ---        | 0.0093             | 89           |               |          |
| ---        | 0.0066             | 90           |               |          |
| ---        | 0.0047             | 92           |               |          |
| ---        | 0.0033             | 92           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.1807 mm | D <sub>30</sub> = 0.0263 mm |
| D <sub>60</sub> = 0.1095 mm | D <sub>15</sub> = 0.0124 mm |
| D <sub>50</sub> = 0.0628 mm | D <sub>10</sub> = 0.0072 mm |
| C <sub>u</sub> = 15.208     | C <sub>c</sub> = 0.877      |

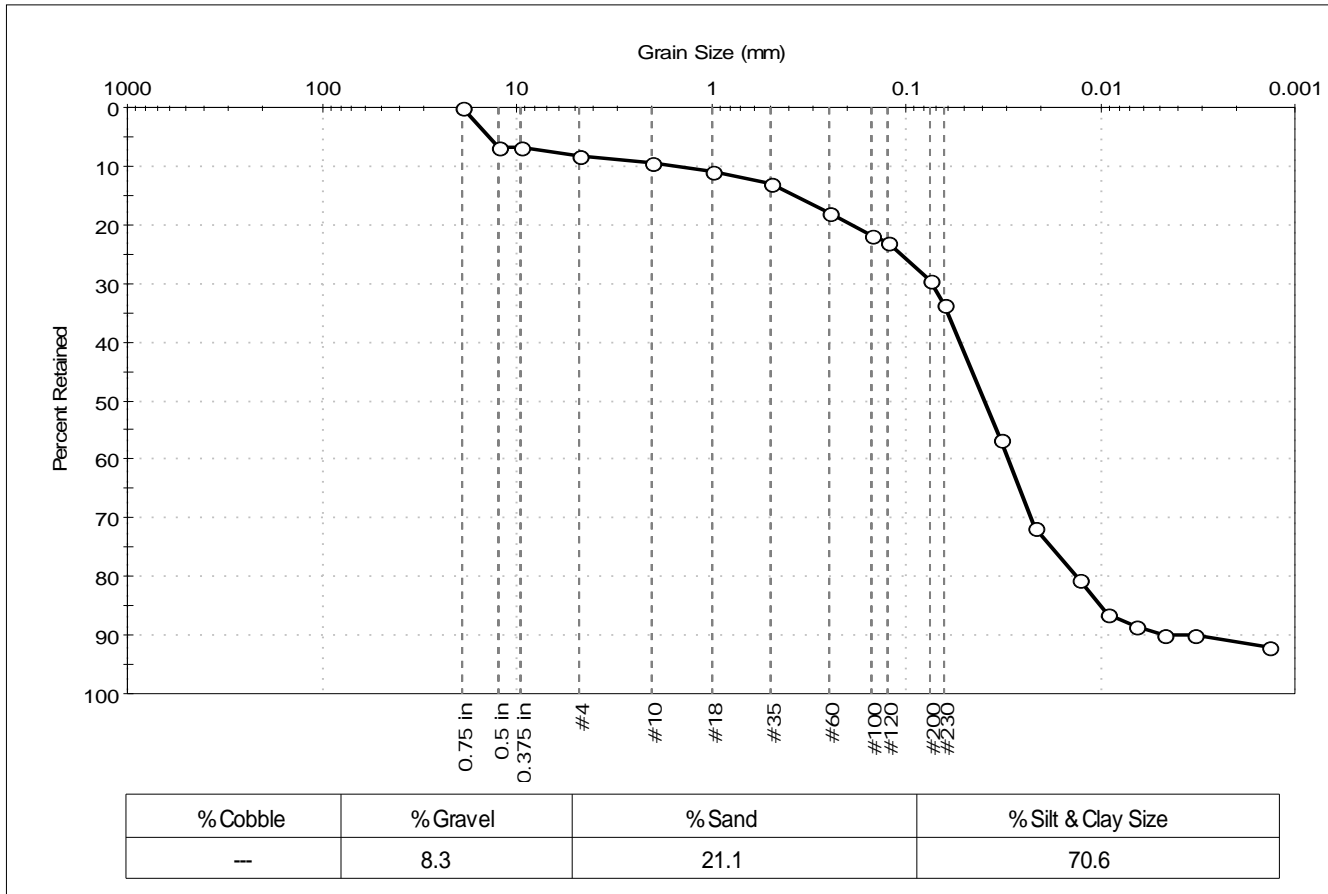
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 310-14LTM                               | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0143                              | Test Date: 11/18/14         | Test Id: 310134           |                        |
| Depth: ---   |                             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet olive brown silt with sand |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 7            |               |          |
| 0.375 in   | 9.50               | 7            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 22           |               |          |
| #120       | 0.12               | 23           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 34           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 57           |               |          |
| ---        | 0.0217             | 72           |               |          |
| ---        | 0.0129             | 81           |               |          |
| ---        | 0.0093             | 87           |               |          |
| ---        | 0.0066             | 89           |               |          |
| ---        | 0.0047             | 90           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3804 mm | D <sub>30</sub> = 0.0228 mm |
| D <sub>60</sub> = 0.0527 mm | D <sub>15</sub> = 0.0101 mm |
| D <sub>50</sub> = 0.0396 mm | D <sub>10</sub> = 0.0032 mm |
| C <sub>u</sub> = 16.469     | C <sub>c</sub> = 3.083      |

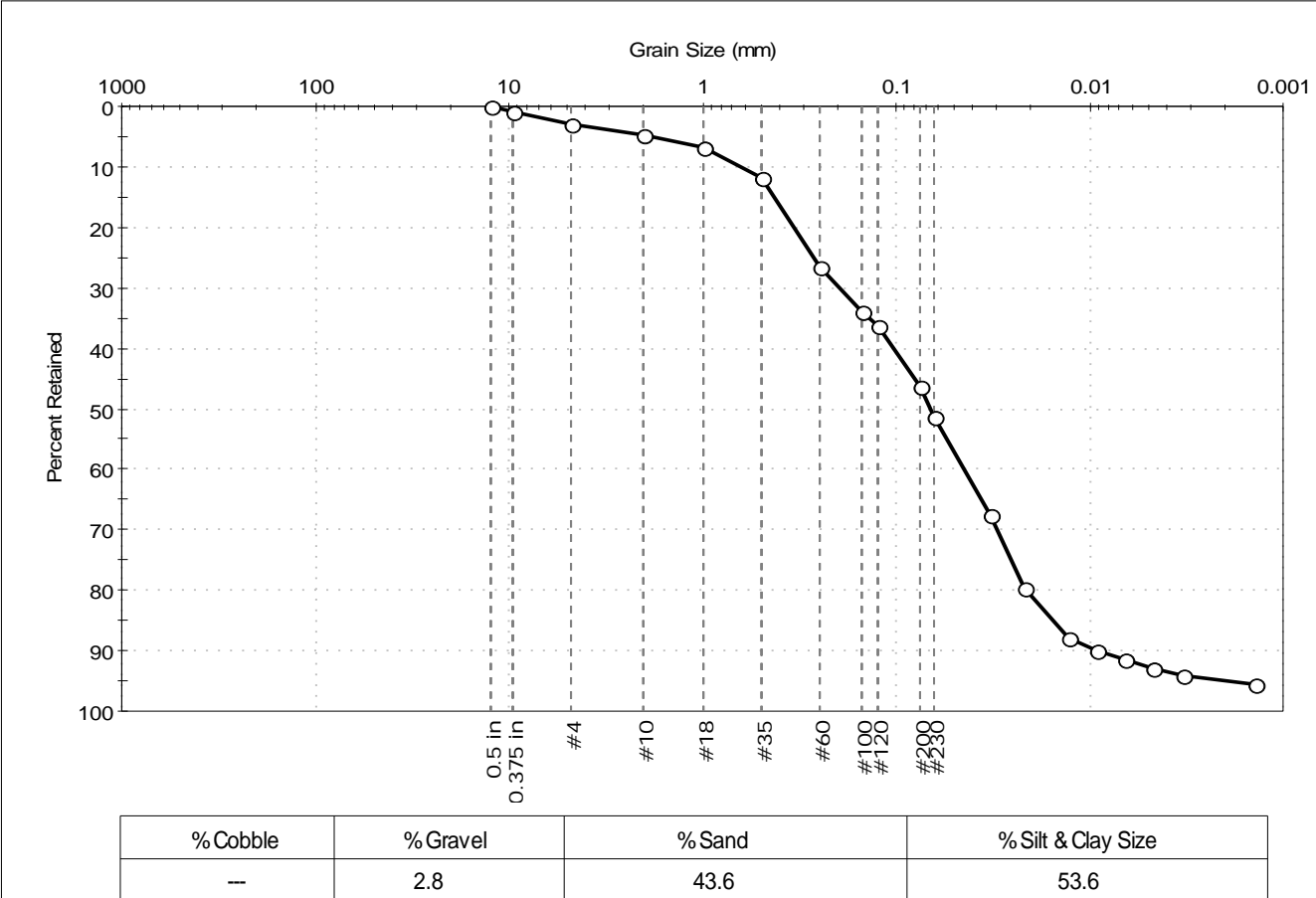
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ANGULAR         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                        | Project No: GTX-302366 |
| Boring ID: 310-14LTM                | Sample Type: bag            | Tested By: jbr                                   | Checked By: jdt        |
| Sample ID: NBH14-0144               | Test Date: 11/18/14         | Test Id: 310135                                  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 34           |               |          |
| #120       | 0.12               | 36           |               |          |
| #200       | 0.075              | 46           |               |          |
| #230       | 0.063              | 51           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 68           |               |          |
| ---        | 0.0217             | 80           |               |          |
| ---        | 0.0130             | 88           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4307 mm | D <sub>30</sub> = 0.0301 mm |
| D <sub>60</sub> = 0.1033 mm | D <sub>15</sub> = 0.0155 mm |
| D <sub>50</sub> = 0.0659 mm | D <sub>10</sub> = 0.0092 mm |
| C <sub>u</sub> = 11.228     | C <sub>c</sub> = 0.953      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

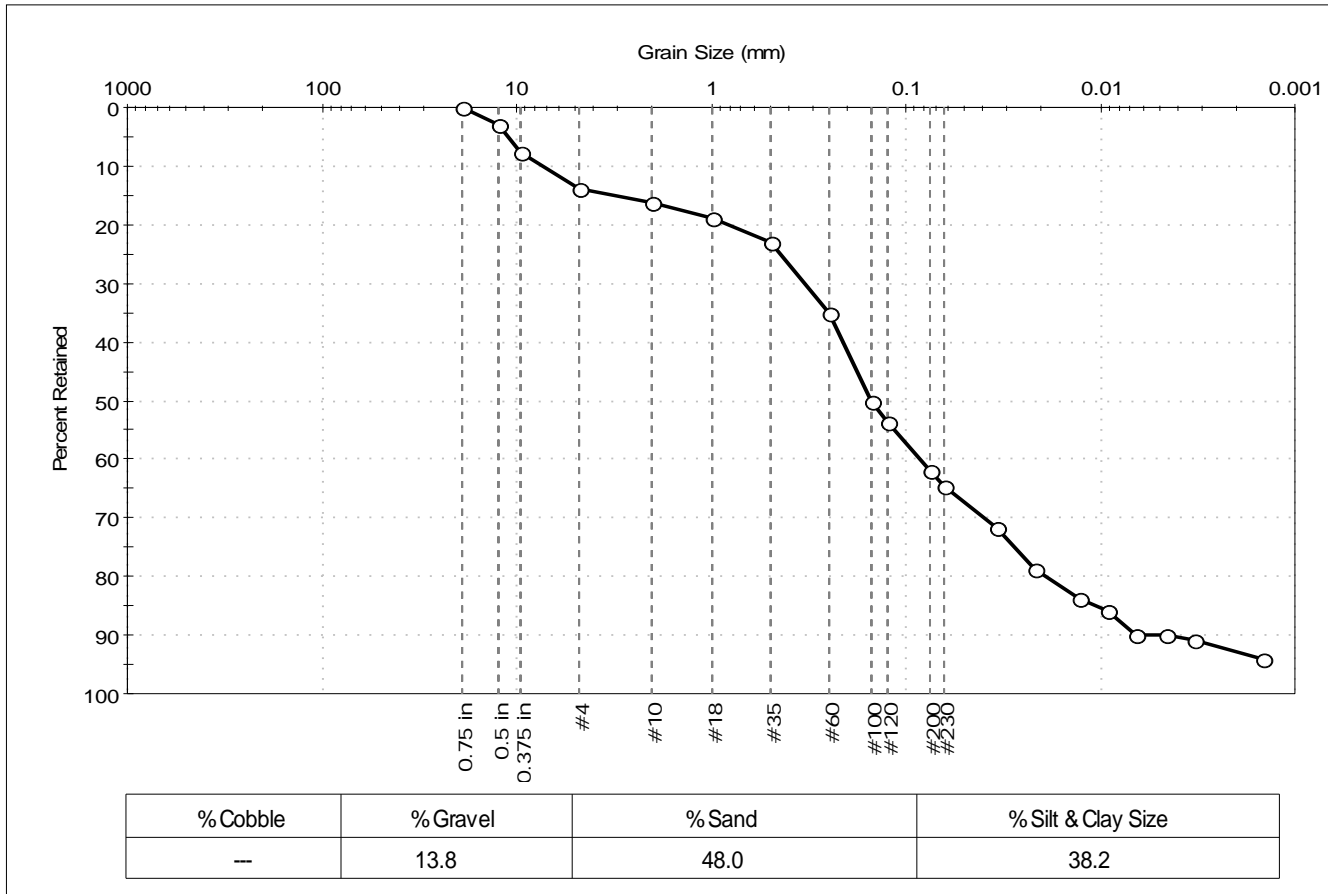
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                                | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 304-14LTM                | Sample Type: bag   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0145               | Test Date: 11/12/14  | Depth: ---                | Test Id: 310136        |
| Test Comment: ---                   | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 3            |               |          |
| 0.375 in   | 9.50               | 8            |               |          |
| #4         | 4.75               | 14           |               |          |
| #10        | 2.00               | 16           |               |          |
| #18        | 1.00               | 19           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 35           |               |          |
| #100       | 0.15               | 50           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 62           |               |          |
| #230       | 0.063              | 65           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0339             | 72           |               |          |
| ---        | 0.0218             | 79           |               |          |
| ---        | 0.0128             | 84           |               |          |
| ---        | 0.0091             | 86           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0015             | 94           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.1358 mm | D <sub>30</sub> = 0.0396 mm |
| D <sub>60</sub> = 0.2122 mm | D <sub>15</sub> = 0.0106 mm |
| D <sub>50</sub> = 0.1508 mm | D <sub>10</sub> = 0.0045 mm |
| C <sub>u</sub> = 47.156     | C <sub>c</sub> = 1.642      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

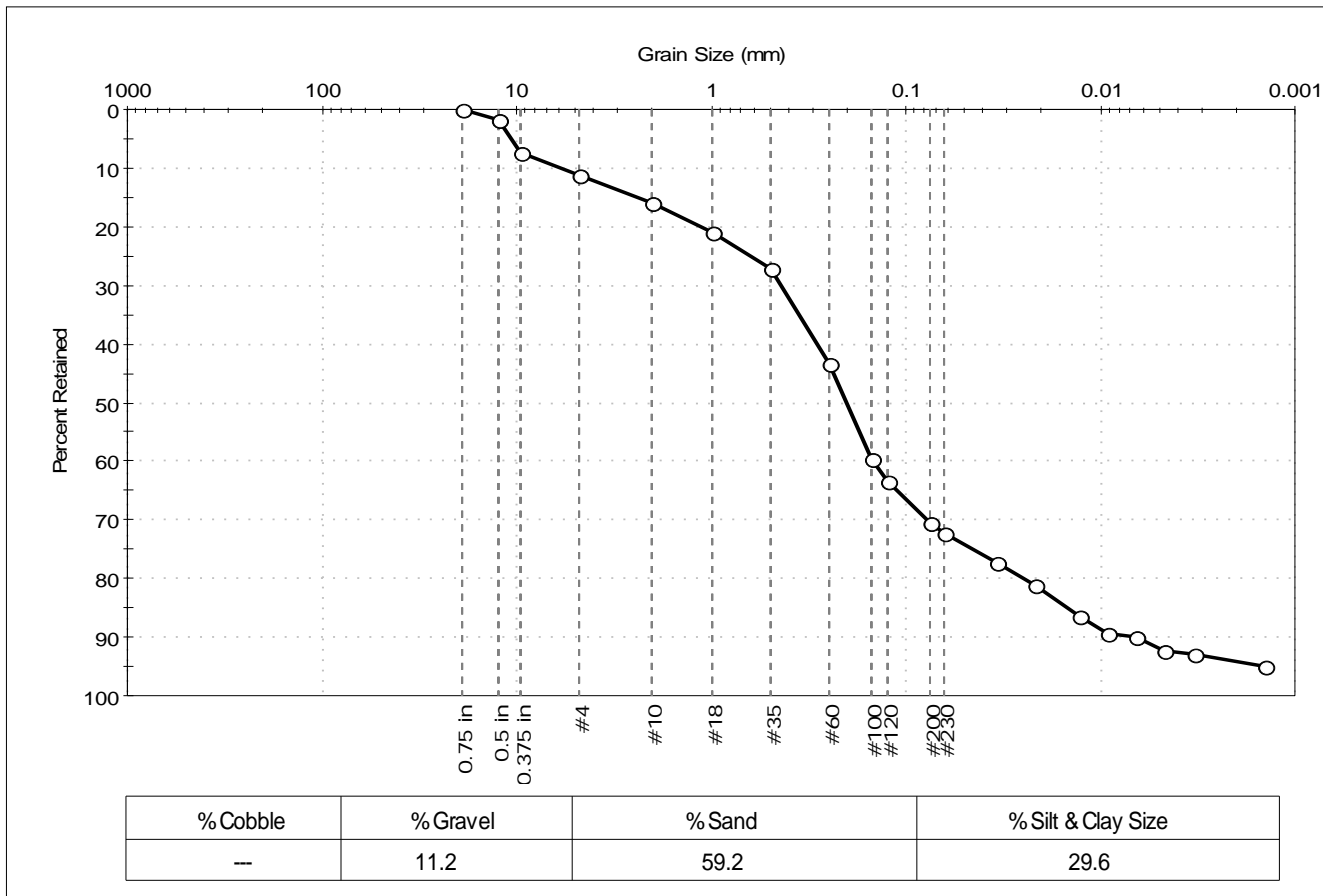
**Sample/Test Description**

Sand/Gravel Particle Shape : ANGULAR  
 Sand/Gravel Hardness : HARD  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                        | Project No: GTX-302366 |
| Boring ID: 304-14LTM                | Sample Type: bag            | Tested By: jbr                                   | Checked By: jdt        |
| Sample ID: NBH14-0146               | Test Date: 11/18/14         | Test Id: 310137                                  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 2            |               |          |
| 0.375 in   | 9.50               | 7            |               |          |
| #4         | 4.75               | 11           |               |          |
| #10        | 2.00               | 16           |               |          |
| #18        | 1.00               | 21           |               |          |
| #35        | 0.50               | 27           |               |          |
| #60        | 0.25               | 43           |               |          |
| #100       | 0.15               | 60           |               |          |
| #120       | 0.12               | 63           |               |          |
| #200       | 0.075              | 70           |               |          |
| #230       | 0.063              | 72           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 77           |               |          |
| ---        | 0.0218             | 81           |               |          |
| ---        | 0.0129             | 86           |               |          |
| ---        | 0.0092             | 89           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0047             | 92           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.3803 mm | D <sub>30</sub> = 0.0771 mm |
| D <sub>60</sub> = 0.2890 mm | D <sub>15</sub> = 0.0147 mm |
| D <sub>50</sub> = 0.2031 mm | D <sub>10</sub> = 0.0067 mm |
| C <sub>u</sub> = 43.134     | C <sub>c</sub> = 3.070      |

| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

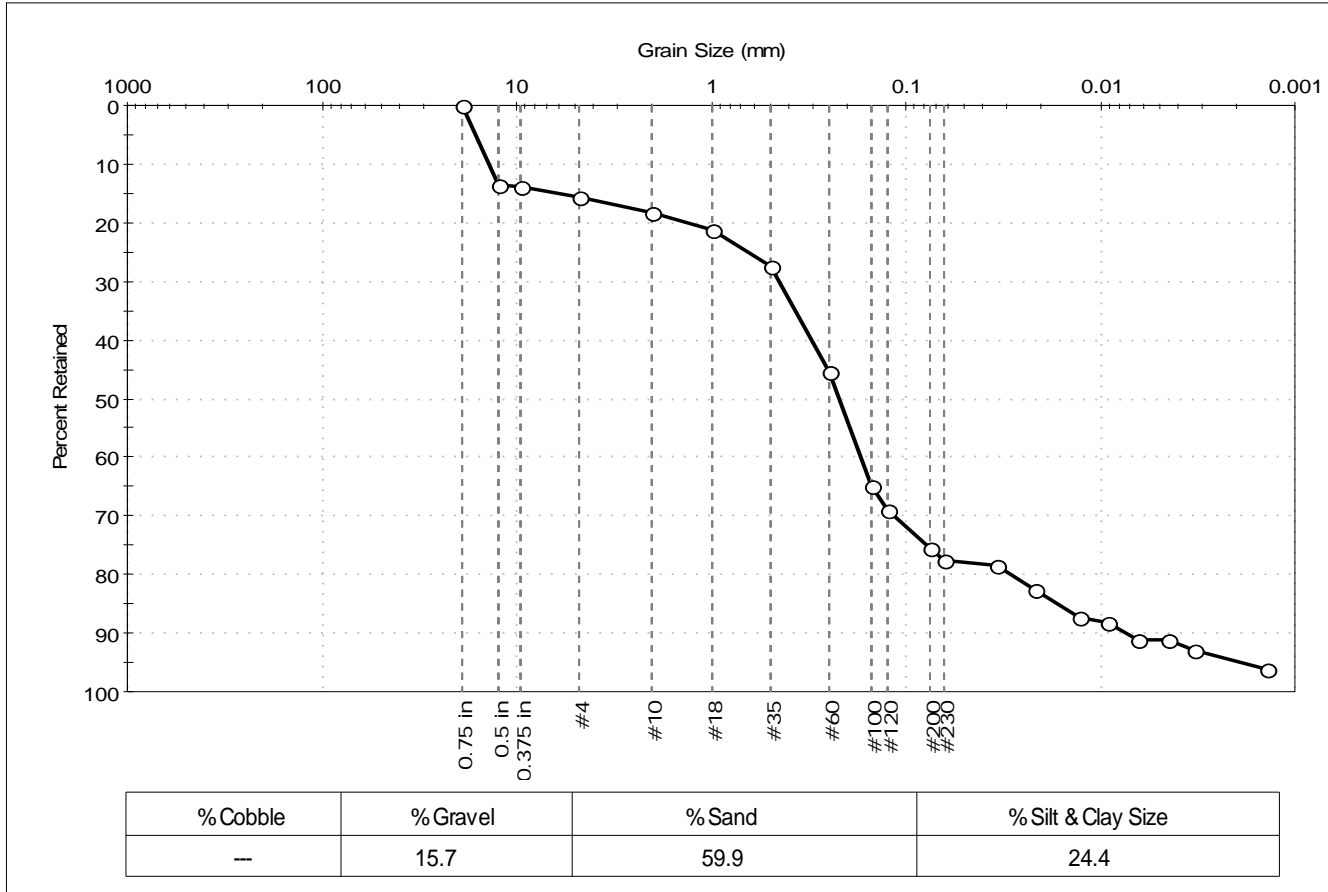
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 304-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0147   | Test Date: 11/14/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310138             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, grayish brown silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 13           |               |          |
| 0.375 in   | 9.50               | 14           |               |          |
| #4         | 4.75               | 16           |               |          |
| #10        | 2.00               | 18           |               |          |
| #18        | 1.00               | 21           |               |          |
| #35        | 0.50               | 28           |               |          |
| #60        | 0.25               | 46           |               |          |
| #100       | 0.15               | 65           |               |          |
| #120       | 0.12               | 69           |               |          |
| #200       | 0.075              | 76           |               |          |
| #230       | 0.063              | 77           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 79           |               |          |
| ---        | 0.0218             | 83           |               |          |
| ---        | 0.0128             | 87           |               |          |
| ---        | 0.0091             | 88           |               |          |
| ---        | 0.0065             | 91           |               |          |
| ---        | 0.0045             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 96           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 6.2094 mm | D <sub>30</sub> = 0.1153 mm |
| D <sub>60</sub> = 0.3092 mm | D <sub>15</sub> = 0.0166 mm |
| D <sub>50</sub> = 0.2223 mm | D <sub>10</sub> = 0.0074 mm |
| C <sub>u</sub> = 41.784     | C <sub>c</sub> = 5.810      |

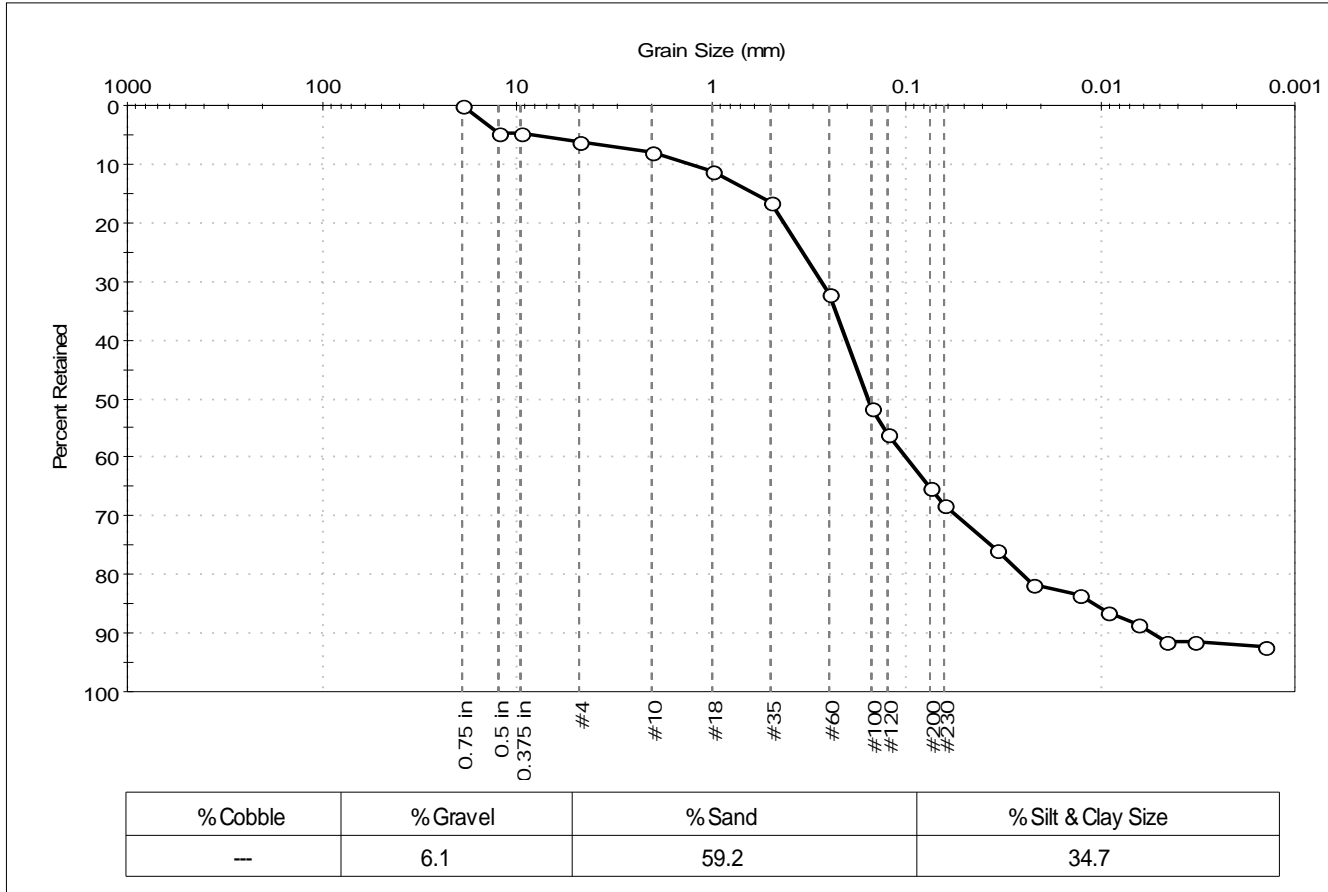
| Classification |  |
|----------------|--|
| ASTM           | N/A  |
| AASHTO         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 304-14LTM                                       | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0148                                      | Test Date: 11/12/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310139             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 5            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 17           |               |          |
| #60        | 0.25               | 32           |               |          |
| #100       | 0.15               | 52           |               |          |
| #120       | 0.12               | 56           |               |          |
| #200       | 0.075              | 65           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0343             | 76           |               |          |
| ---        | 0.0221             | 82           |               |          |
| ---        | 0.0128             | 84           |               |          |
| ---        | 0.0092             | 86           |               |          |
| ---        | 0.0065             | 88           |               |          |
| ---        | 0.0046             | 91           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6133 mm | D <sub>30</sub> = 0.0548 mm |
| D <sub>60</sub> = 0.2037 mm | D <sub>15</sub> = 0.0109 mm |
| D <sub>50</sub> = 0.1565 mm | D <sub>10</sub> = 0.0054 mm |
| C <sub>u</sub> = 37.722     | C <sub>c</sub> = 2.730      |

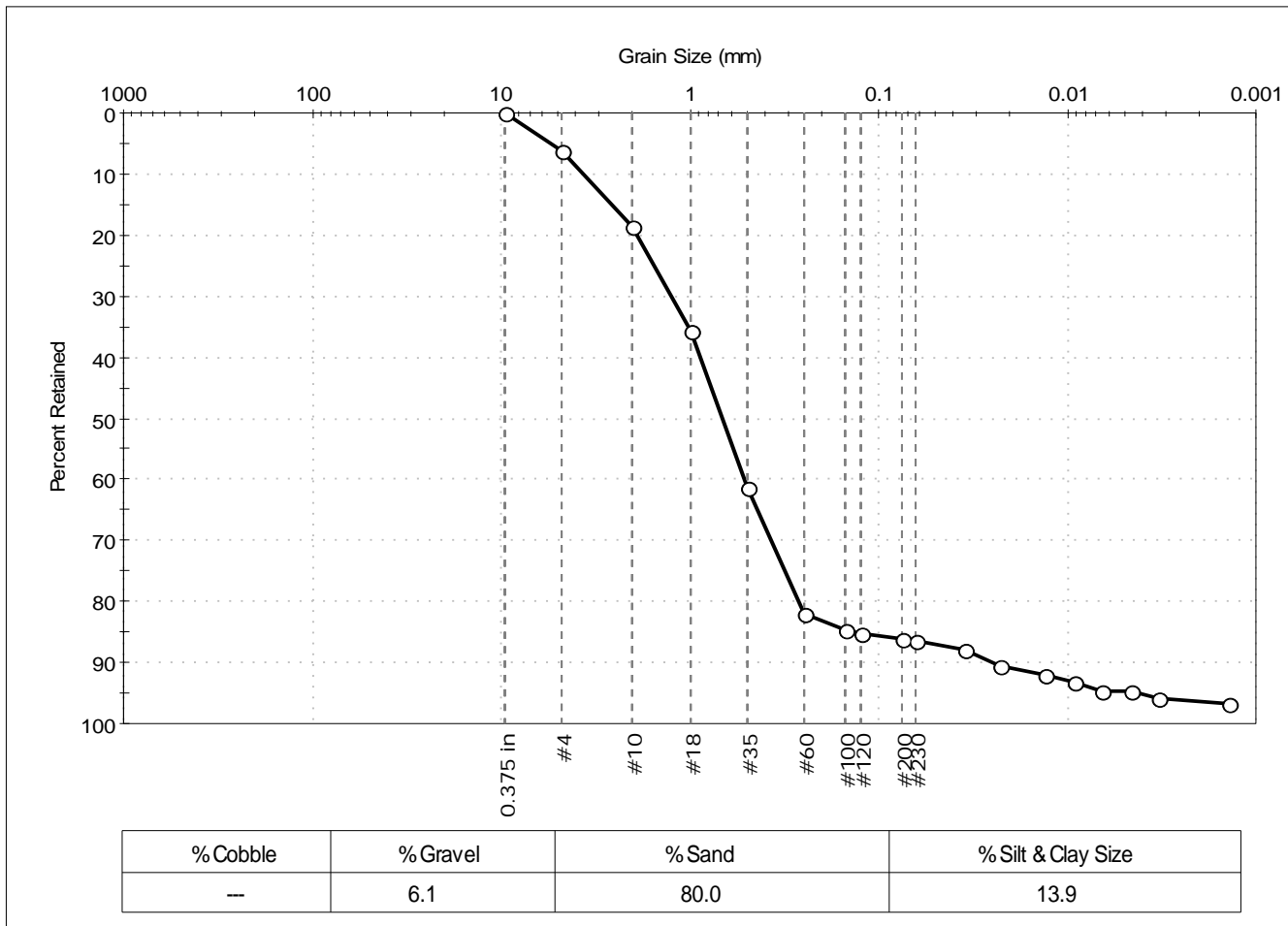
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute         | Project No: GTX-302366 |
| Project: New Bedford Harbor                 |                        |
| Location: New Bedford, MA                   |                        |
| Boring ID: 250-14LTM                        | Sample Type: bag       |
| Sample ID: NBH14-0149                       | Test Date: 11/04/14    |
| Depth: ---                                  | Test Id: 310140        |
| Test Comment: ---                           | Tested By: jbr         |
| Sample Description: Moist, black silty sand | Checked By: jdt        |
| Sample Comment: ---                         |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 19           |               |          |
| #18        | 1.00               | 36           |               |          |
| #35        | 0.50               | 61           |               |          |
| #60        | 0.25               | 82           |               |          |
| #100       | 0.15               | 85           |               |          |
| #120       | 0.12               | 85           |               |          |
| #200       | 0.075              | 86           |               |          |
| #230       | 0.063              | 86           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0352             | 88           |               |          |
| ---        | 0.0225             | 91           |               |          |
| ---        | 0.0131             | 92           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 95           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.5672 mm | D <sub>30</sub> = 0.3736 mm |
| D <sub>60</sub> = 0.8913 mm | D <sub>15</sub> = 0.1314 mm |
| D <sub>50</sub> = 0.6794 mm | D <sub>10</sub> = 0.0254 mm |
| C <sub>u</sub> = 35.091     | C <sub>c</sub> = 6.165      |

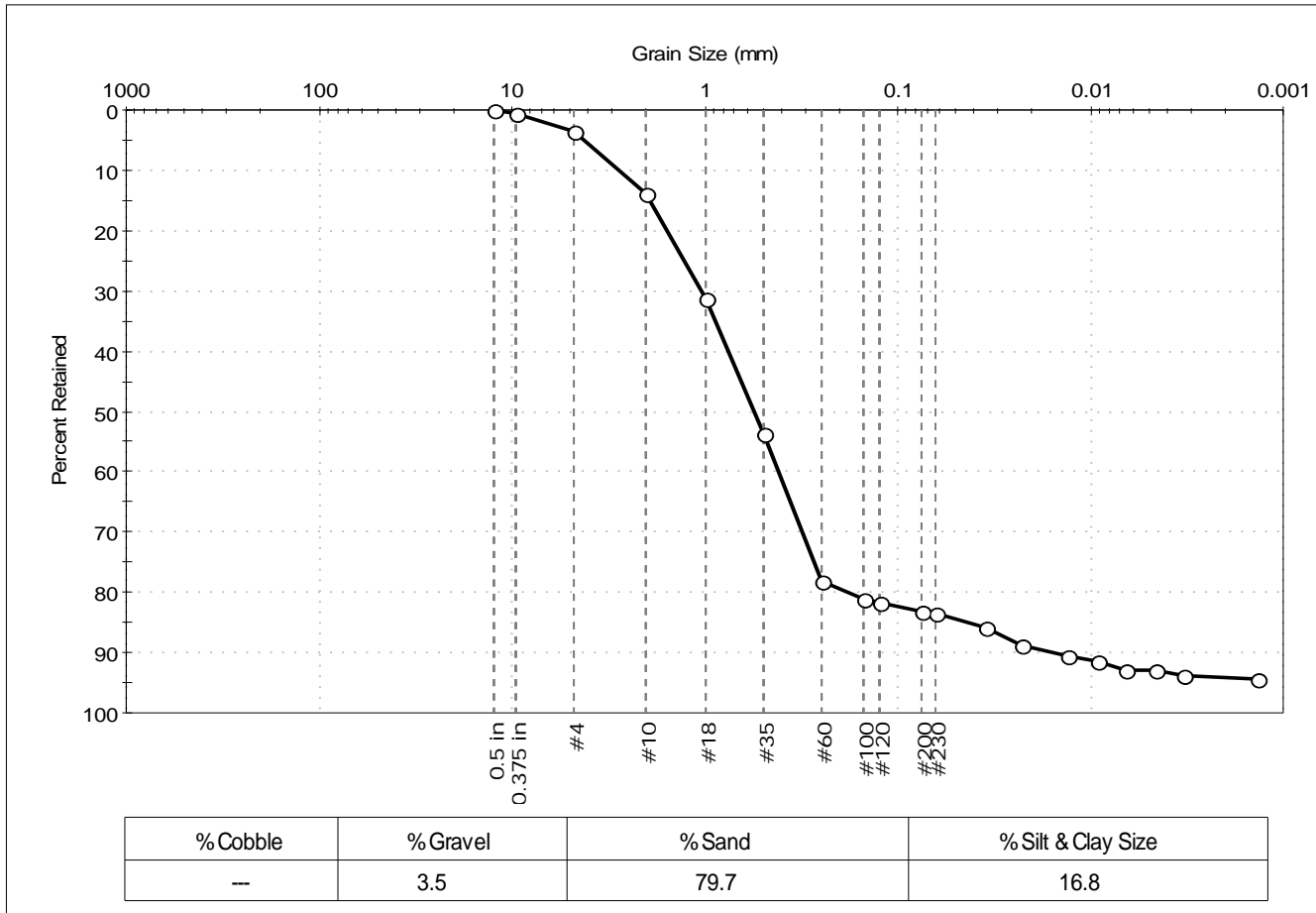
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                       | Project No: GTX-302366 |
| Boring ID: 250-14LTM                | Sample Type: bag            | Tested By: jbr                                  | Checked By: jdt        |
| Sample ID: NBH14-0149DUP            | Test Date: 10/29/14         | Test Id: 310141                                 |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, bluish gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 14           |               |          |
| #18        | 1.00               | 31           |               |          |
| #35        | 0.50               | 54           |               |          |
| #60        | 0.25               | 78           |               |          |
| #100       | 0.15               | 81           |               |          |
| #120       | 0.12               | 82           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0352             | 86           |               |          |
| ---        | 0.0225             | 89           |               |          |
| ---        | 0.0131             | 91           |               |          |
| ---        | 0.0093             | 91           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 94           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.9063 mm | D <sub>30</sub> = 0.3152 mm |
| D <sub>60</sub> = 0.7622 mm | D <sub>15</sub> = 0.0429 mm |
| D <sub>50</sub> = 0.5607 mm | D <sub>10</sub> = 0.0156 mm |
| C <sub>u</sub> = 48.859     | C <sub>c</sub> = 8.356      |

**Classification**

|               |  |
|---------------|--|
| <u>ASTM</u>   | N/A  |
| <u>AASHTO</u> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

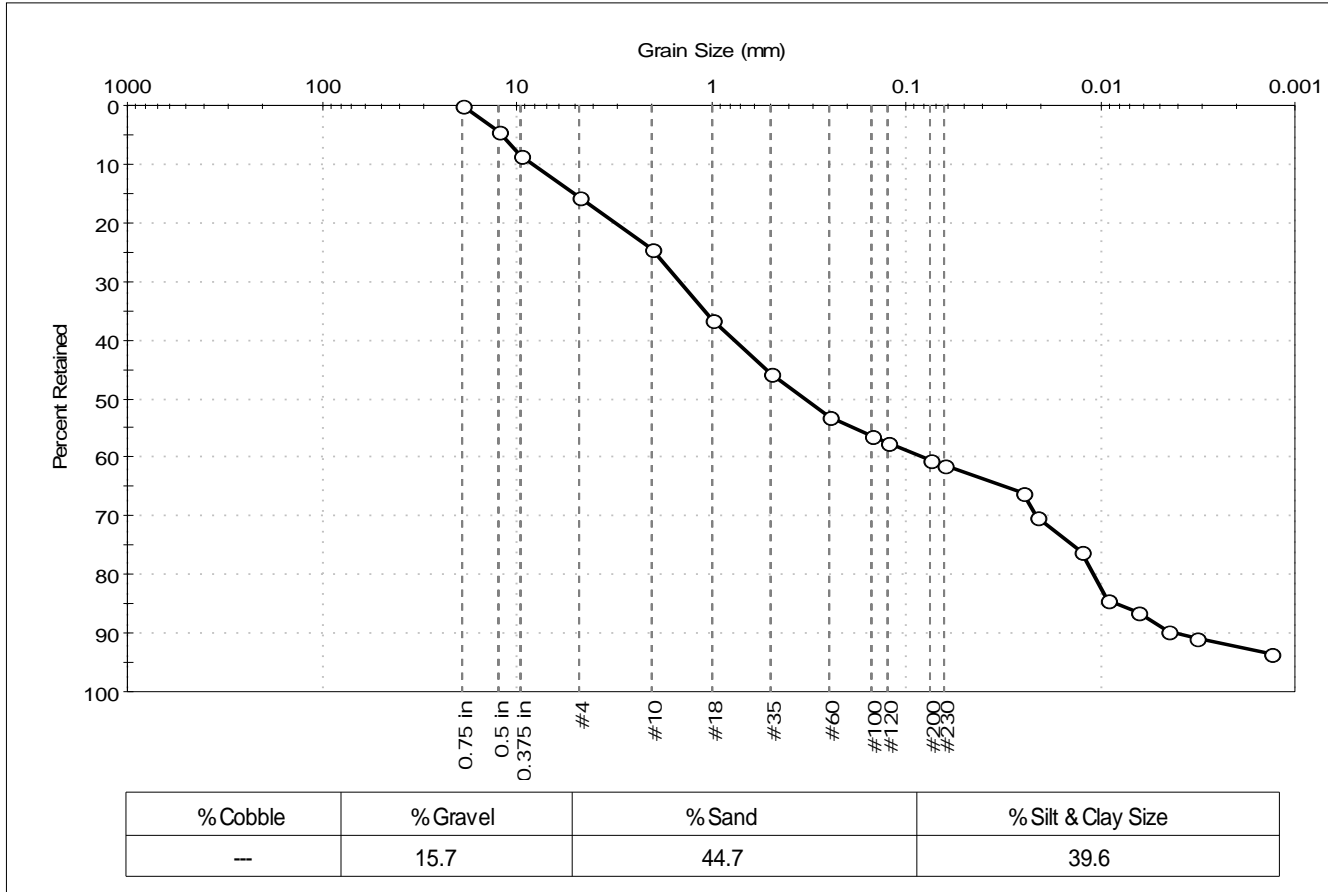
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                              | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 250-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0150  | Test Date: 11/05/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310142             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark gray silty sand with gravel |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 4            |               |          |
| 0.375 in   | 9.50               | 9            |               |          |
| #4         | 4.75               | 16           |               |          |
| #10        | 2.00               | 25           |               |          |
| #18        | 1.00               | 37           |               |          |
| #35        | 0.50               | 46           |               |          |
| #60        | 0.25               | 53           |               |          |
| #100       | 0.15               | 56           |               |          |
| #120       | 0.12               | 57           |               |          |
| #200       | 0.075              | 60           |               |          |
| #230       | 0.063              | 61           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0251             | 66           |               |          |
| ---        | 0.0212             | 70           |               |          |
| ---        | 0.0125             | 76           |               |          |
| ---        | 0.0092             | 84           |               |          |
| ---        | 0.0065             | 86           |               |          |
| ---        | 0.0045             | 90           |               |          |
| ---        | 0.0032             | 91           |               |          |
| ---        | 0.0013             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.0839 mm | D <sub>30</sub> = 0.0213 mm |
| D <sub>60</sub> = 0.7781 mm | D <sub>15</sub> = 0.0082 mm |
| D <sub>50</sub> = 0.3366 mm | D <sub>10</sub> = 0.0042 mm |
| C <sub>u</sub> = 185.262    | C <sub>c</sub> = 0.139      |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

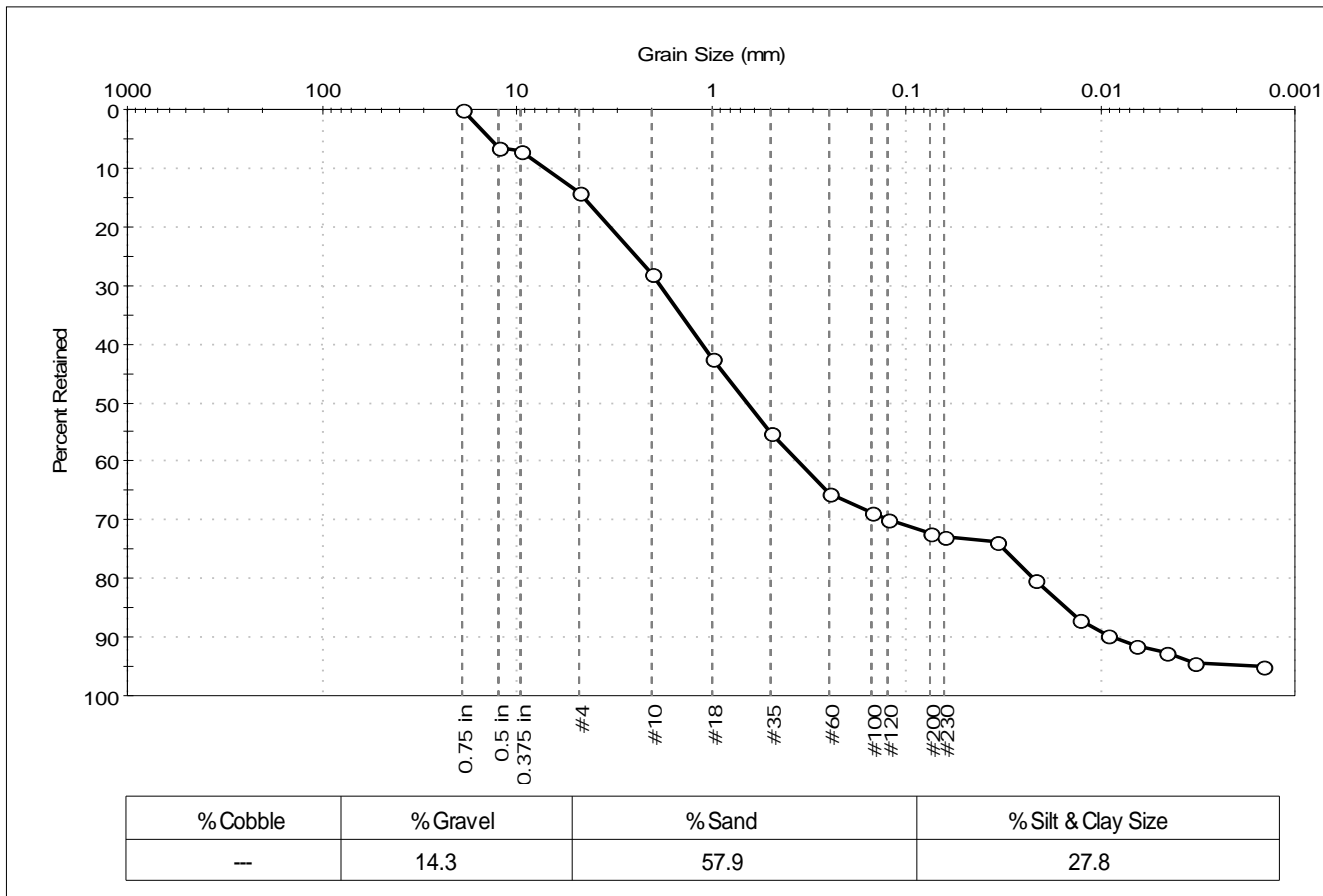
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                           | Project No: GTX-302366 |
| Boring ID: 250-14LTM                | Sample Type: bag            | Tested By: jbr                                      | Checked By: jdt        |
| Sample ID: NBH14-0151               | Test Date: 11/17/14         | Test Id: 310143                                     |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 6            |               |          |
| 0.375 in   | 9.50               | 7            |               |          |
| #4         | 4.75               | 14           |               |          |
| #10        | 2.00               | 28           |               |          |
| #18        | 1.00               | 42           |               |          |
| #35        | 0.50               | 55           |               |          |
| #60        | 0.25               | 65           |               |          |
| #100       | 0.15               | 69           |               |          |
| #120       | 0.12               | 70           |               |          |
| #200       | 0.075              | 72           |               |          |
| #230       | 0.063              | 73           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 74           |               |          |
| ---        | 0.0220             | 80           |               |          |
| ---        | 0.0129             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0015             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 4.5401 mm | D <sub>30</sub> = 0.1193 mm |
| D <sub>60</sub> = 1.1203 mm | D <sub>15</sub> = 0.0151 mm |
| D <sub>50</sub> = 0.6604 mm | D <sub>10</sub> = 0.0087 mm |
| C <sub>u</sub> = 128.770    | C <sub>c</sub> = 1.460      |

**Classification**

|        |                                   |
|--------|-----------------------------------|
| ASTM   | N/A                               |
| AASHTO | Silty Gravel and Sand (A-2-4 (0)) |

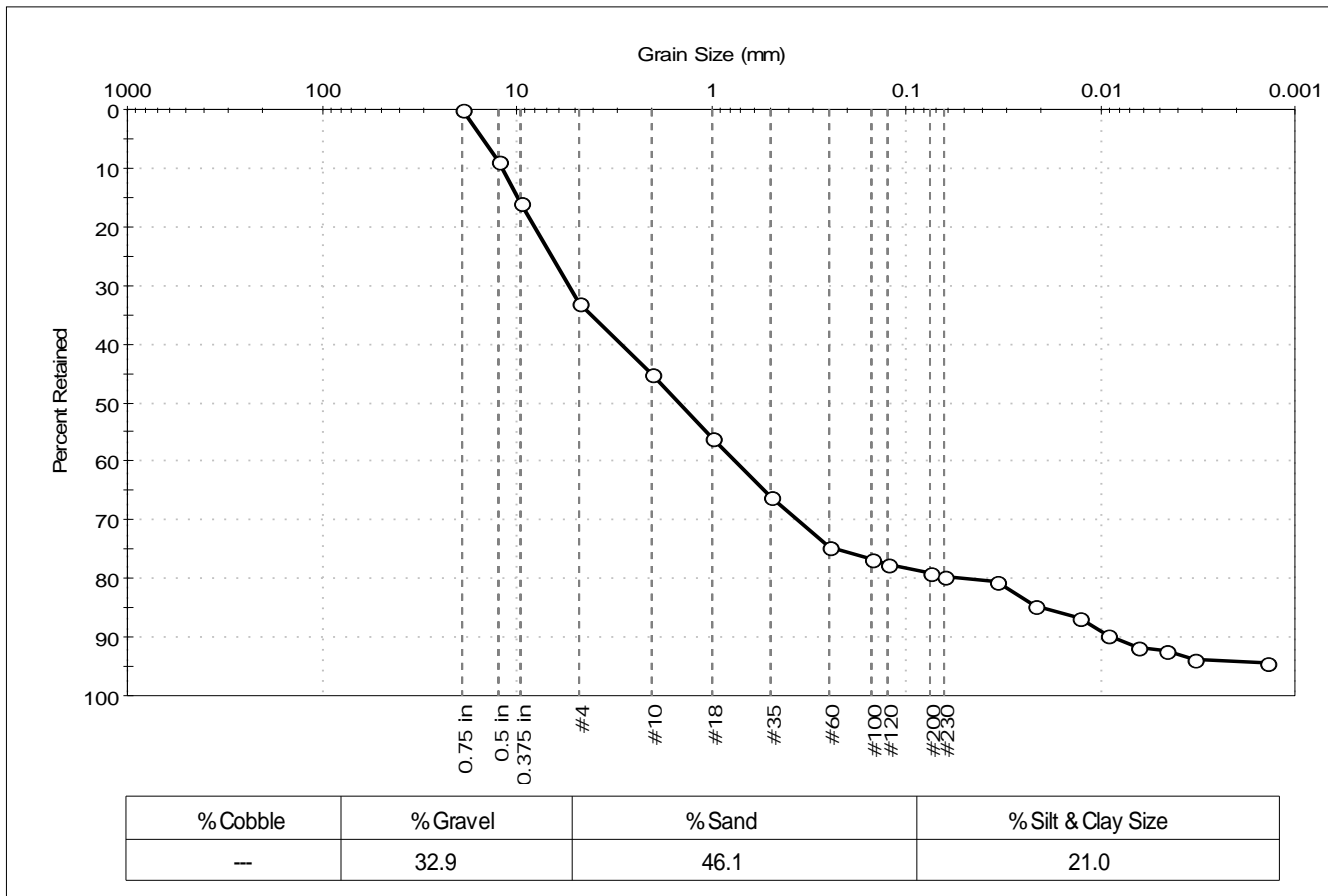
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 250-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0152   | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310144             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Wet, dark olive gray silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 9            |               |          |
| 0.375 in   | 9.50               | 16           |               |          |
| #4         | 4.75               | 33           |               |          |
| #10        | 2.00               | 45           |               |          |
| #18        | 1.00               | 56           |               |          |
| #35        | 0.50               | 66           |               |          |
| #60        | 0.25               | 75           |               |          |
| #100       | 0.15               | 77           |               |          |
| #120       | 0.12               | 77           |               |          |
| #200       | 0.075              | 79           |               |          |
| #230       | 0.063              | 80           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 81           |               |          |
| ---        | 0.0219             | 85           |               |          |
| ---        | 0.0127             | 87           |               |          |
| ---        | 0.0091             | 90           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 9.8769 mm | D <sub>30</sub> = 0.3605 mm |
| D <sub>60</sub> = 2.8784 mm | D <sub>15</sub> = 0.0204 mm |
| D <sub>50</sub> = 1.4699 mm | D <sub>10</sub> = 0.0085 mm |
| C <sub>u</sub> = 338.635    | C <sub>c</sub> = 5.312      |

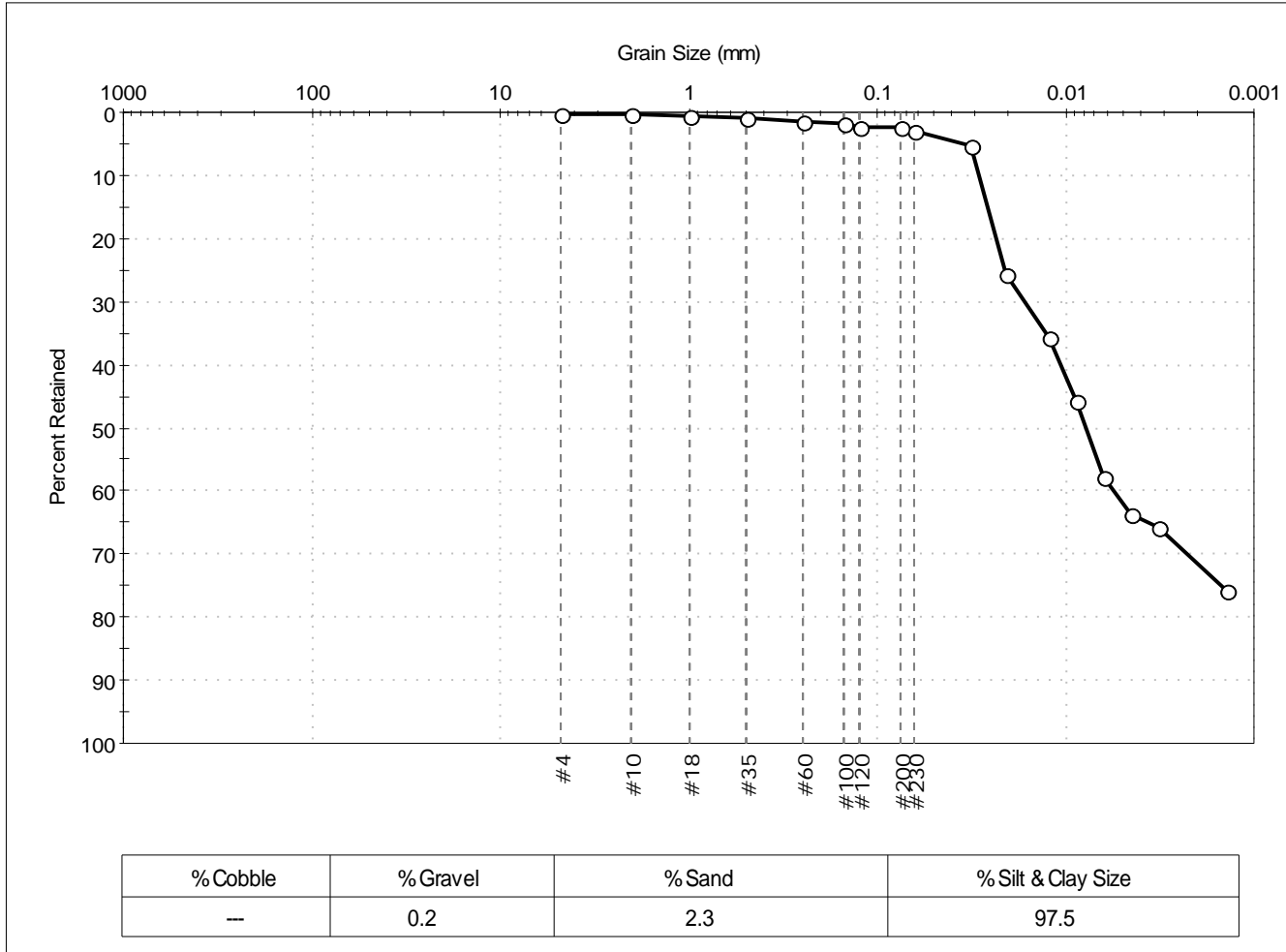
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 105-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0153               | Test Date: 11/17/14         | Test Id: 310145                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 5            |               |          |
| ---        | 0.0208             | 26           |               |          |
| ---        | 0.0122             | 36           |               |          |
| ---        | 0.0088             | 46           |               |          |
| ---        | 0.0063             | 58           |               |          |
| ---        | 0.0045             | 64           |               |          |
| ---        | 0.0032             | 66           |               |          |
| ---        | 0.0014             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0260 mm | D <sub>30</sub> = 0.0023 mm |
| D <sub>60</sub> = 0.0106 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0078 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

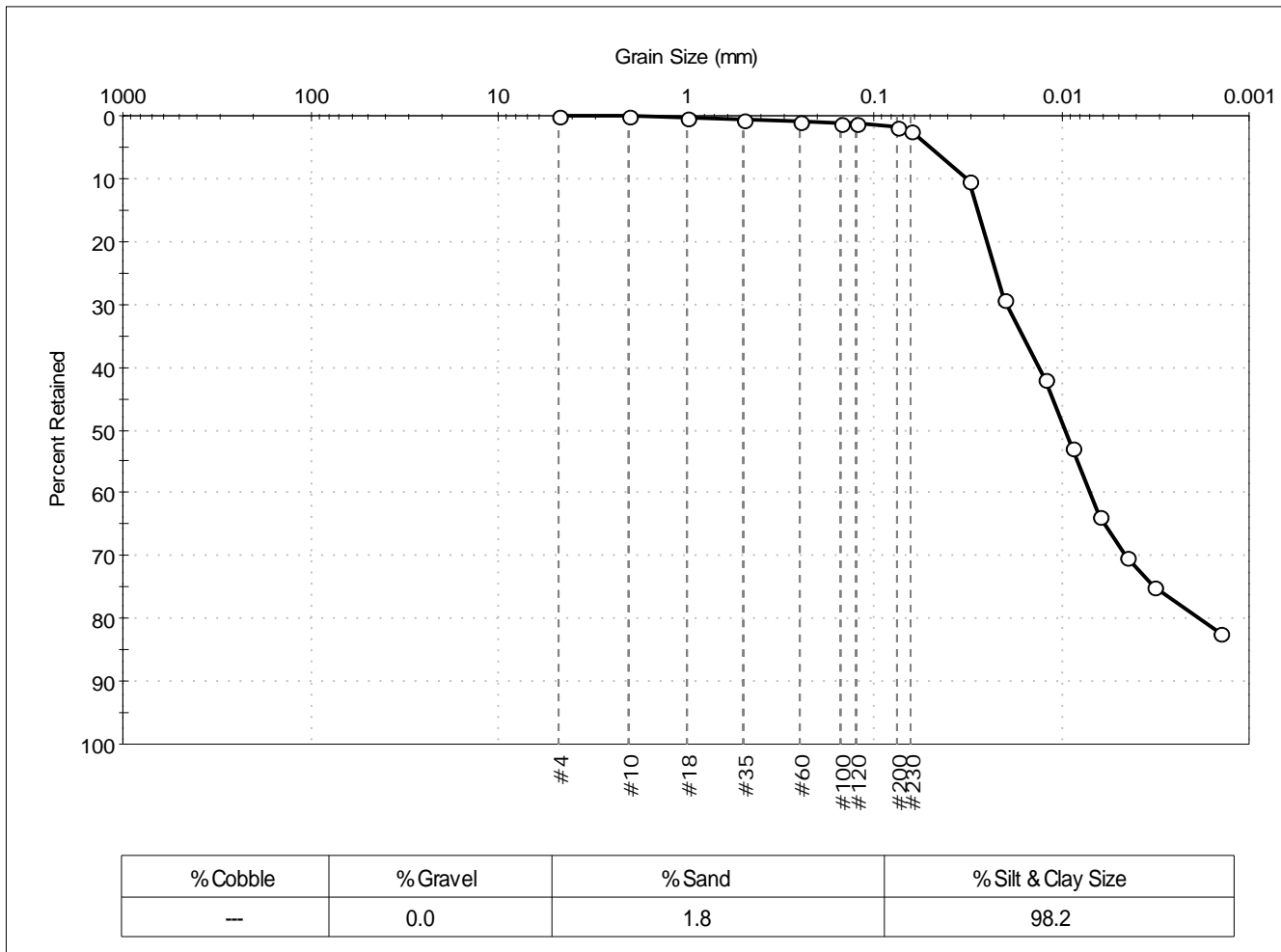
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                       | Project No: GTX-302366 |
| Boring ID: 105-14LTM                | Sample Type: bag            | Tested By: jbr                                  | Checked By: jdt        |
| Sample ID: NBH14-0154               | Test Date: 11/14/14         | Test Id: 310146                                 |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0310             | 10           |               |          |
| ---        | 0.0204             | 29           |               |          |
| ---        | 0.0121             | 42           |               |          |
| ---        | 0.0088             | 53           |               |          |
| ---        | 0.0063             | 64           |               |          |
| ---        | 0.0045             | 70           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0014             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0279 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0131 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0095 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

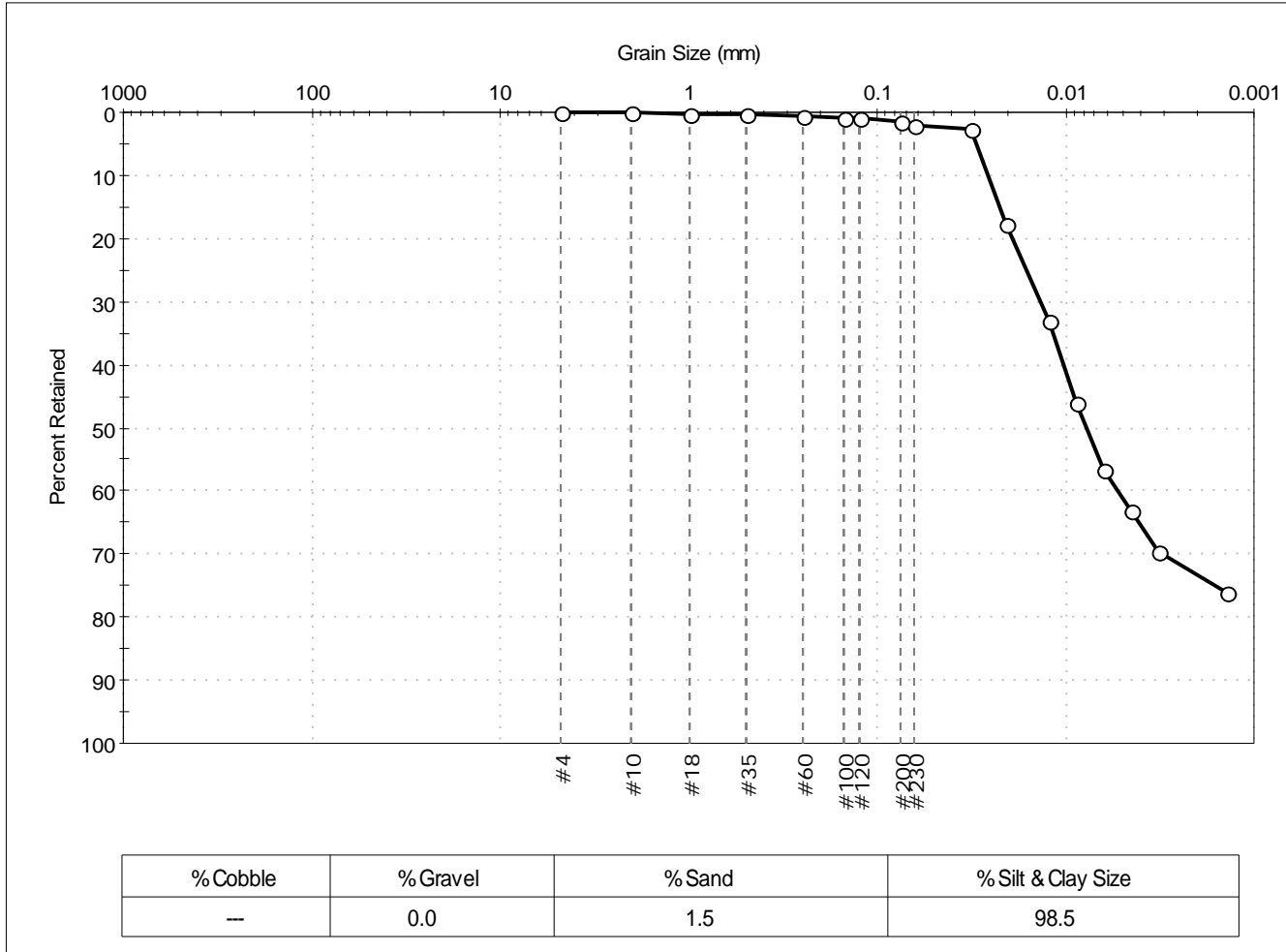
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 105-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0155                  | Test Date:   | 11/17/14   |
| Depth:              | ---                         | Test Id:     | 310147     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 1            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 3            |               |          |
| ---        | 0.0208             | 18           |               |          |
| ---        | 0.0122             | 33           |               |          |
| ---        | 0.0088             | 46           |               |          |
| ---        | 0.0063             | 57           |               |          |
| ---        | 0.0045             | 63           |               |          |
| ---        | 0.0032             | 70           |               |          |
| ---        | 0.0014             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0224 mm | D <sub>30</sub> = 0.0031 mm |
| D <sub>60</sub> = 0.0102 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0078 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

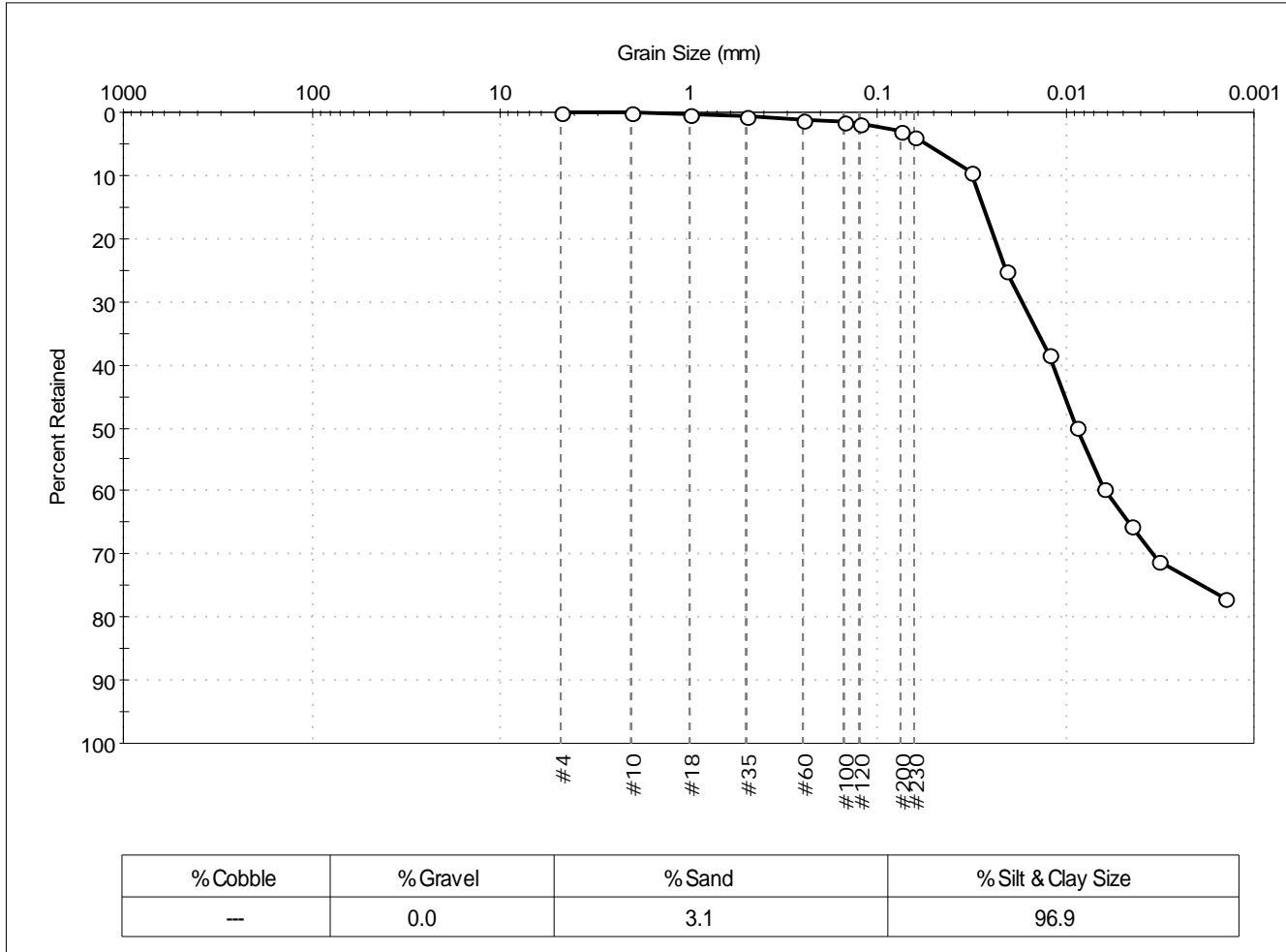
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 105-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0156               | Test Date: 11/17/14         | Test Id: 310148                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 10           |               |          |
| ---        | 0.0207             | 25           |               |          |
| ---        | 0.0122             | 38           |               |          |
| ---        | 0.0088             | 50           |               |          |
| ---        | 0.0063             | 60           |               |          |
| ---        | 0.0045             | 65           |               |          |
| ---        | 0.0032             | 71           |               |          |
| ---        | 0.0014             | 77           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0273 mm | D <sub>30</sub> = 0.0034 mm |
| D <sub>60</sub> = 0.0117 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0088 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

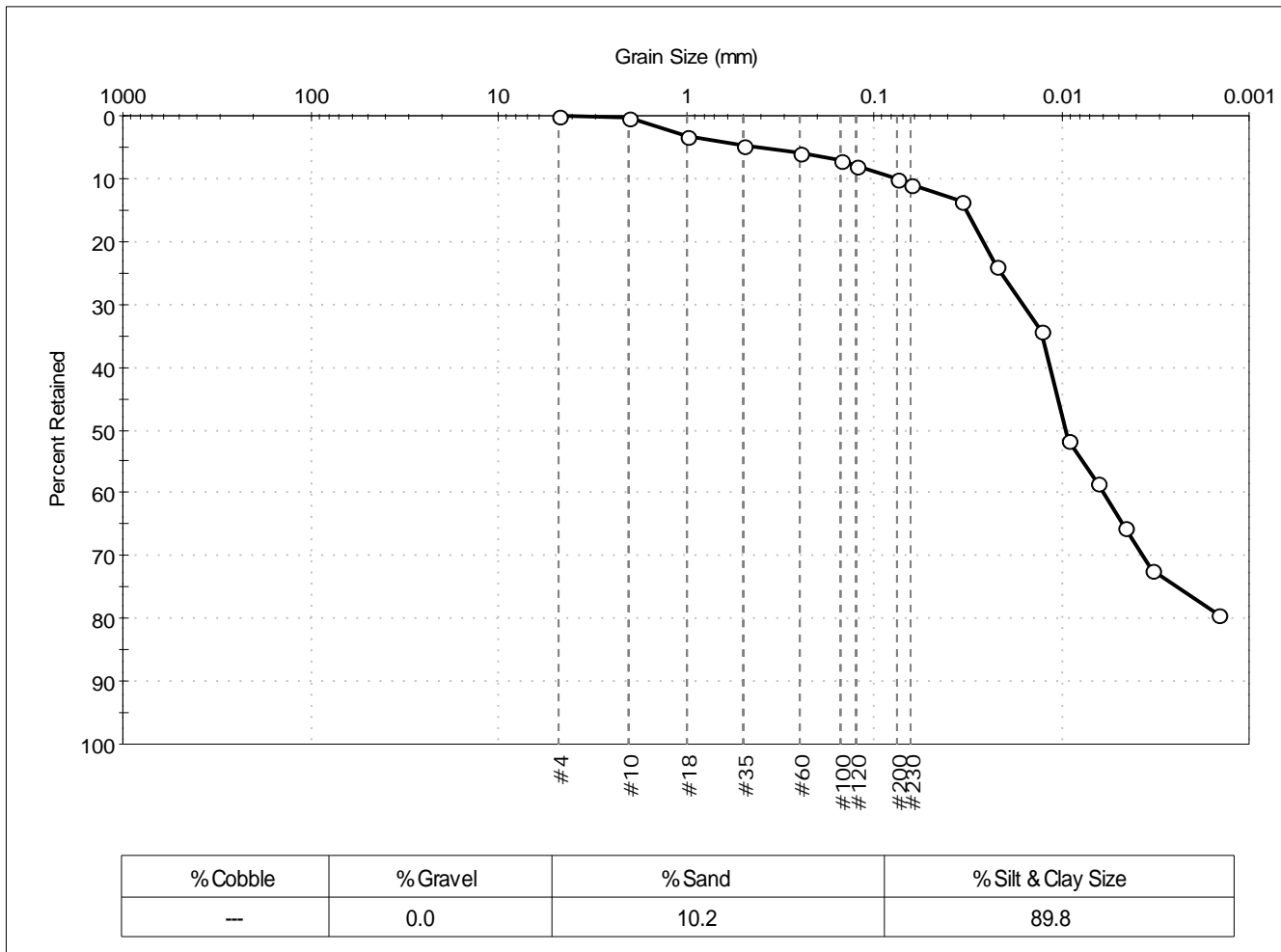
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute            | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 109-14LTM                           | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0157                          | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---                                     | Test Id: 310149             |                           |                        |
| Test Comment: ---                              |                             |                           |                        |
| Sample Description: Moist, very dark gray silt |                             |                           |                        |
| Sample Comment: ---                            |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 10           |               |          |
| #230       | 0.063              | 11           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 13           |               |          |
| ---        | 0.0220             | 24           |               |          |
| ---        | 0.0128             | 34           |               |          |
| ---        | 0.0092             | 52           |               |          |
| ---        | 0.0065             | 58           |               |          |
| ---        | 0.0046             | 65           |               |          |
| ---        | 0.0033             | 72           |               |          |
| ---        | 0.0015             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0319 mm | D <sub>30</sub> = 0.0037 mm |
| D <sub>60</sub> = 0.0115 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0095 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

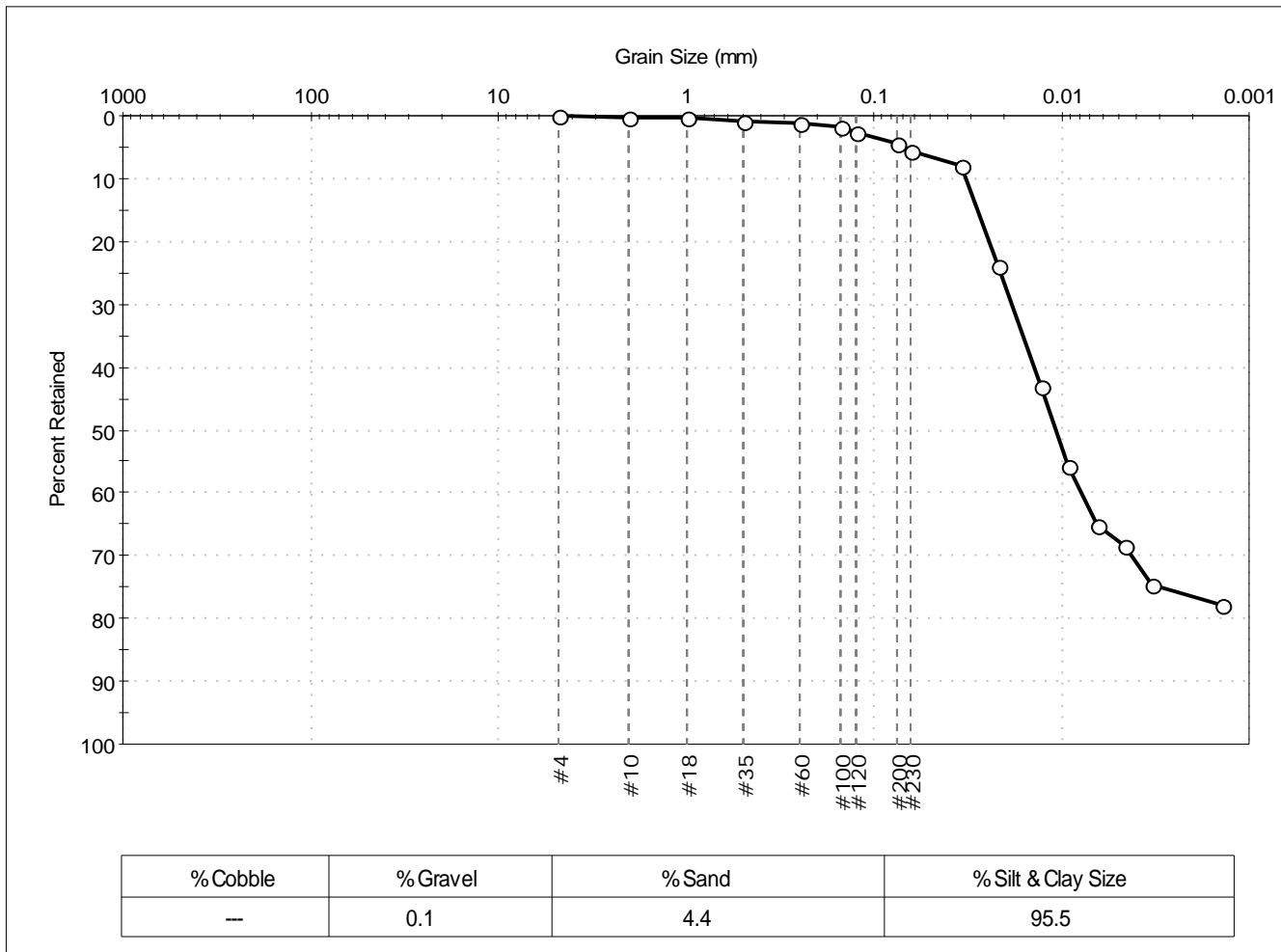
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #200 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 109-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0158               | Test Date: 11/17/14         | Test Id: 310150                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 5            |               |          |
| #230       | 0.063              | 6            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 8            |               |          |
| ---        | 0.0217             | 24           |               |          |
| ---        | 0.0128             | 43           |               |          |
| ---        | 0.0091             | 56           |               |          |
| ---        | 0.0065             | 65           |               |          |
| ---        | 0.0046             | 68           |               |          |
| ---        | 0.0033             | 75           |               |          |
| ---        | 0.0014             | 78           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0278 mm | D <sub>30</sub> = 0.0042 mm |
| D <sub>60</sub> = 0.0138 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0106 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

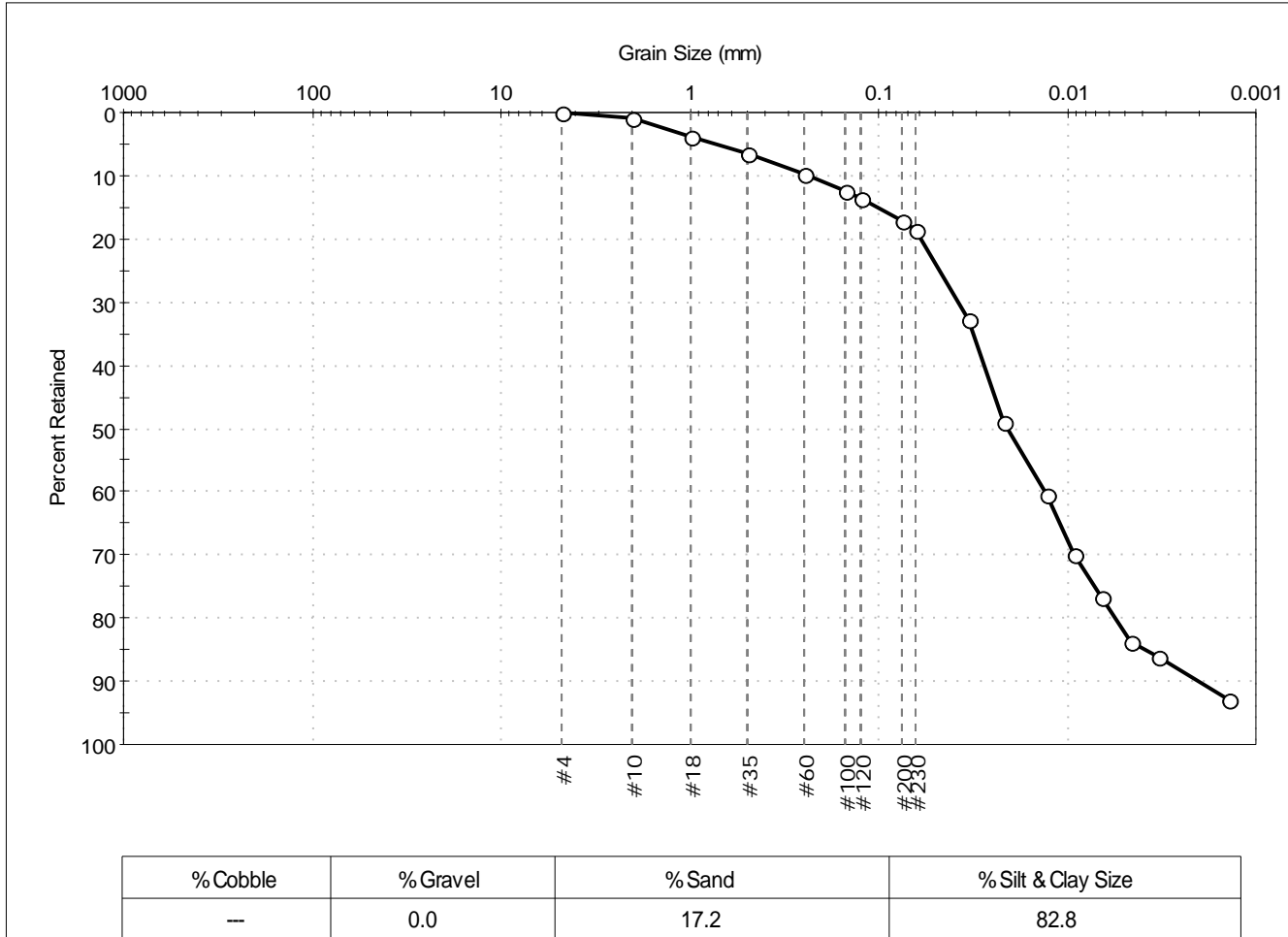
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 109-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0159   | Test Date: 11/05/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310151             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Wet, very dark grayish brown silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 12           |               |          |
| #120       | 0.12               | 14           |               |          |
| #200       | 0.075              | 17           |               |          |
| #230       | 0.063              | 18           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 33           |               |          |
| ---        | 0.0219             | 49           |               |          |
| ---        | 0.0128             | 61           |               |          |
| ---        | 0.0091             | 70           |               |          |
| ---        | 0.0065             | 77           |               |          |
| ---        | 0.0046             | 84           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1019 mm | D <sub>30</sub> = 0.0091 mm |
| D <sub>60</sub> = 0.0276 mm | D <sub>15</sub> = 0.0039 mm |
| D <sub>50</sub> = 0.0209 mm | D <sub>10</sub> = 0.0020 mm |
| C <sub>u</sub> = 13.800     | C <sub>c</sub> = 1.500      |

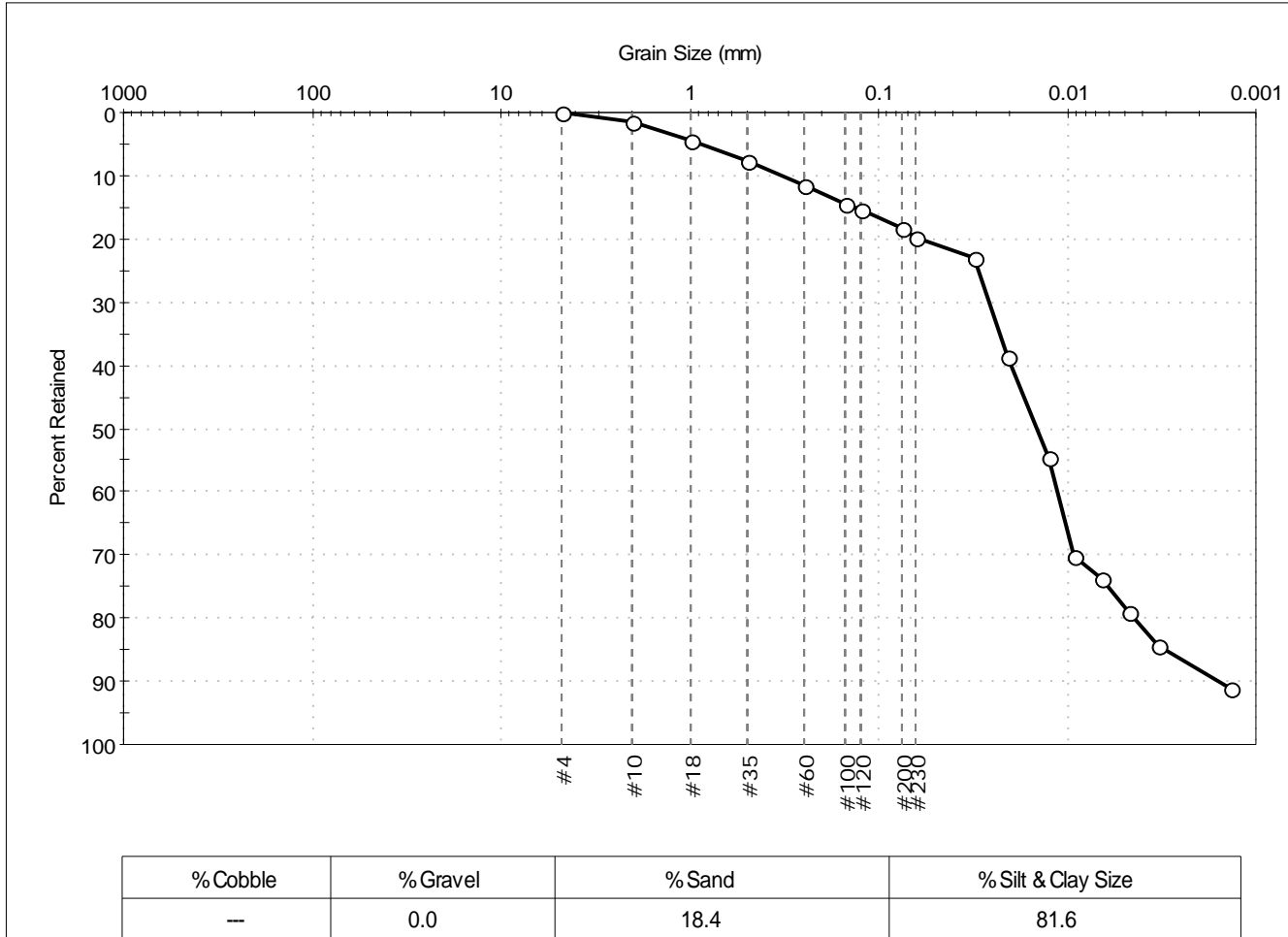
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 109-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0160               | Test Date: 11/04/14         | Test Id: 310152  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 15           |               |          |
| #200       | 0.075              | 18           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 23           |               |          |
| ---        | 0.0208             | 39           |               |          |
| ---        | 0.0125             | 54           |               |          |
| ---        | 0.0092             | 70           |               |          |
| ---        | 0.0065             | 74           |               |          |
| ---        | 0.0047             | 79           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1346 mm | D <sub>30</sub> = 0.0092 mm |
| D <sub>60</sub> = 0.0200 mm | D <sub>15</sub> = 0.0030 mm |
| D <sub>50</sub> = 0.0144 mm | D <sub>10</sub> = 0.0016 mm |
| C <sub>u</sub> = 12.500     | C <sub>c</sub> = 2.645      |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

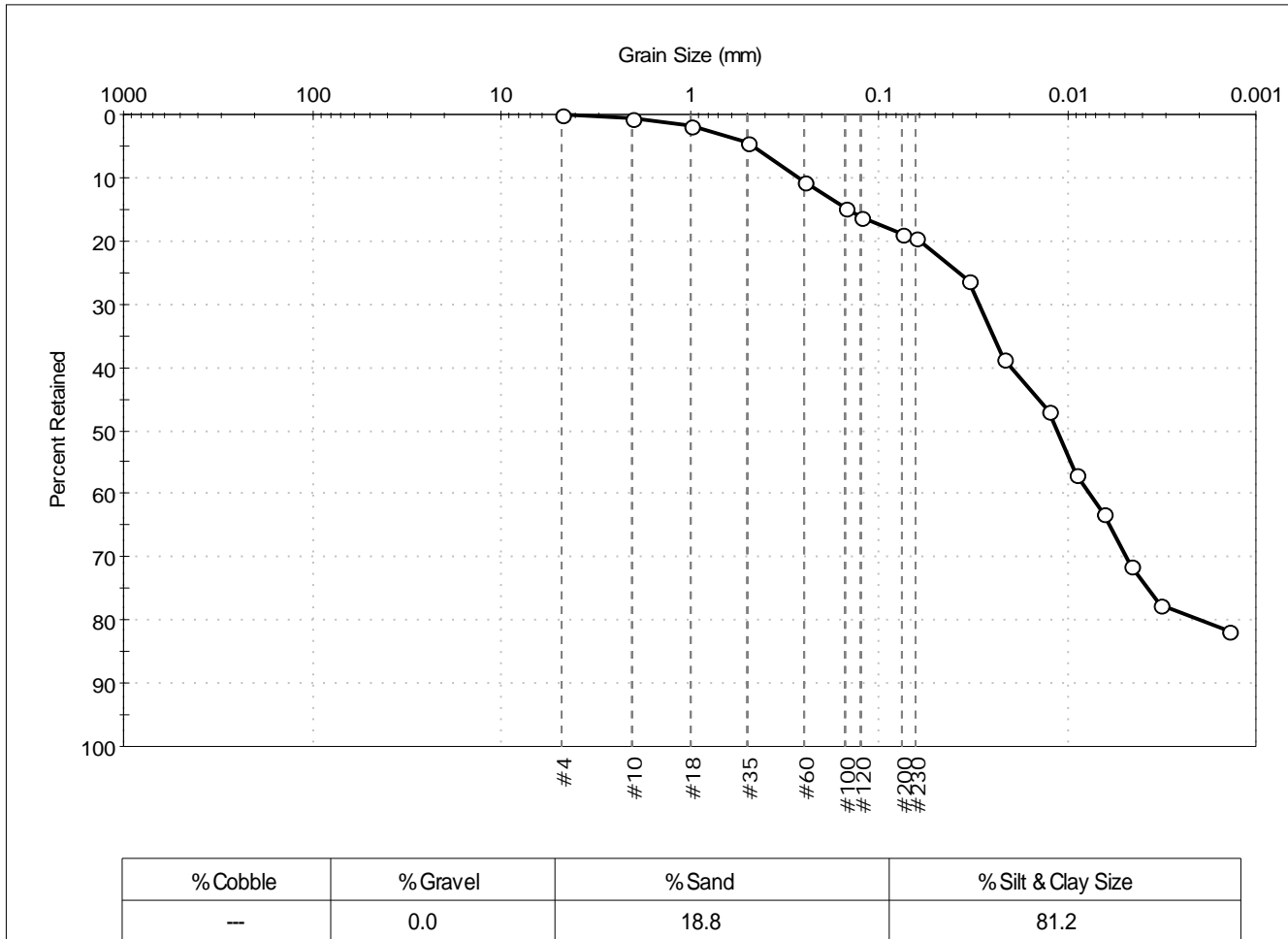
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 115-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0161   | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310153             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Wet, very dark grayish brown silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 19           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 26           |               |          |
| ---        | 0.0215             | 39           |               |          |
| ---        | 0.0126             | 47           |               |          |
| ---        | 0.0090             | 57           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0046             | 71           |               |          |
| ---        | 0.0032             | 78           |               |          |
| ---        | 0.0014             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1469 mm | D <sub>30</sub> = 0.0048 mm |
| D <sub>60</sub> = 0.0196 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0113 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

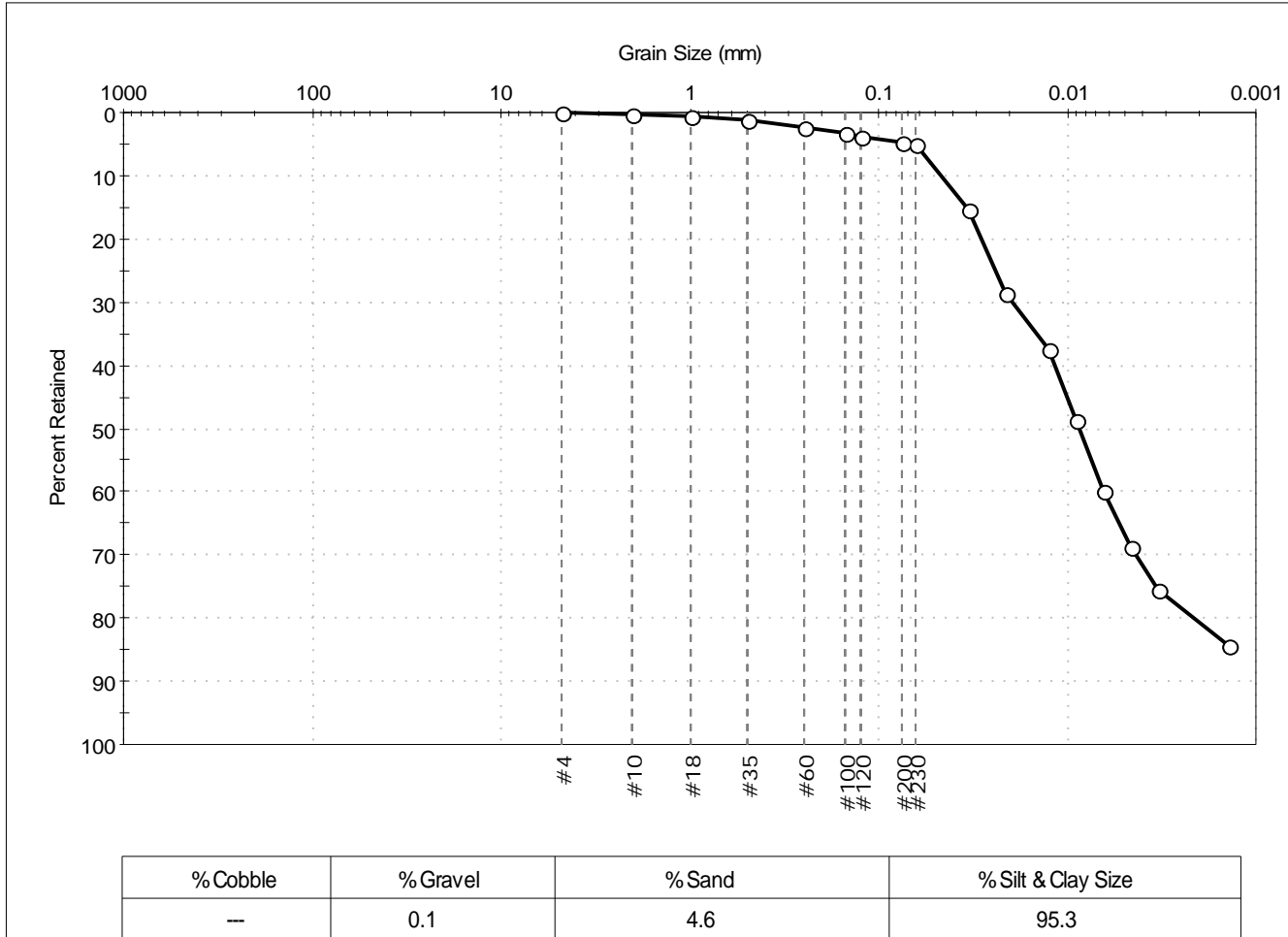
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                   | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 115-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0162   | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310154             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown silt with organics |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 4            |               |          |
| #200       | 0.075              | 5            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 15           |               |          |
| ---        | 0.0214             | 29           |               |          |
| ---        | 0.0125             | 38           |               |          |
| ---        | 0.0090             | 49           |               |          |
| ---        | 0.0064             | 60           |               |          |
| ---        | 0.0046             | 69           |               |          |
| ---        | 0.0033             | 75           |               |          |
| ---        | 0.0014             | 84           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0335 mm | D <sub>30</sub> = 0.0043 mm |
| D <sub>60</sub> = 0.0116 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0086 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

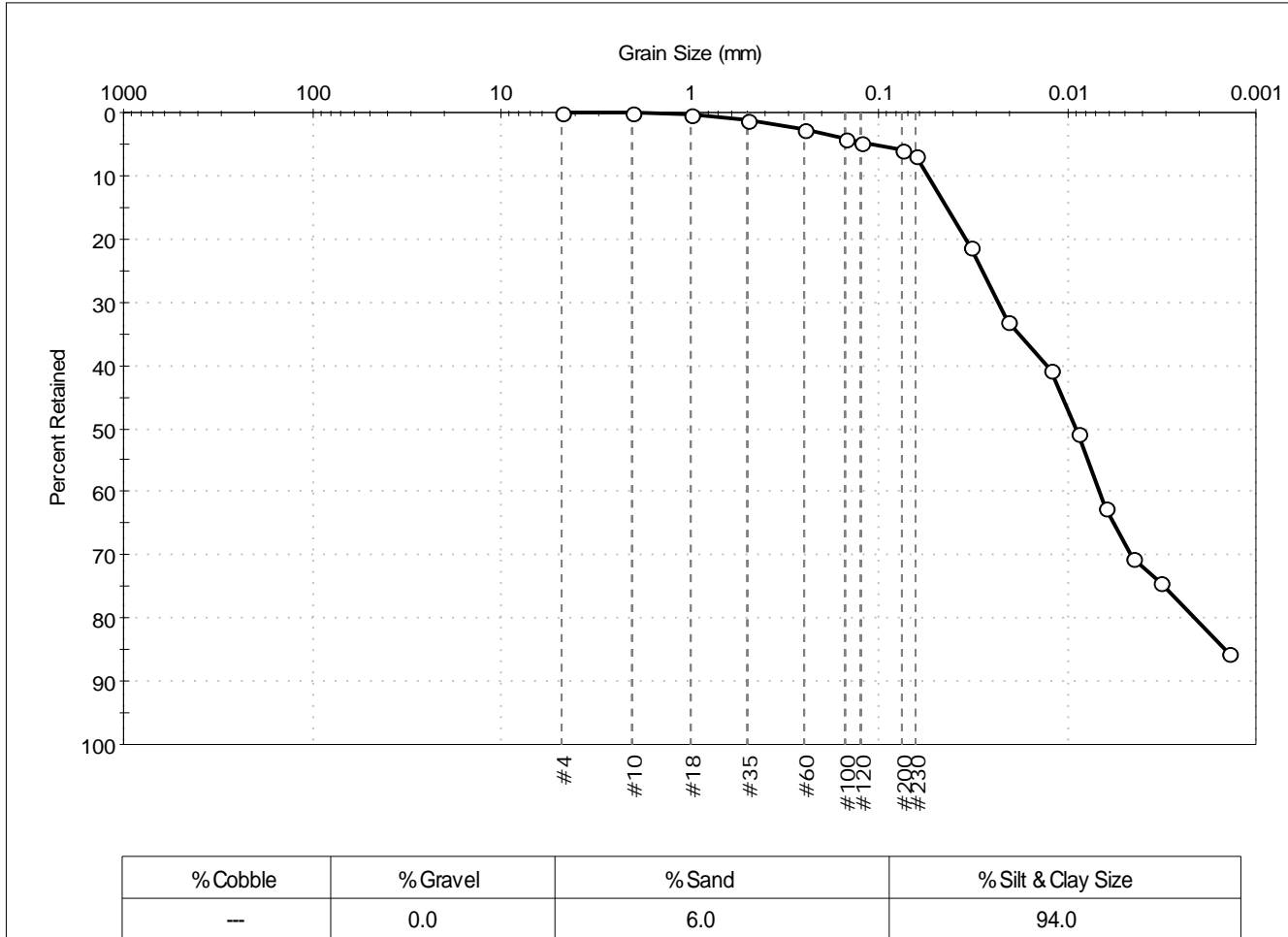
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 115-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0163               | Test Date: 11/17/14         | Test Id: 310155   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark grayish brown silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 7            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 21           |               |          |
| ---        | 0.0209             | 33           |               |          |
| ---        | 0.0123             | 41           |               |          |
| ---        | 0.0088             | 51           |               |          |
| ---        | 0.0063             | 63           |               |          |
| ---        | 0.0045             | 70           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0430 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0130 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0090 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

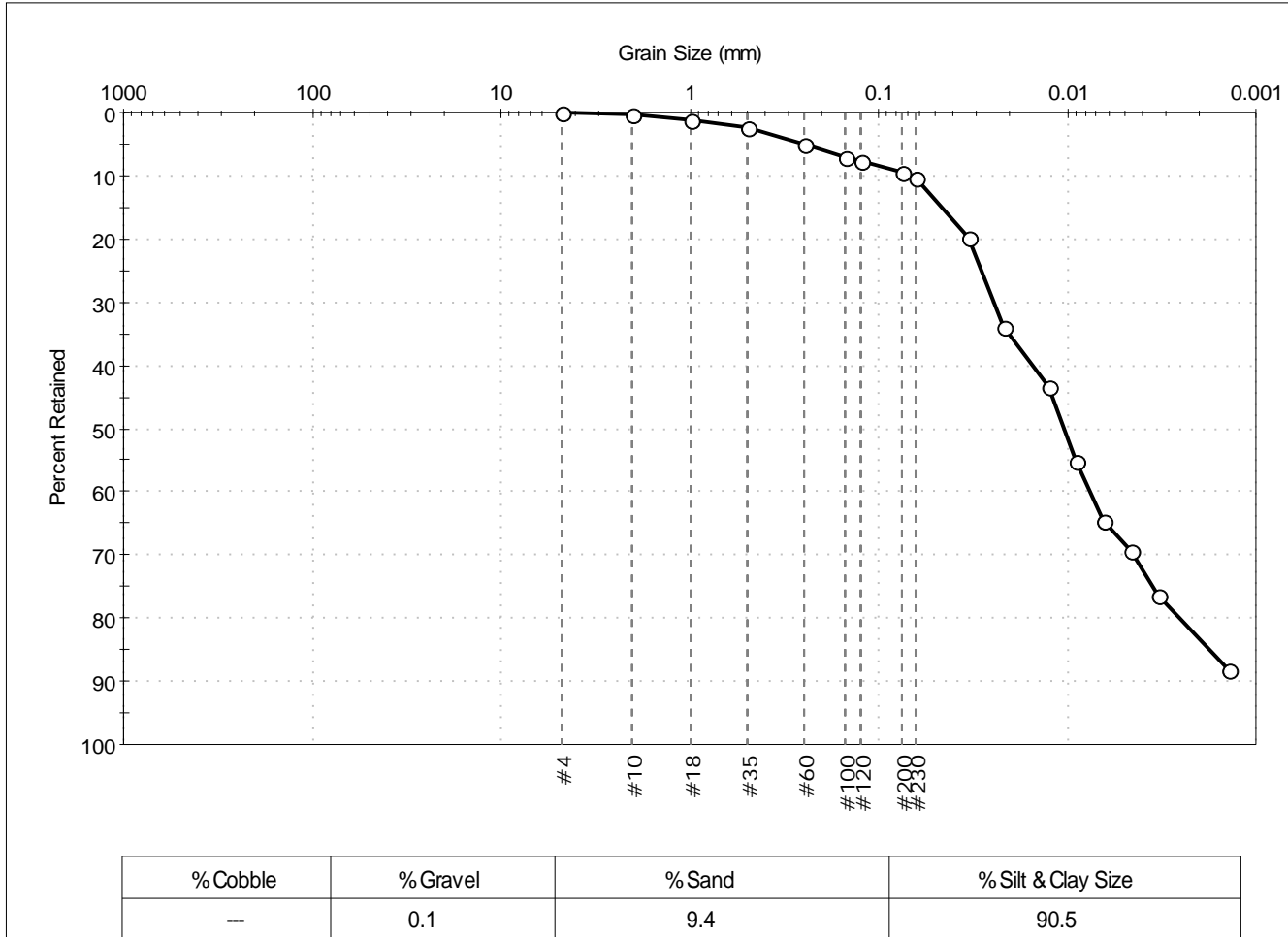
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                     |              |            |
|---------------------|-------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute         |              |            |
| Project:            | New Bedford Harbor                  |              |            |
| Location:           | New Bedford, MA                     | Project No:  | GTX-302366 |
| Boring ID:          | 115-14LTM                           | Sample Type: | bag        |
| Sample ID:          | NBH14-0164                          | Test Date:   | 11/17/14   |
| Depth:              | ---                                 | Test Id:     | 310156     |
| Test Comment:       | ---                                 |              |            |
| Sample Description: | Moist, very dark grayish brown silt |              |            |
| Sample Comment:     | ---                                 |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 10           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 20           |               |          |
| ---        | 0.0216             | 34           |               |          |
| ---        | 0.0126             | 43           |               |          |
| ---        | 0.0090             | 55           |               |          |
| ---        | 0.0065             | 65           |               |          |
| ---        | 0.0046             | 69           |               |          |
| ---        | 0.0033             | 76           |               |          |
| ---        | 0.0014             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0463 mm | D <sub>30</sub> = 0.0045 mm |
| D <sub>60</sub> = 0.0154 mm | D <sub>15</sub> = 0.0018 mm |
| D <sub>50</sub> = 0.0105 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

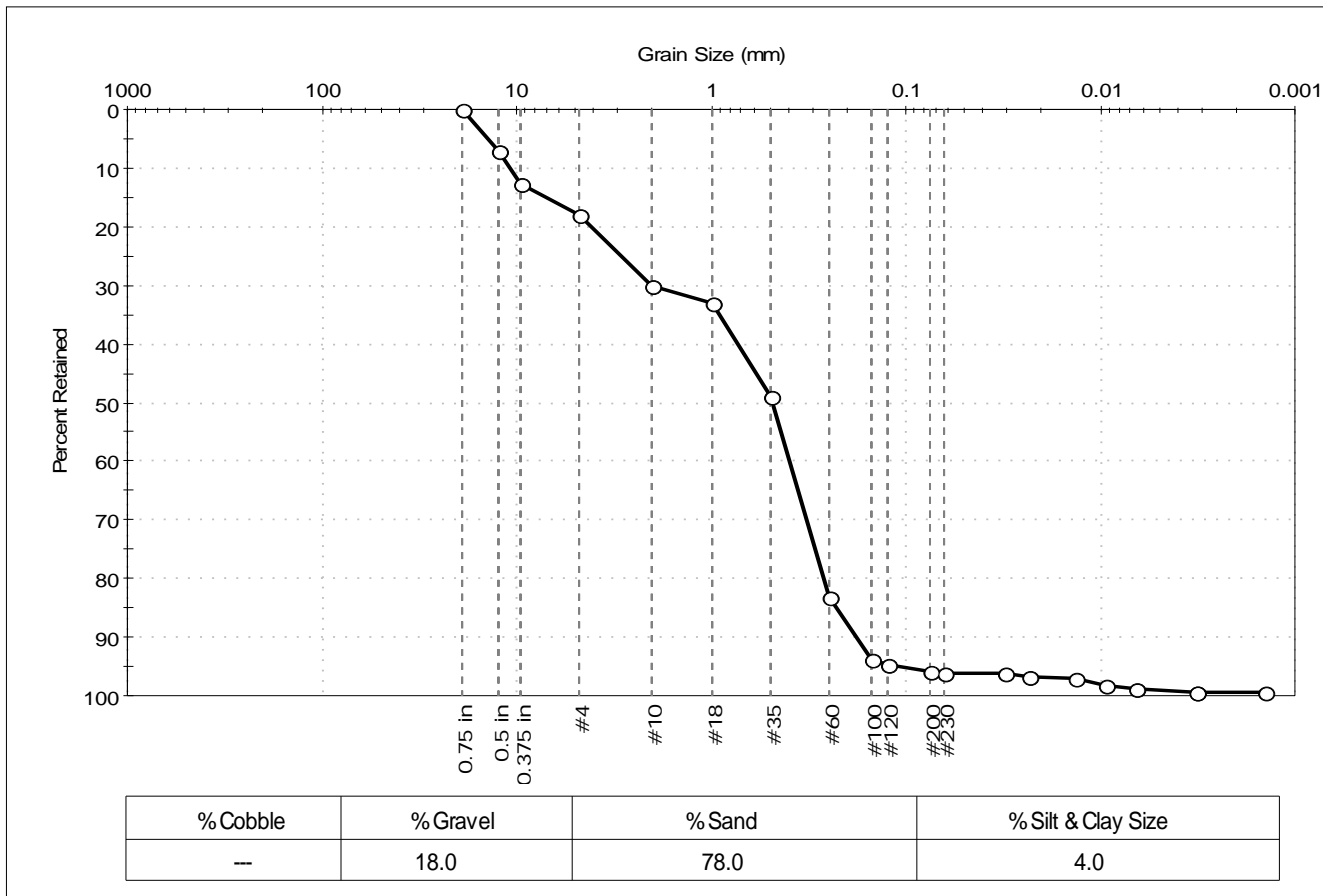
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                   | Project No: GTX-302366 |
| Boring ID: 154-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0165               | Test Date: 11/05/14         | Test Id: 310157   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray sand with gravel | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 7            |               |          |
| 0.375 in   | 9.50               | 13           |               |          |
| #4         | 4.75               | 18           |               |          |
| #10        | 2.00               | 30           |               |          |
| #18        | 1.00               | 33           |               |          |
| #35        | 0.50               | 49           |               |          |
| #60        | 0.25               | 83           |               |          |
| #100       | 0.15               | 94           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 96.0         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 96           |               |          |
| ---        | 0.0233             | 97           |               |          |
| ---        | 0.0134             | 97           |               |          |
| ---        | 0.0095             | 98           |               |          |
| ---        | 0.0066             | 99           |               |          |
| ---        | 0.0032             | 99           |               |          |
| ---        | 0.0032             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 7.0459 mm | D <sub>30</sub> = 0.3264 mm |
| D <sub>60</sub> = 0.7386 mm | D <sub>15</sub> = 0.2290 mm |
| D <sub>50</sub> = 0.4890 mm | D <sub>10</sub> = 0.1796 mm |
| C <sub>u</sub> = 4.112      | C <sub>c</sub> = 0.803      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand with gravel (SP)          |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

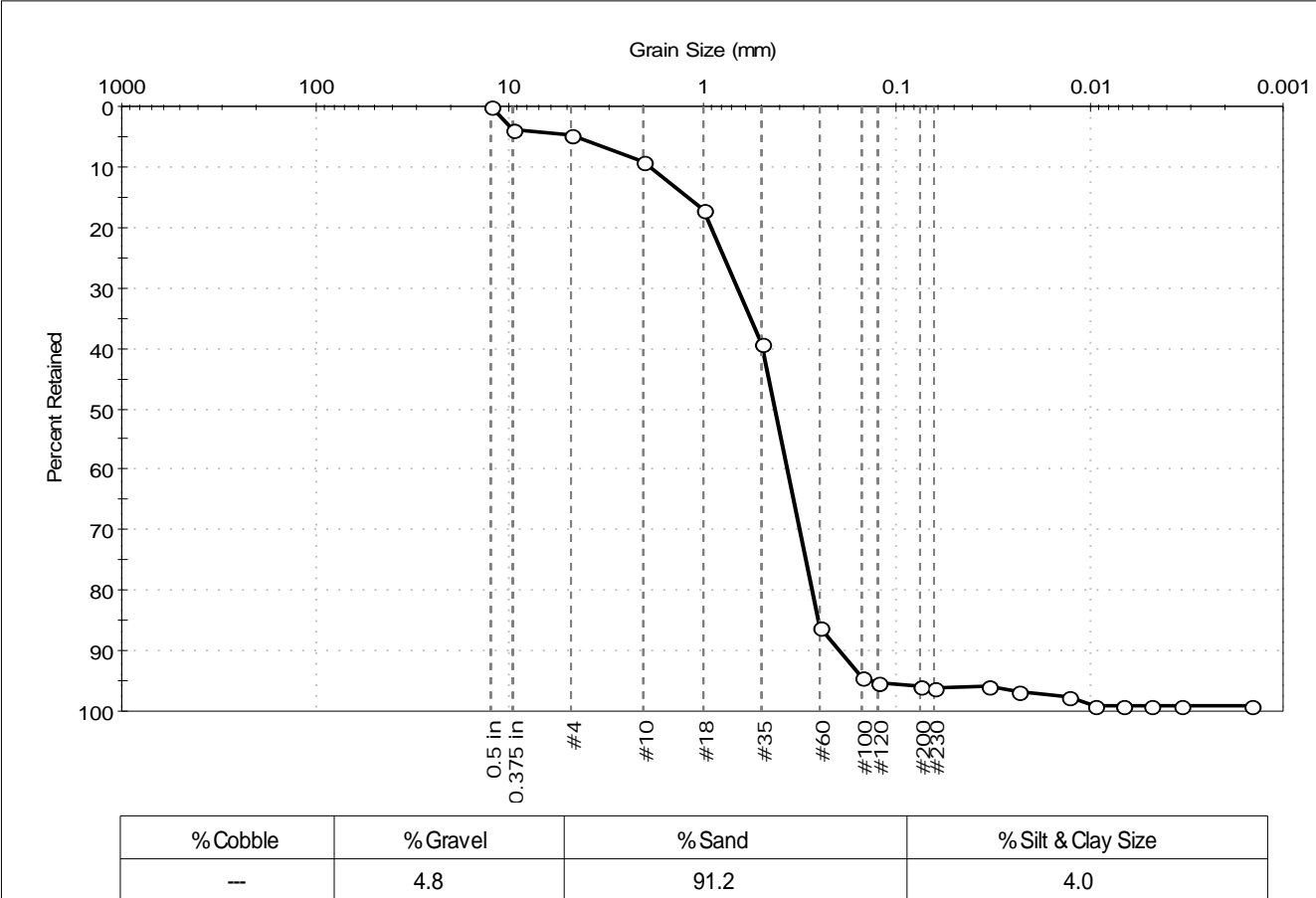
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                            | Project No: GTX-302366 |
| Boring ID: 154-14LTM                | Sample Type: bag            | Tested By: jbr                                       | Checked By: jdt        |
| Sample ID: NBH14-0166               | Test Date: 11/05/14         | Test Id: 310158                                      |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 17           |               |          |
| #35        | 0.50               | 39           |               |          |
| #60        | 0.25               | 86           |               |          |
| #100       | 0.15               | 94           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 96.0         |               |          |
| #230       | 0.063              | 96           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 96           |               |          |
| ---        | 0.0231             | 97           |               |          |
| ---        | 0.0128             | 98           |               |          |
| ---        | 0.0094             | 99           |               |          |
| ---        | 0.0068             | 99           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0015             | 99           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.1966 mm | D <sub>30</sub> = 0.3175 mm |
| D <sub>60</sub> = 0.4937 mm | D <sub>15</sub> = 0.2546 mm |
| D <sub>50</sub> = 0.4261 mm | D <sub>10</sub> = 0.1974 mm |
| C <sub>u</sub> = 2.501      | C <sub>c</sub> = 1.034      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | Poorly graded sand (SP)                      |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (1)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

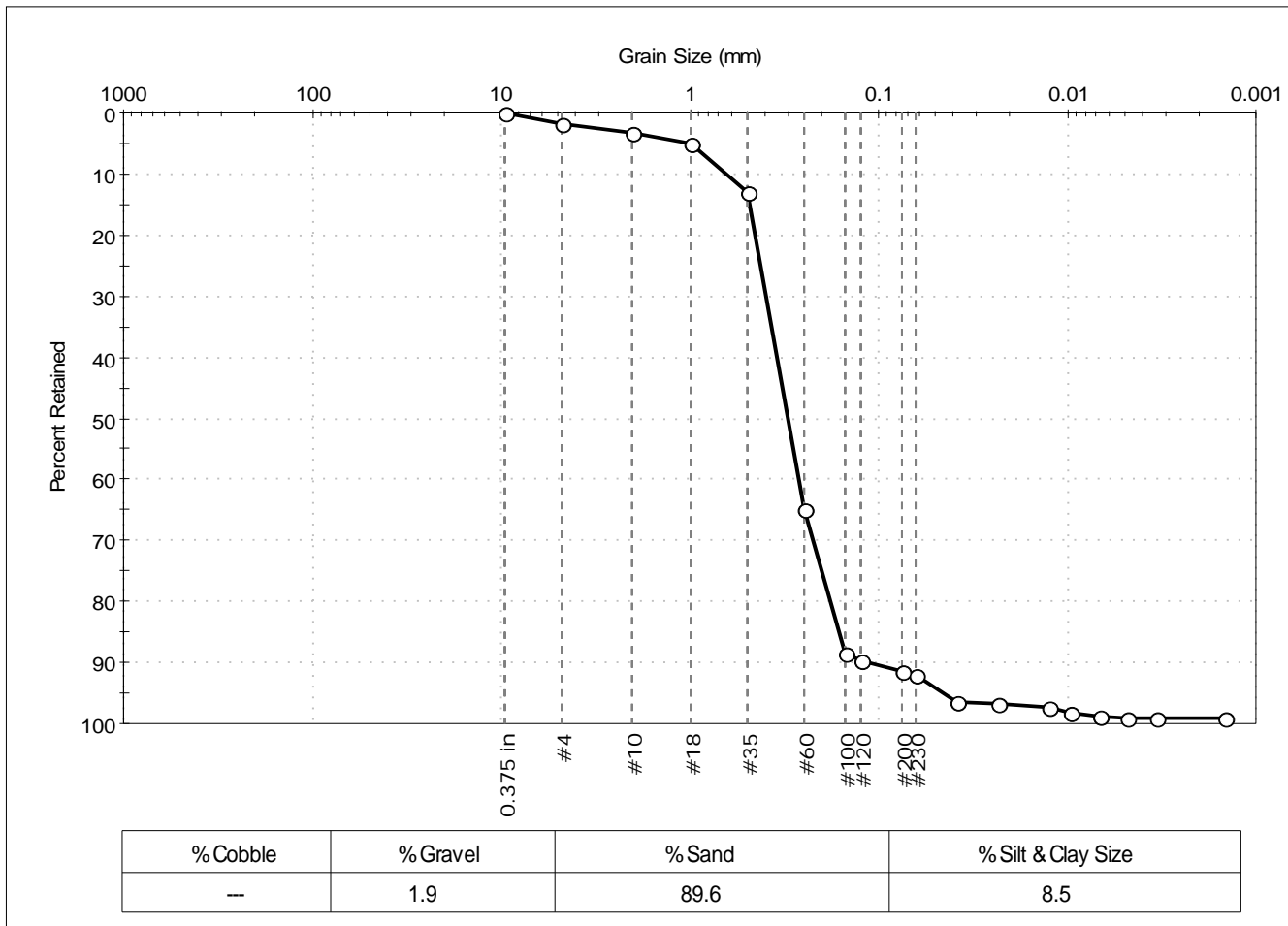
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                                      |              |            |
|---------------------|--------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute          |              |            |
| Project:            | New Bedford Harbor                   |              |            |
| Location:           | New Bedford, MA                      | Project No:  | GTX-302366 |
| Boring ID:          | 154-14LTM                            | Sample Type: | bag        |
| Sample ID:          | NBH14-0167                           | Test Date:   | 11/04/14   |
| Depth:              | ---                                  | Test Id:     | 310159     |
| Test Comment:       | ---                                  |              |            |
| Sample Description: | Moist, very dark gray sand with silt |              |            |
| Sample Comment:     | ---                                  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 65           |               |          |
| #100       | 0.15               | 88           |               |          |
| #120       | 0.12               | 90           |               |          |
| #200       | 0.075              | 91.5         |               |          |
| #230       | 0.063              | 92           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0381             | 96           |               |          |
| ---        | 0.0234             | 97           |               |          |
| ---        | 0.0126             | 97           |               |          |
| ---        | 0.0095             | 98           |               |          |
| ---        | 0.0068             | 99           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4871 mm | D <sub>30</sub> = 0.2235 mm |
| D <sub>60</sub> = 0.3485 mm | D <sub>15</sub> = 0.1616 mm |
| D <sub>50</sub> = 0.3048 mm | D <sub>10</sub> = 0.1180 mm |
| C <sub>u</sub> = 2.953      | C <sub>c</sub> = 1.215      |

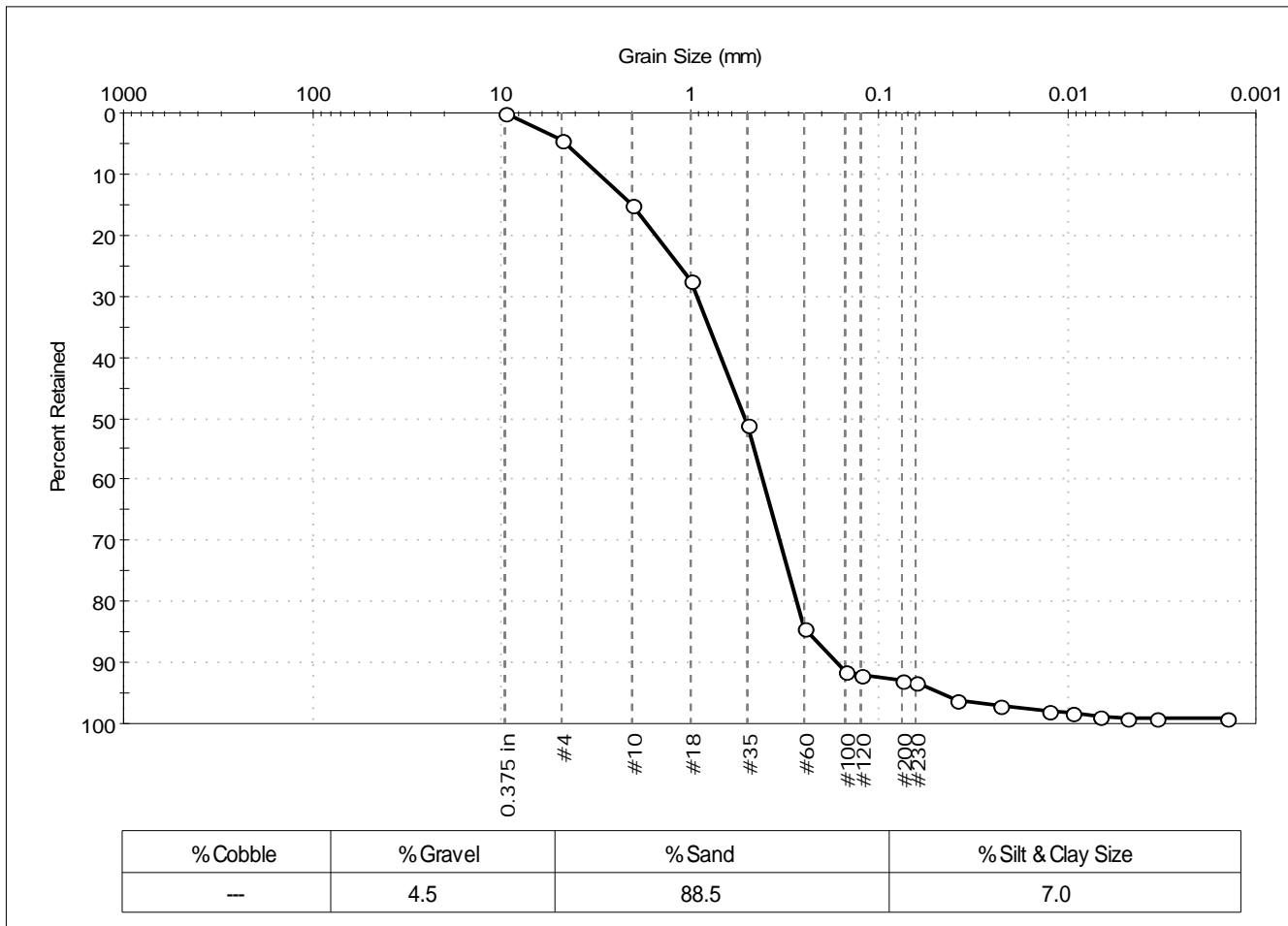
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute                            | Project No: GTX-302366 |
| Project: New Bedford Harbor                                    |                        |
| Location: New Bedford, MA                                      |                        |
| Boring ID: 154-14LTM   | Sample Type: bag       |
| Sample ID: NBH14-0168  | Test Date: 11/04/14    |
| Depth: ---   | Test Id: 310160        |
| Test Comment: ---  | Tested By: jbr         |
| Sample Description: Moist, very dark olive gray sand with silt | Checked By: jdt        |
| Sample Comment: ---  |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 15           |               |          |
| #18        | 1.00               | 27           |               |          |
| #35        | 0.50               | 51           |               |          |
| #60        | 0.25               | 84           |               |          |
| #100       | 0.15               | 92           |               |          |
| #120       | 0.12               | 92           |               |          |
| #200       | 0.075              | 93.0         |               |          |
| #230       | 0.063              | 93           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0381             | 96           |               |          |
| ---        | 0.0229             | 97           |               |          |
| ---        | 0.0124             | 98           |               |          |
| ---        | 0.0095             | 98           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0048             | 99           |               |          |
| ---        | 0.0034             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.0120 mm | D <sub>30</sub> = 0.3366 mm |
| D <sub>60</sub> = 0.6908 mm | D <sub>15</sub> = 0.2383 mm |
| D <sub>50</sub> = 0.5142 mm | D <sub>10</sub> = 0.1669 mm |
| C <sub>u</sub> = 4.139      | C <sub>c</sub> = 0.983      |

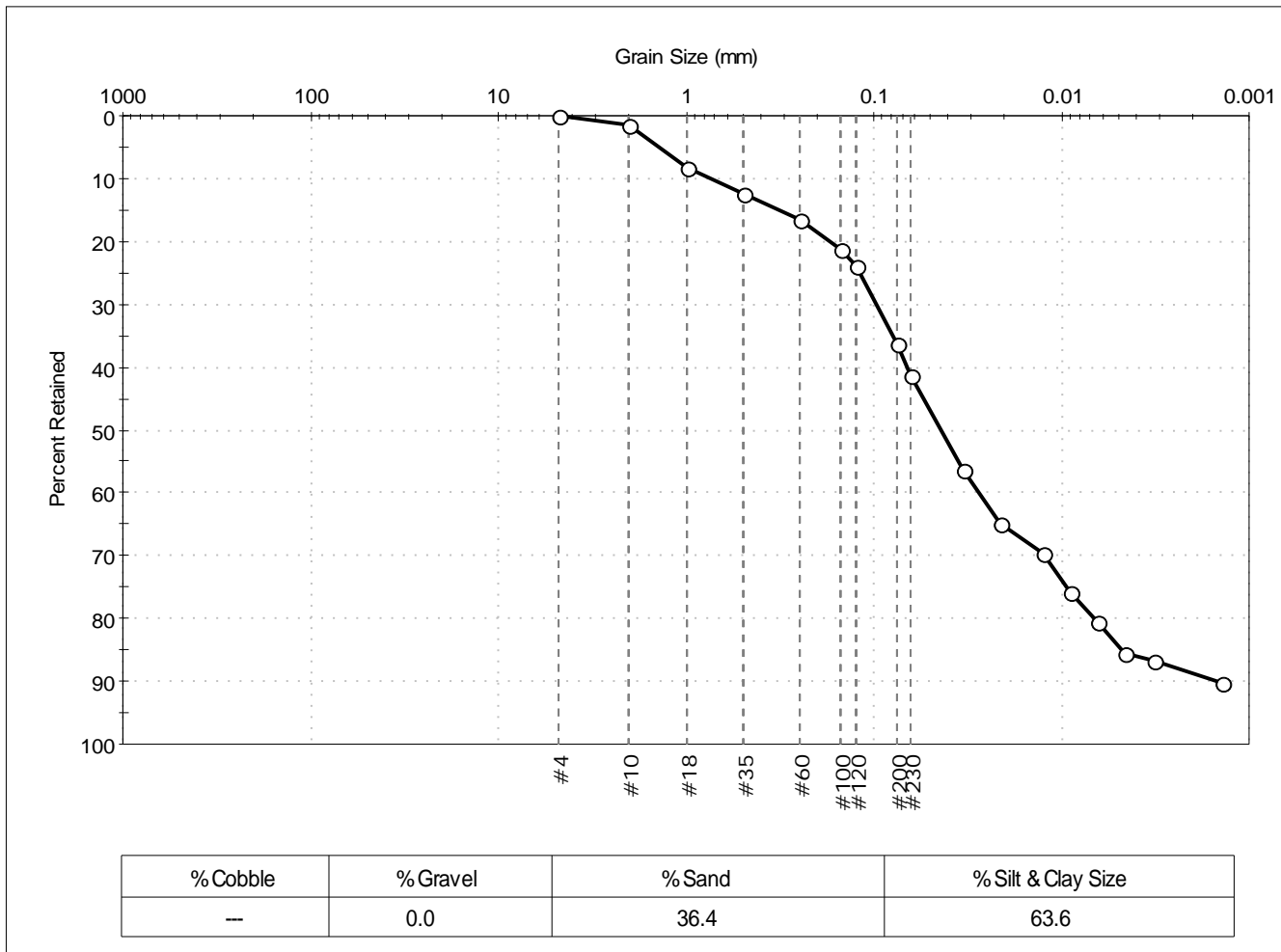
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                     | Project No: GTX-302366 |
| Boring ID: 139-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0169               | Test Date: 11/05/14         | Test Id: 310161   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark grayish brown sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 24           |               |          |
| #200       | 0.075              | 36           |               |          |
| #230       | 0.063              | 41           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 56           |               |          |
| ---        | 0.0214             | 65           |               |          |
| ---        | 0.0125             | 70           |               |          |
| ---        | 0.0090             | 76           |               |          |
| ---        | 0.0064             | 81           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3212 mm | D <sub>30</sub> = 0.0124 mm |
| D <sub>60</sub> = 0.0657 mm | D <sub>15</sub> = 0.0047 mm |
| D <sub>50</sub> = 0.0434 mm | D <sub>10</sub> = 0.0015 mm |
| C <sub>u</sub> = 43.800     | C <sub>c</sub> = 1.560      |

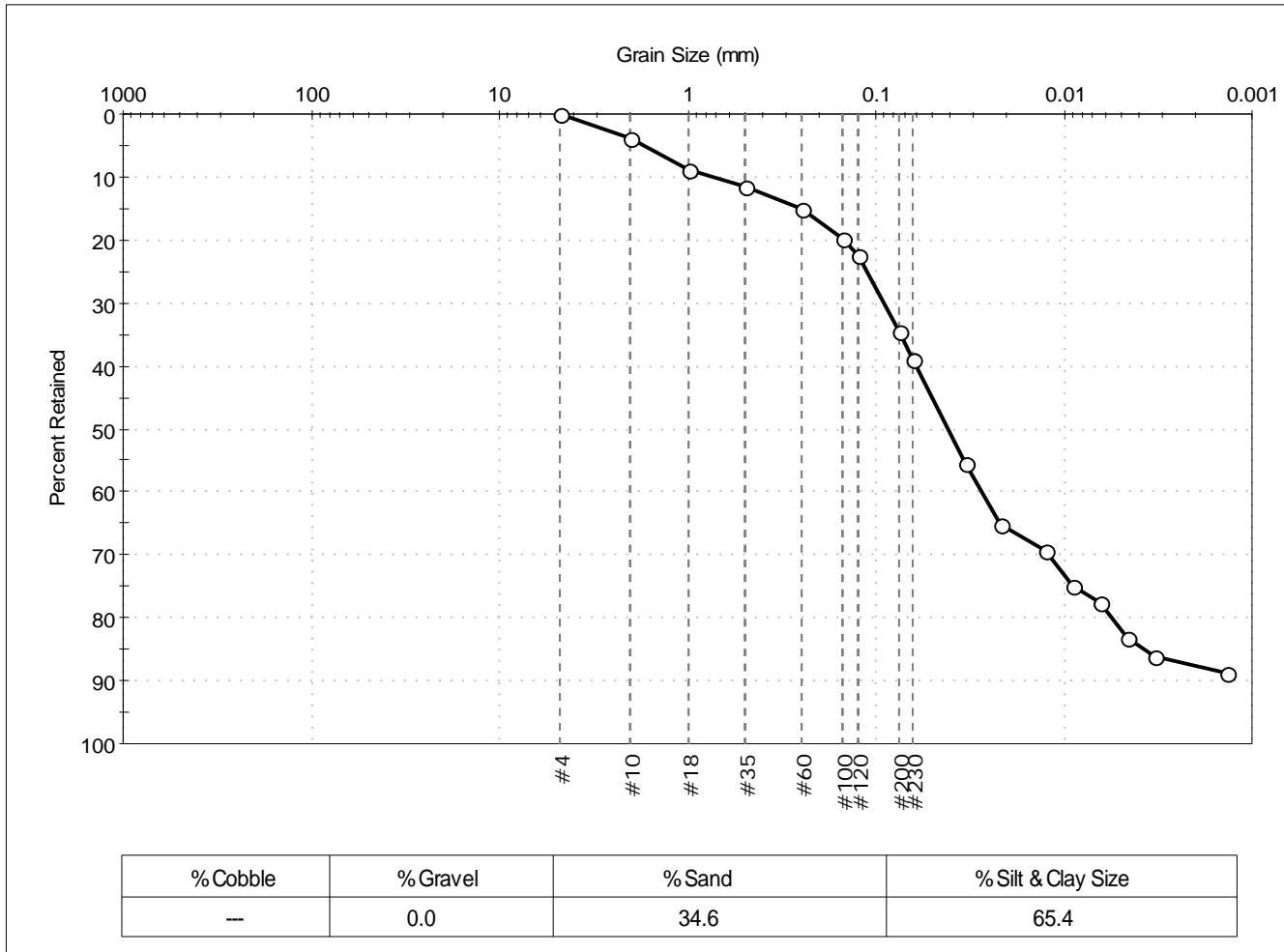
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 139-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0170   | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310163             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown sandy silt |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 35           |               |          |
| #230       | 0.063              | 39           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 55           |               |          |
| ---        | 0.0217             | 65           |               |          |
| ---        | 0.0126             | 69           |               |          |
| ---        | 0.0091             | 75           |               |          |
| ---        | 0.0064             | 78           |               |          |
| ---        | 0.0046             | 83           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2494 mm | D <sub>30</sub> = 0.0121 mm |
| D <sub>60</sub> = 0.0603 mm | D <sub>15</sub> = 0.0037 mm |
| D <sub>50</sub> = 0.0412 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

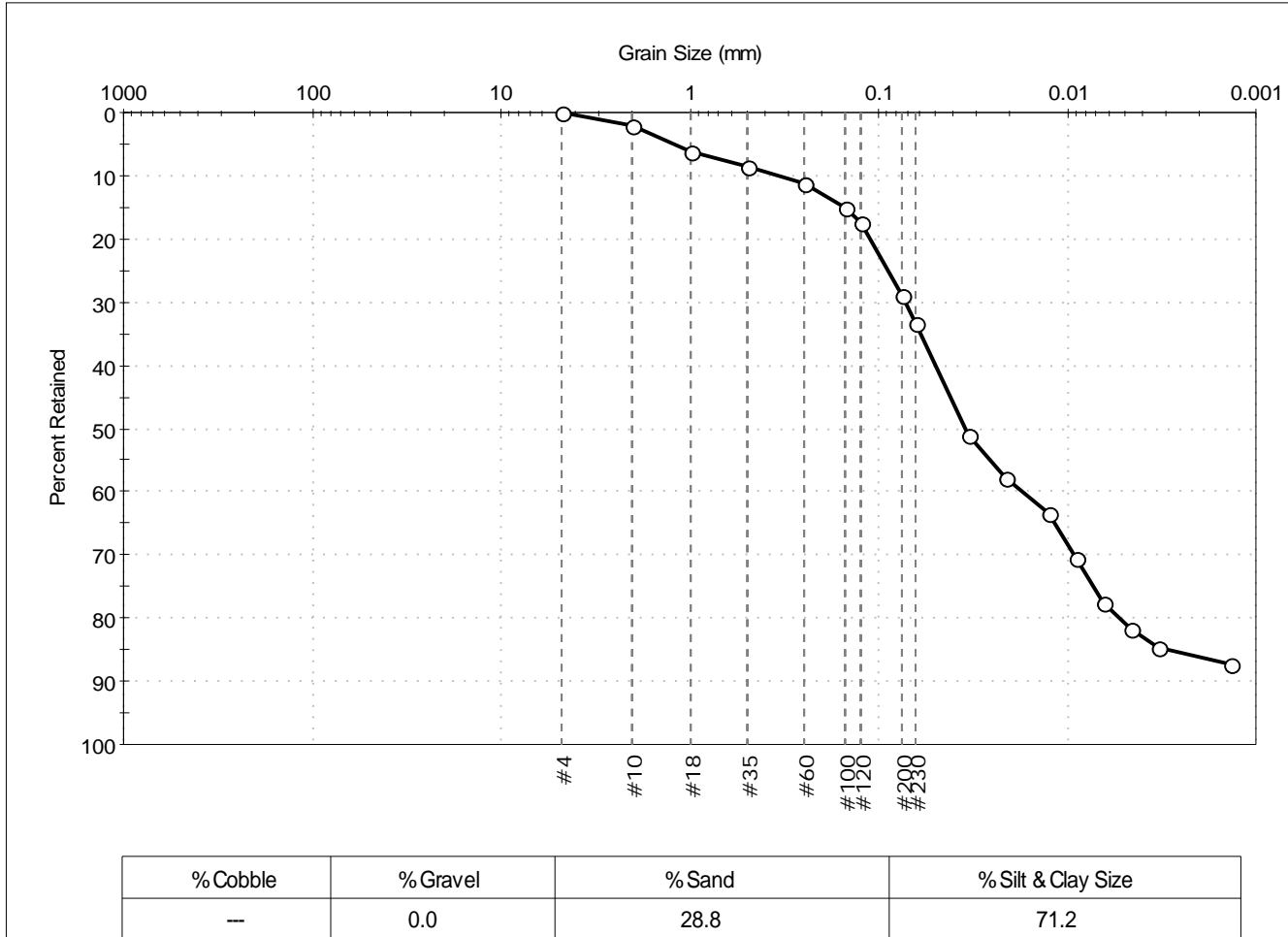
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 139-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0171   | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310164             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 33           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0332             | 51           |               |          |
| ---        | 0.0213             | 58           |               |          |
| ---        | 0.0125             | 64           |               |          |
| ---        | 0.0090             | 71           |               |          |
| ---        | 0.0064             | 78           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 85           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1515 mm | D <sub>30</sub> = 0.0092 mm |
| D <sub>60</sub> = 0.0494 mm | D <sub>15</sub> = 0.0029 mm |
| D <sub>50</sub> = 0.0344 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

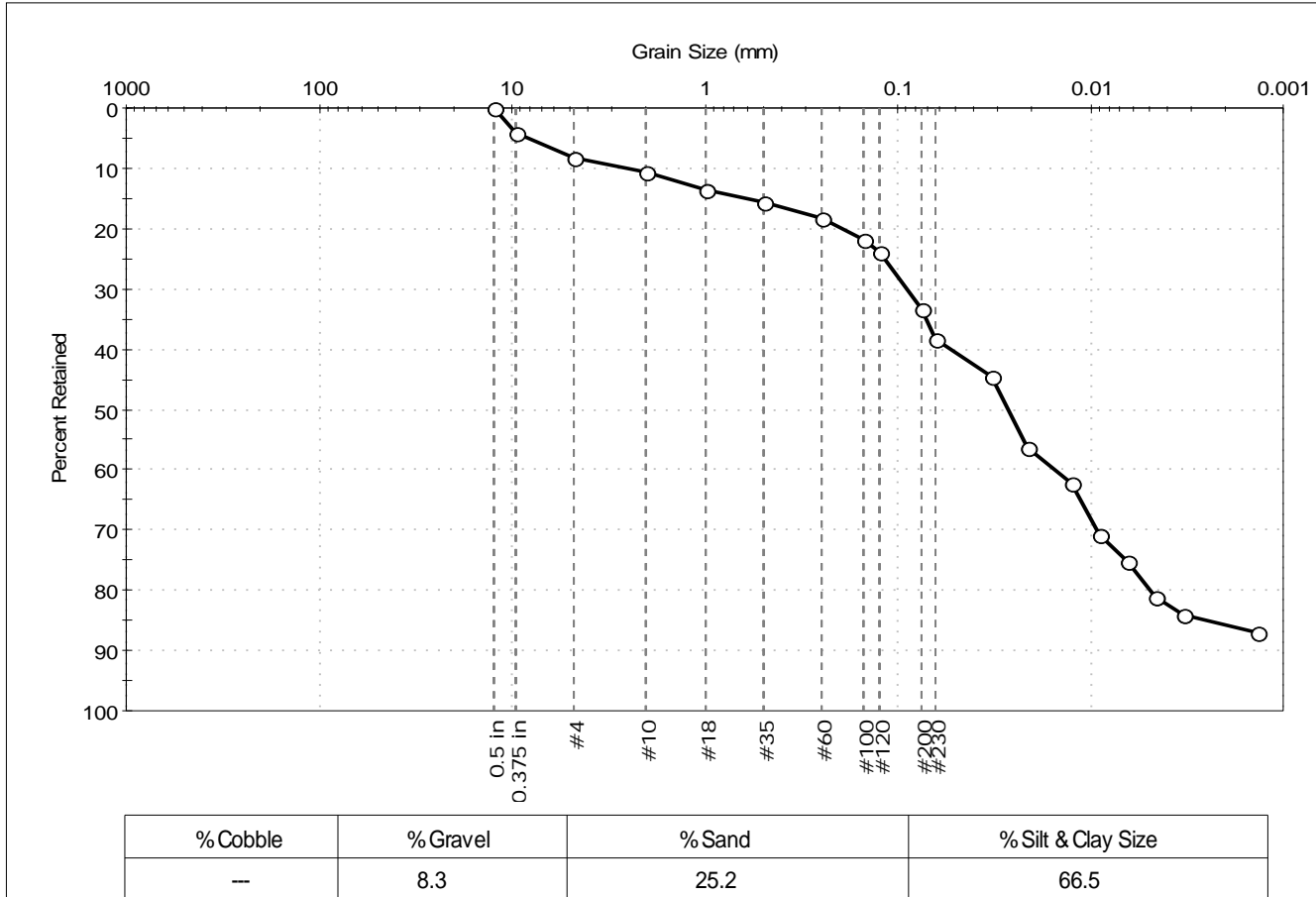
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 139-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0172   | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310165             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown sandy silt |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 11           |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 22           |               |          |
| #120       | 0.12               | 24           |               |          |
| #200       | 0.075              | 33           |               |          |
| #230       | 0.063              | 38           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 45           |               |          |
| ---        | 0.0214             | 56           |               |          |
| ---        | 0.0125             | 62           |               |          |
| ---        | 0.0090             | 71           |               |          |
| ---        | 0.0064             | 75           |               |          |
| ---        | 0.0046             | 81           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 87           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6275 mm | D <sub>30</sub> = 0.0093 mm |
| D <sub>60</sub> = 0.0529 mm | D <sub>15</sub> = 0.0024 mm |
| D <sub>50</sub> = 0.0270 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

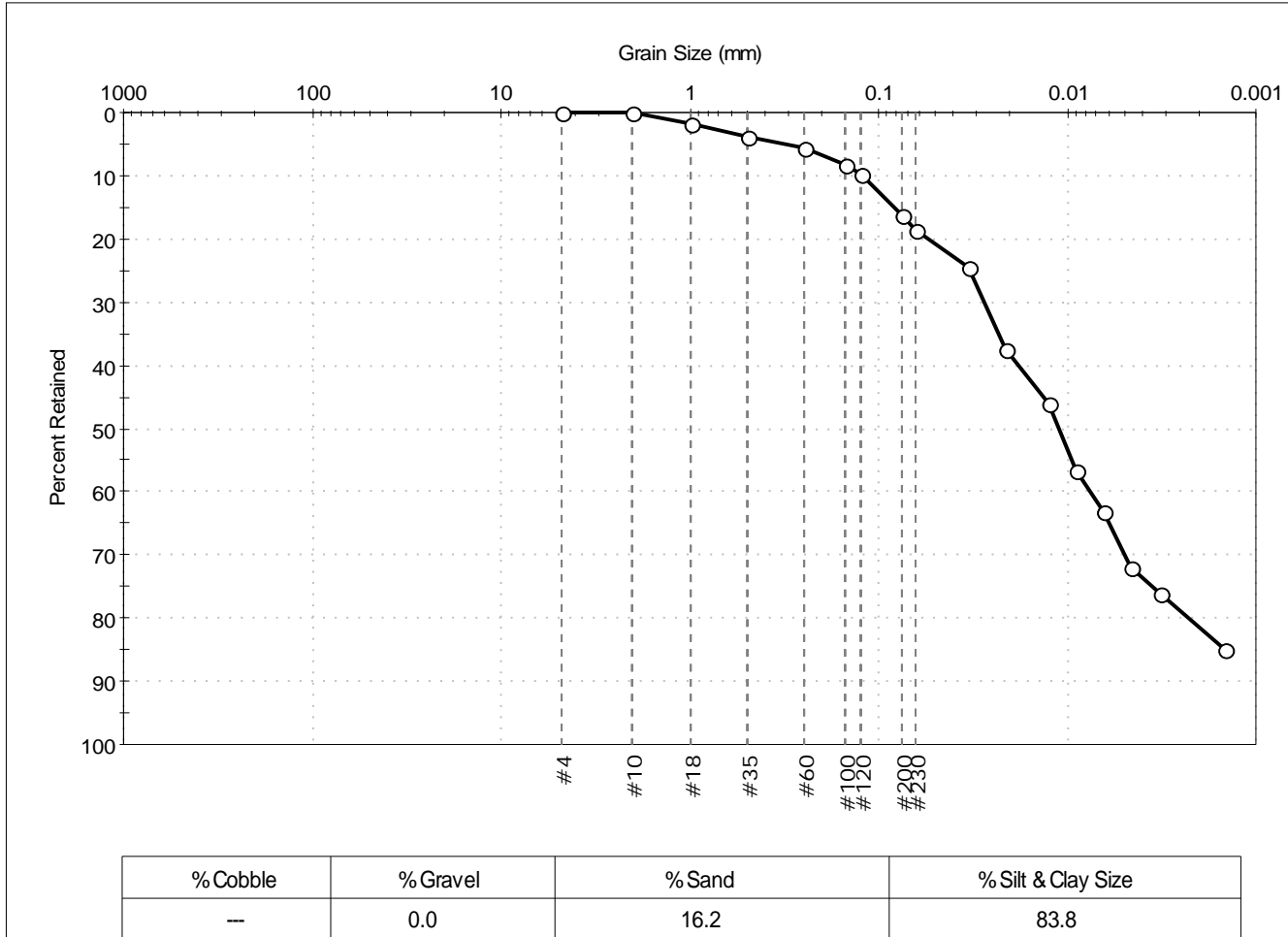
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                            | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 131-14LTM   | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0173  | Test Date: 11/05/14         | Test Id: 310166           |                        |
| Depth: ---   | Test Comment: ---           |                           |                        |
| Sample Description: Moist, very dark olive gray silt with sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 16           |               |          |
| #230       | 0.063              | 19           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 24           |               |          |
| ---        | 0.0213             | 37           |               |          |
| ---        | 0.0125             | 46           |               |          |
| ---        | 0.0089             | 57           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0046             | 72           |               |          |
| ---        | 0.0033             | 76           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0825 mm | D <sub>30</sub> = 0.0049 mm |
| D <sub>60</sub> = 0.0180 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0110 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

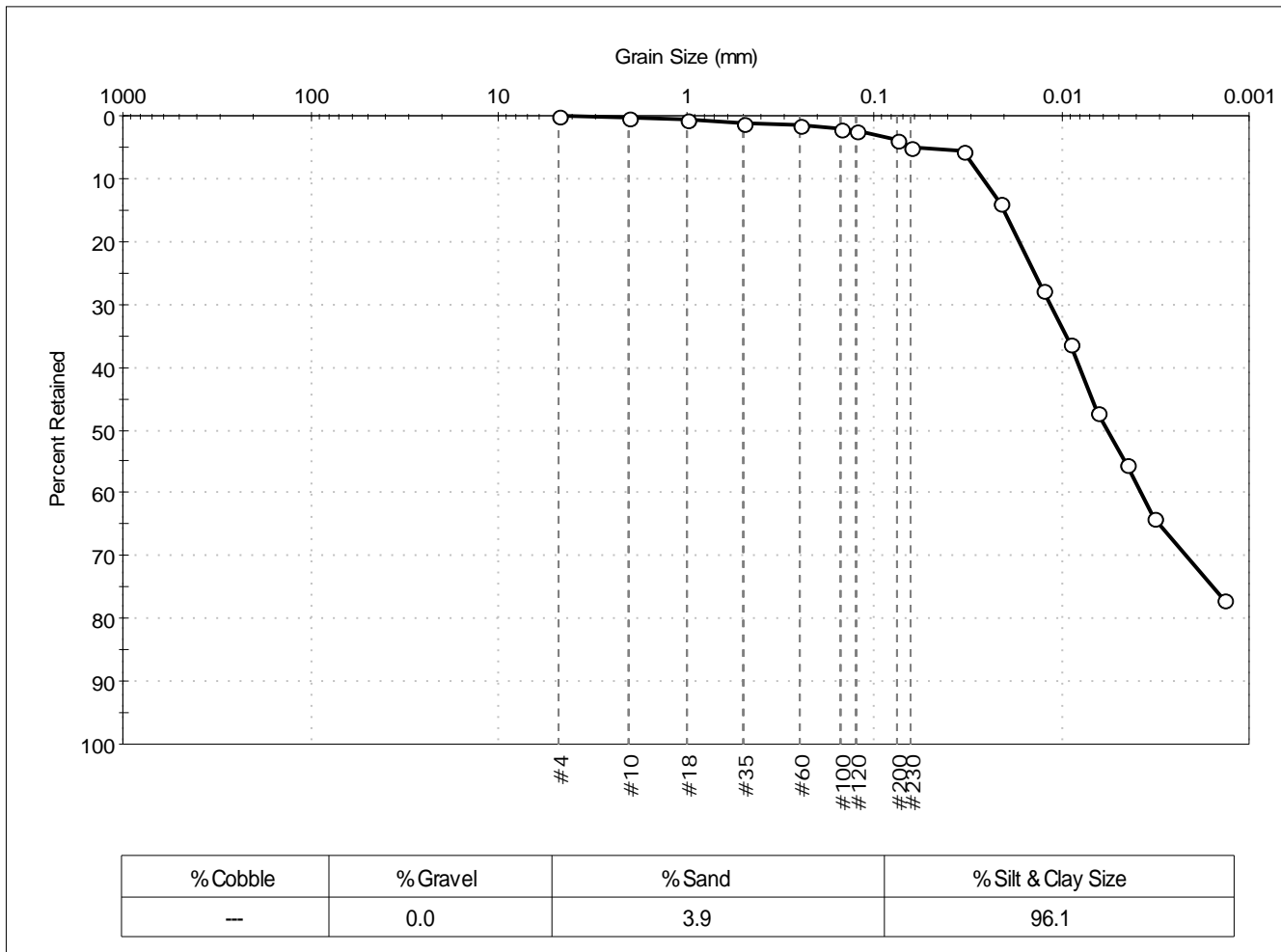
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                              |              |            |
|---------------------|------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute  |              |            |
| Project:            | New Bedford Harbor           |              |            |
| Location:           | New Bedford, MA              | Project No:  | GTX-302366 |
| Boring ID:          | 131-14LTM                    | Sample Type: | bag        |
| Sample ID:          | NBH14-0173DUP                | Test Date:   | 11/12/14   |
| Depth:              | ---                          | Test Id:     | 313931     |
| Test Comment:       | ---                          |              |            |
| Sample Description: | Wet, dark grayish brown silt |              |            |
| Sample Comment:     | ---                          |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 6            |               |          |
| ---        | 0.0213             | 14           |               |          |
| ---        | 0.0125             | 28           |               |          |
| ---        | 0.0089             | 36           |               |          |
| ---        | 0.0064             | 47           |               |          |
| ---        | 0.0045             | 56           |               |          |
| ---        | 0.0032             | 64           |               |          |
| ---        | 0.0014             | 77           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0204 mm | D <sub>30</sub> = 0.0022 mm |
| D <sub>60</sub> = 0.0079 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0057 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

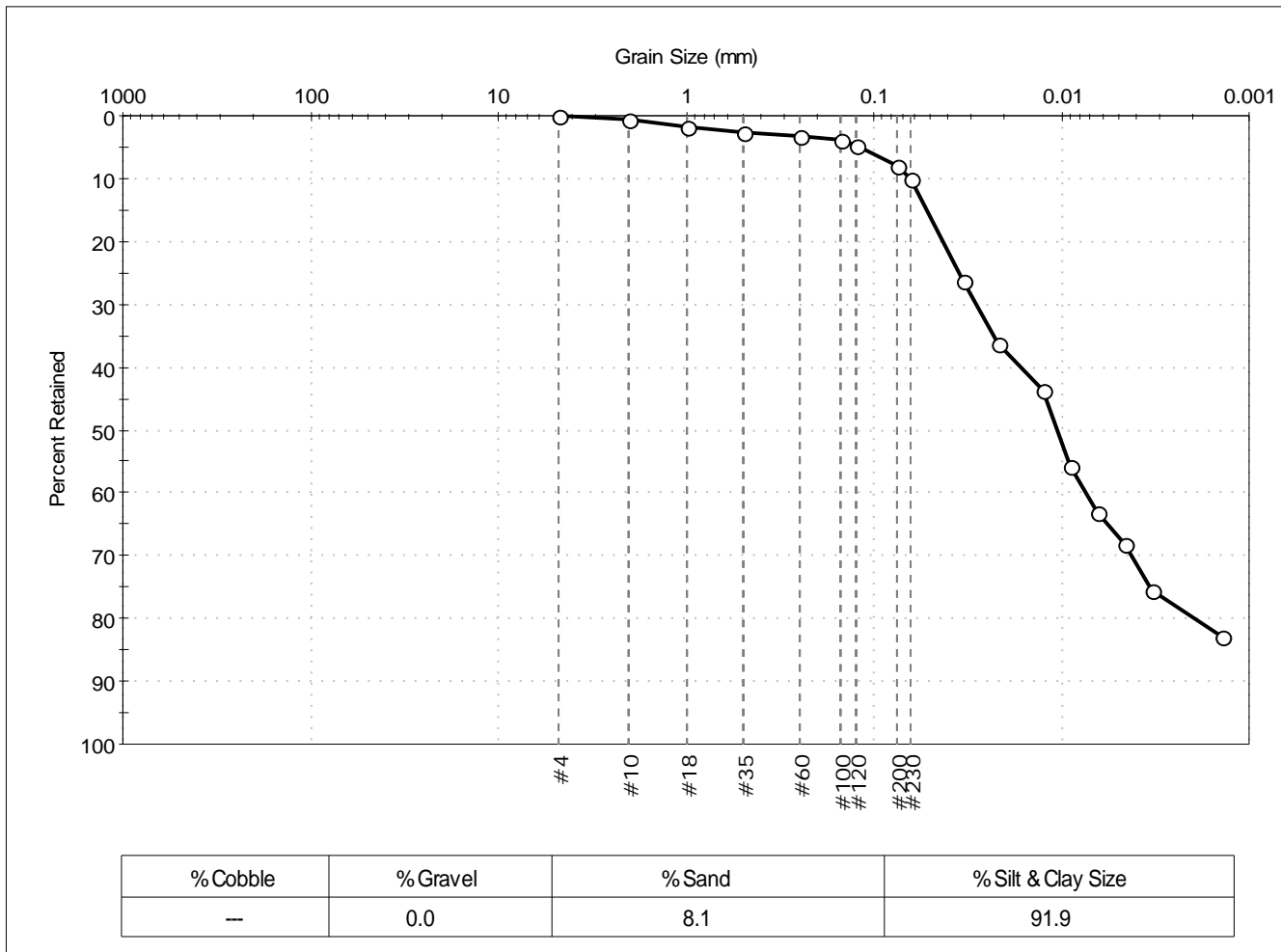
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 131-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0174  
 Test Date: 11/05/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310167  
 Test Comment: ---  
 Sample Description: Moist, very dark olive gray silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 10           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0334             | 26           |               |          |
| ---        | 0.0216             | 36           |               |          |
| ---        | 0.0126             | 44           |               |          |
| ---        | 0.0090             | 56           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0046             | 68           |               |          |
| ---        | 0.0033             | 75           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0517 mm | D <sub>30</sub> = 0.0042 mm |
| D <sub>60</sub> = 0.0163 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0106 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

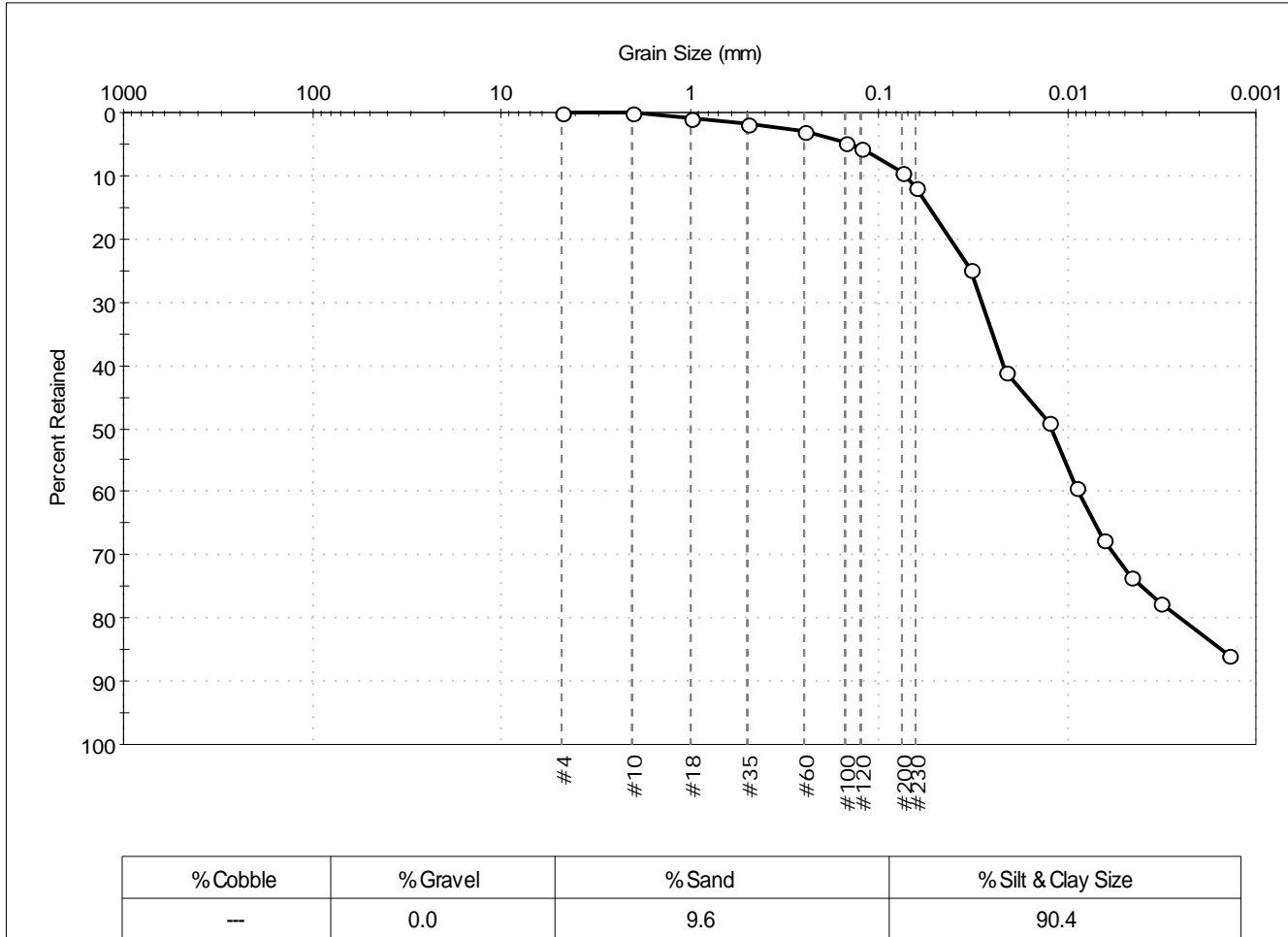
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                            | Project No: GTX-302366 |
| Boring ID: 131-14LTM                | Sample Type: bag            | Tested By: jbr                                       | Checked By: jdt        |
| Sample ID: NBH14-0175               | Test Date: 11/05/14         | Test Id: 310168                                      |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 5            |               |          |
| #120       | 0.12               | 6            |               |          |
| #200       | 0.075              | 10           |               |          |
| #230       | 0.063              | 12           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 25           |               |          |
| ---        | 0.0214             | 41           |               |          |
| ---        | 0.0125             | 49           |               |          |
| ---        | 0.0090             | 59           |               |          |
| ---        | 0.0064             | 67           |               |          |
| ---        | 0.0046             | 74           |               |          |
| ---        | 0.0033             | 78           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0535 mm | D <sub>30</sub> = 0.0056 mm |
| D <sub>60</sub> = 0.0219 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0122 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

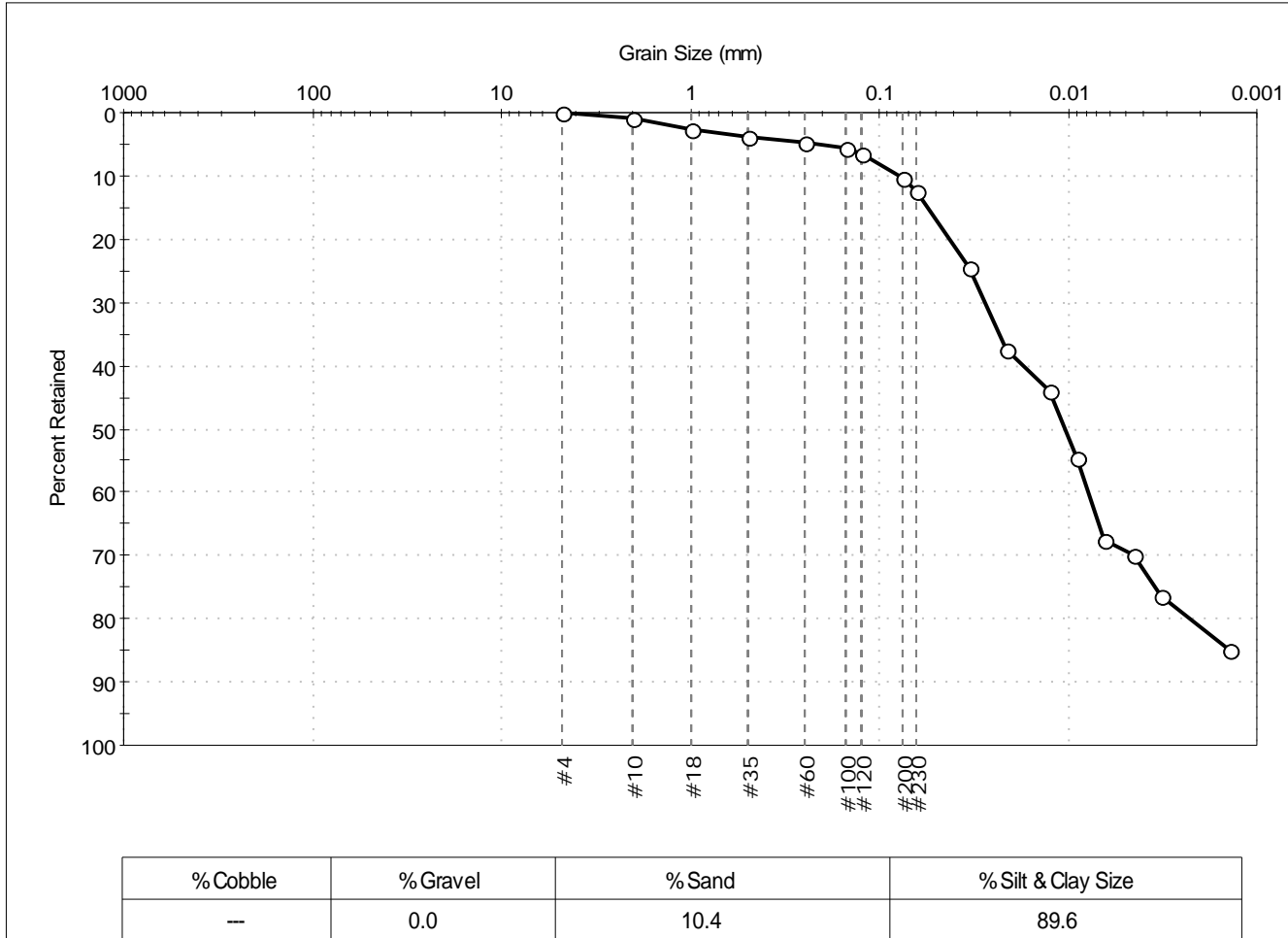
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                        |
|--|------------------------|
| Client: Battelle Memorial Institute                  | Project No: GTX-302366 |
| Project: New Bedford Harbor                          |                        |
| Location: New Bedford, MA                            |                        |
| Boring ID: 131-14LTM                                 | Sample Type: bag       |
| Sample ID: NBH14-0176                                | Test Date: 11/05/14    |
| Depth: ---   | Test Id: 310169        |
| Test Comment: ---                                    | Tested By: jbr         |
| Sample Description: Moist, very dark olive gray silt | Checked By: jdt        |
| Sample Comment: ---                                  |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 10           |               |          |
| #230       | 0.063              | 12           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 24           |               |          |
| ---        | 0.0214             | 37           |               |          |
| ---        | 0.0125             | 44           |               |          |
| ---        | 0.0090             | 55           |               |          |
| ---        | 0.0065             | 68           |               |          |
| ---        | 0.0045             | 70           |               |          |
| ---        | 0.0033             | 76           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0545 mm | D <sub>30</sub> = 0.0045 mm |
| D <sub>60</sub> = 0.0172 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0103 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

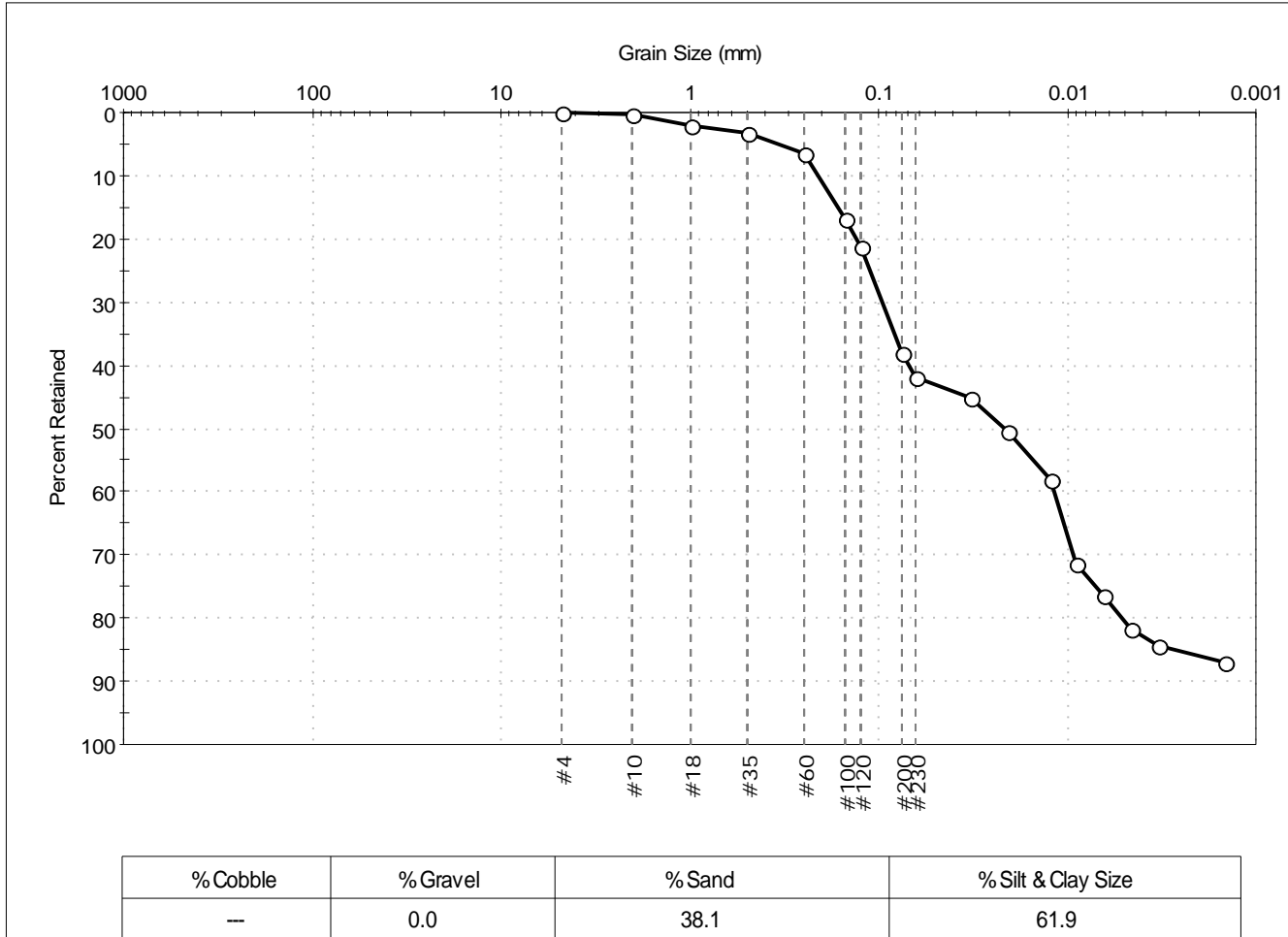
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 247-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0177                                | Test Date:   | 11/06/14   |
| Depth:              | ---                                       | Test Id:     | 310170     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown sandy silt |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 21           |               |          |
| #200       | 0.075              | 38           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0322             | 45           |               |          |
| ---        | 0.0208             | 50           |               |          |
| ---        | 0.0122             | 58           |               |          |
| ---        | 0.0090             | 71           |               |          |
| ---        | 0.0064             | 76           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1638 mm | D <sub>30</sub> = 0.0093 mm |
| D <sub>60</sub> = 0.0689 mm | D <sub>15</sub> = 0.0027 mm |
| D <sub>50</sub> = 0.0215 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

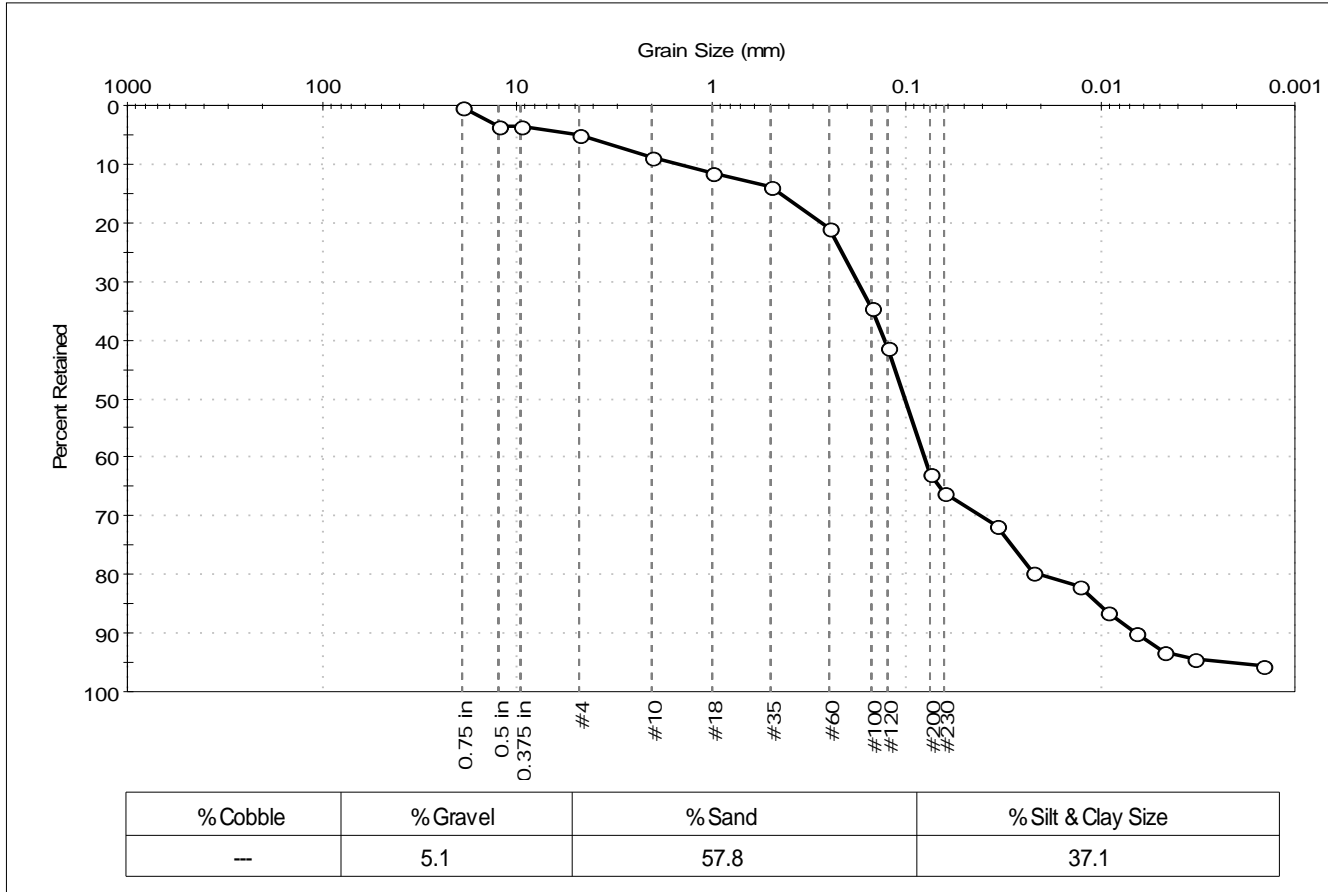
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                                | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 247-14LTM                | Sample Type: bag   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0178               | Test Date: 11/08/14  | Depth: ---                | Test Id: 310171        |
| Test Comment: ---                   | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 4            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 21           |               |          |
| #100       | 0.15               | 35           |               |          |
| #120       | 0.12               | 41           |               |          |
| #200       | 0.075              | 63           |               |          |
| #230       | 0.063              | 66           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0342             | 72           |               |          |
| ---        | 0.0221             | 80           |               |          |
| ---        | 0.0129             | 82           |               |          |
| ---        | 0.0092             | 86           |               |          |
| ---        | 0.0066             | 90           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0015             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4512 mm | D <sub>30</sub> = 0.0412 mm |
| D <sub>60</sub> = 0.1293 mm | D <sub>15</sub> = 0.0102 mm |
| D <sub>50</sub> = 0.1016 mm | D <sub>10</sub> = 0.0065 mm |
| C <sub>u</sub> = 19.892     | C <sub>c</sub> = 2.020      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

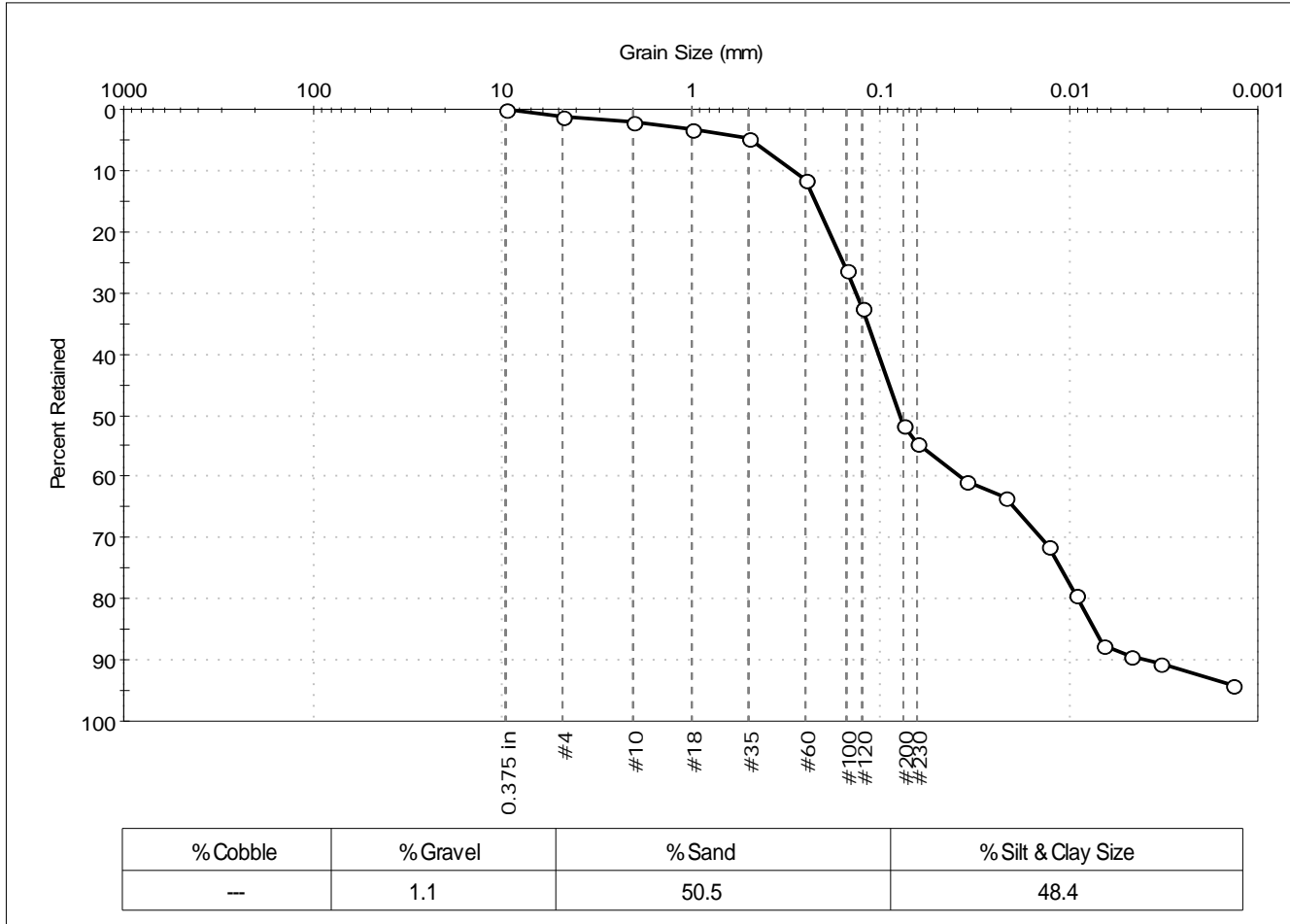
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 247-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0179                     | Test Date:   | 11/04/14   |
| Depth:              | ---                            | Test Id:     | 310172     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 11           |               |          |
| #100       | 0.15               | 26           |               |          |
| #120       | 0.12               | 32           |               |          |
| #200       | 0.075              | 52           |               |          |
| #230       | 0.063              | 54           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0353             | 61           |               |          |
| ---        | 0.0217             | 63           |               |          |
| ---        | 0.0128             | 71           |               |          |
| ---        | 0.0092             | 79           |               |          |
| ---        | 0.0066             | 88           |               |          |
| ---        | 0.0047             | 89           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2209 mm | D <sub>30</sub> = 0.0141 mm |
| D <sub>60</sub> = 0.1021 mm | D <sub>15</sub> = 0.0073 mm |
| D <sub>50</sub> = 0.0782 mm | D <sub>10</sub> = 0.0039 mm |
| C <sub>u</sub> = 26.179     | C <sub>c</sub> = 0.499      |

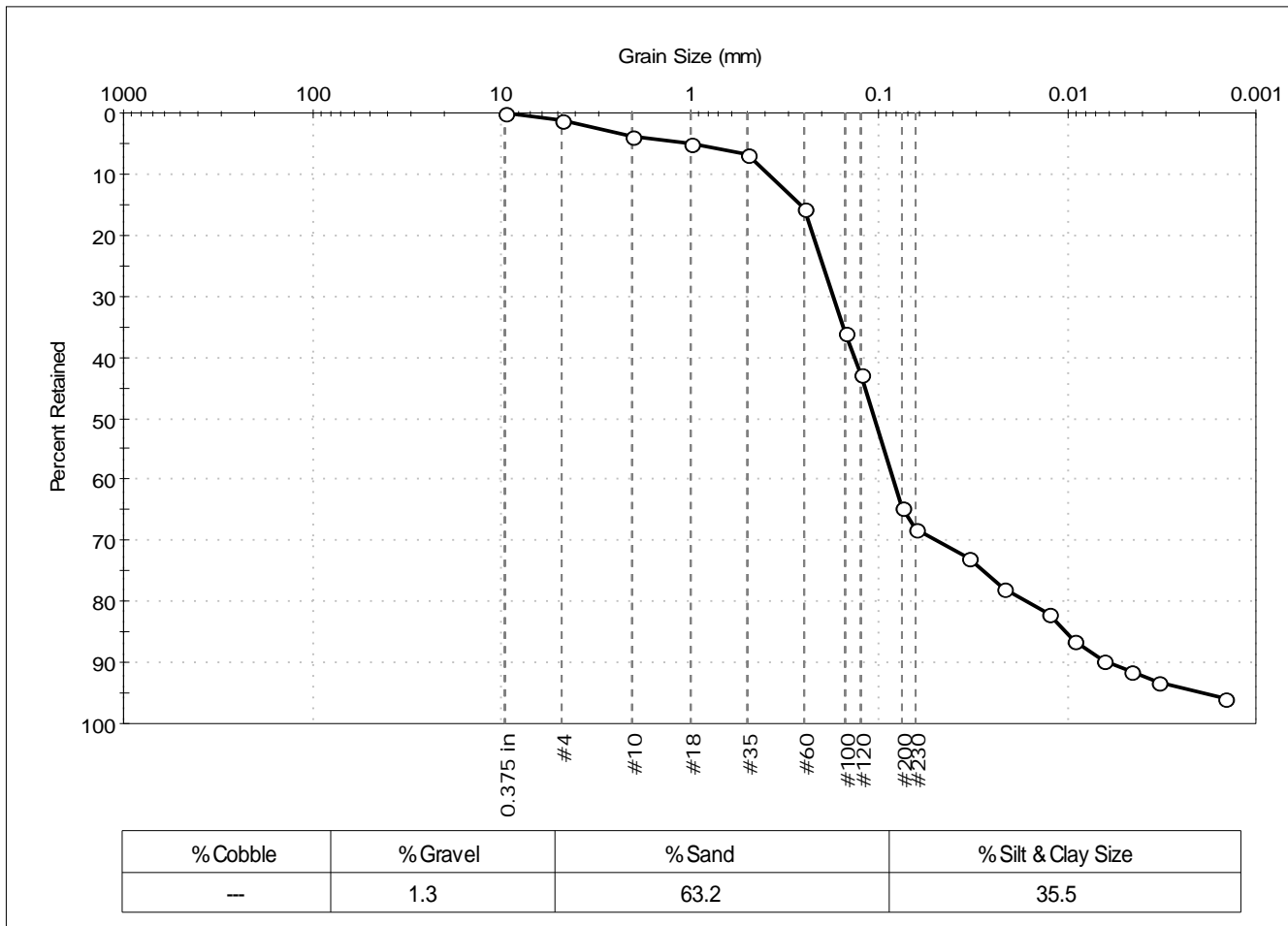
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                         | Project No: GTX-302366 |
| Project: New Bedford Harbor                                 |                        |
| Location: New Bedford, MA                                   |                        |
| Boring ID: 247-14LTM  | Sample Type: bag       |
| Sample ID: NBH14-0180                                       | Test Date: 11/18/14    |
| Depth: ---  | Test Id: 310173        |
| Test Comment: ---   | Tested By: jbr         |
| Sample Description: Moist, verdark grayish brown silty sand | Checked By: jdt        |
| Sample Comment: ---   |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 36           |               |          |
| #120       | 0.12               | 43           |               |          |
| #200       | 0.075              | 65           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 73           |               |          |
| ---        | 0.0217             | 78           |               |          |
| ---        | 0.0126             | 82           |               |          |
| ---        | 0.0091             | 86           |               |          |
| ---        | 0.0065             | 90           |               |          |
| ---        | 0.0047             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0015             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2617 mm | D <sub>30</sub> = 0.0492 mm |
| D <sub>60</sub> = 0.1349 mm | D <sub>15</sub> = 0.0102 mm |
| D <sub>50</sub> = 0.1057 mm | D <sub>10</sub> = 0.0062 mm |
| C <sub>u</sub> = 21.758     | C <sub>c</sub> = 2.894      |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

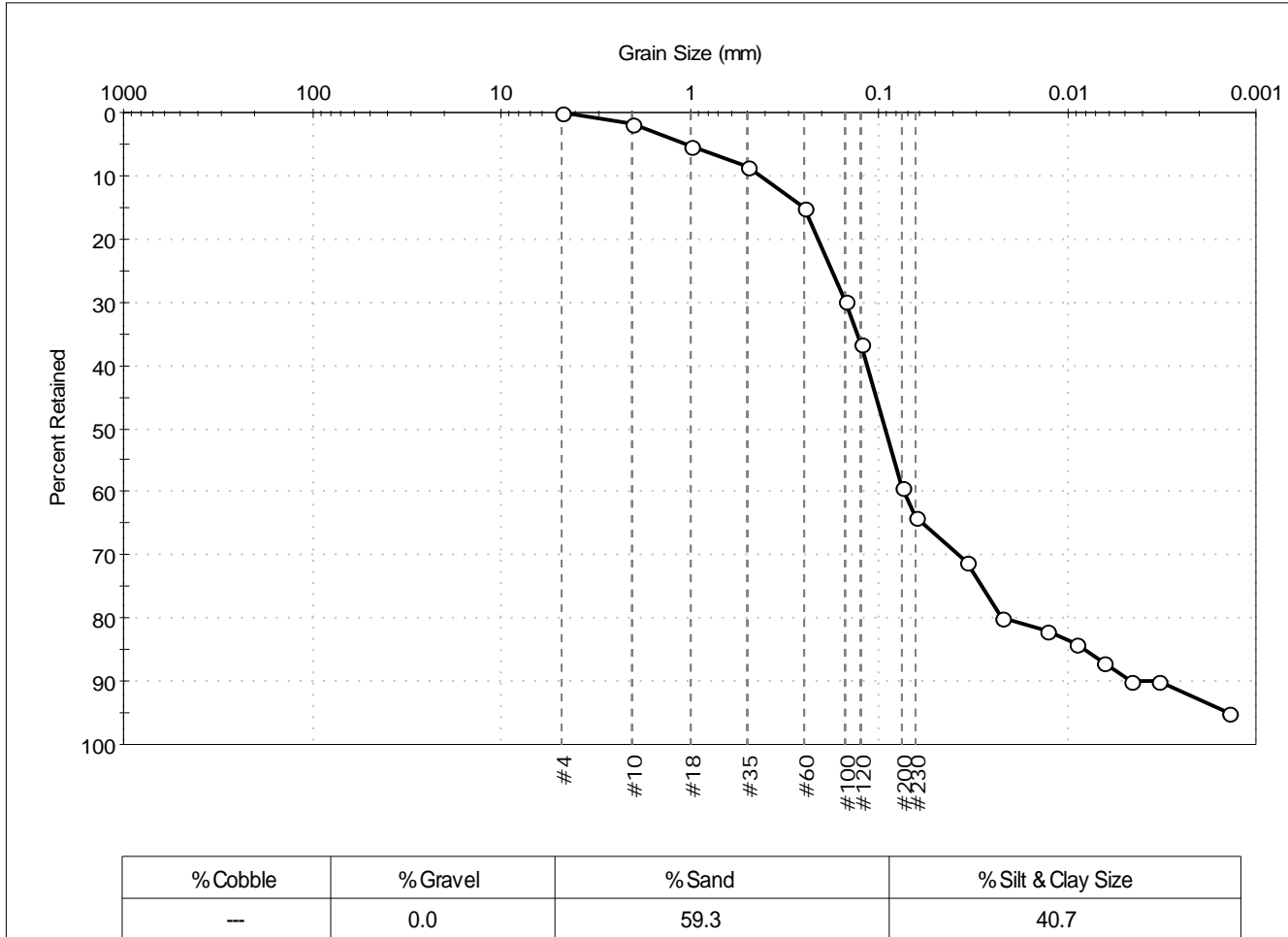
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 242-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0181                                | Test Date:   | 11/06/14   |
| Depth:              | ---                                       | Test Id:     | 310174     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | MOIST, very dark grayish brown silty sand |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 30           |               |          |
| #120       | 0.12               | 36           |               |          |
| #200       | 0.075              | 59           |               |          |
| #230       | 0.063              | 64           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0339             | 71           |               |          |
| ---        | 0.0220             | 80           |               |          |
| ---        | 0.0128             | 82           |               |          |
| ---        | 0.0091             | 84           |               |          |
| ---        | 0.0065             | 87           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2498 mm | D <sub>30</sub> = 0.0372 mm |
| D <sub>60</sub> = 0.1155 mm | D <sub>15</sub> = 0.0081 mm |
| D <sub>50</sub> = 0.0924 mm | D <sub>10</sub> = 0.0046 mm |
| C <sub>u</sub> = 25.109     | C <sub>c</sub> = 2.605      |

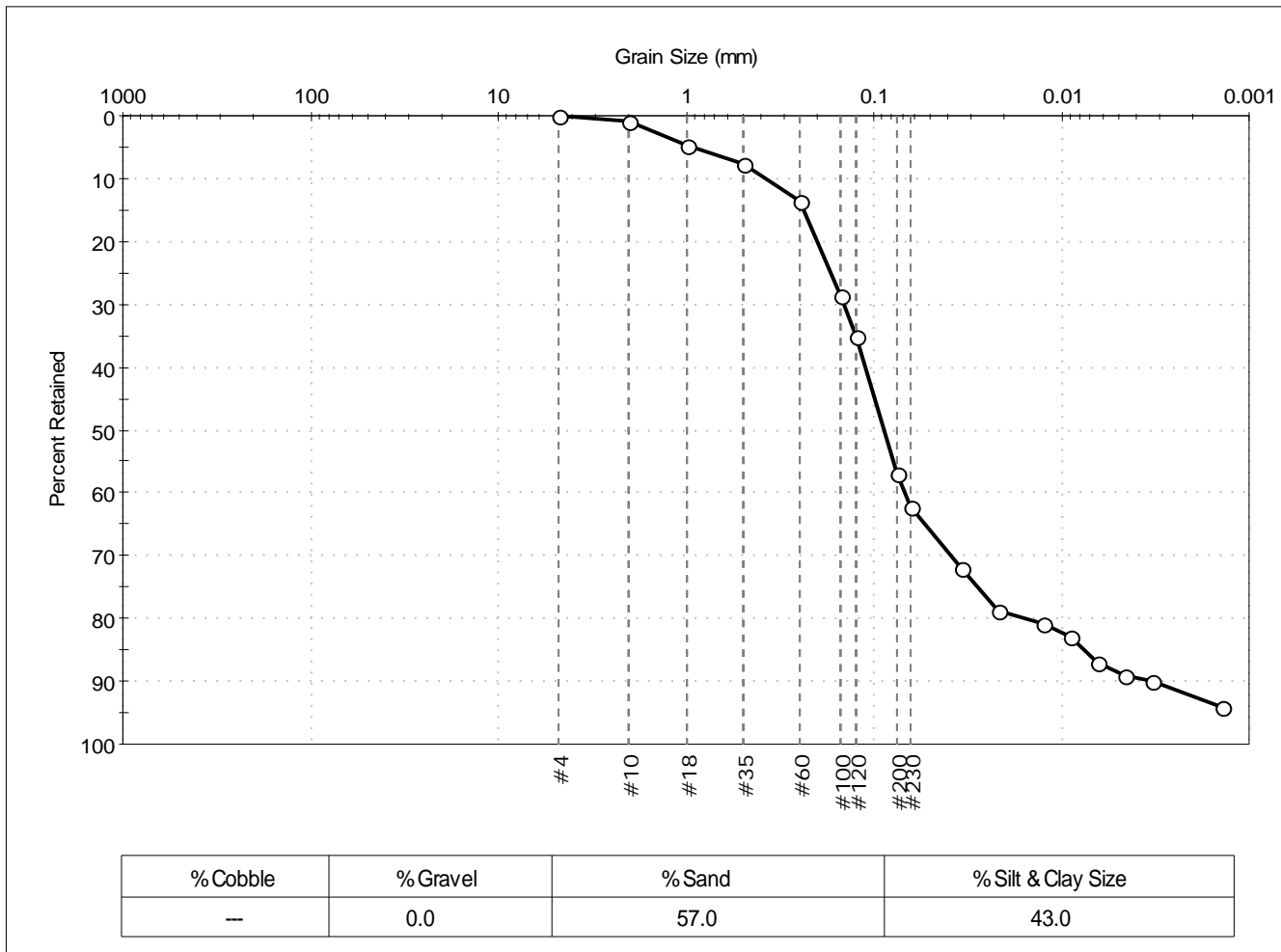
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 242-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0182               | Test Date: 11/06/14         | Test Id: 310175  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 29           |               |          |
| #120       | 0.12               | 35           |               |          |
| #200       | 0.075              | 57           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 72           |               |          |
| ---        | 0.0220             | 79           |               |          |
| ---        | 0.0127             | 81           |               |          |
| ---        | 0.0091             | 83           |               |          |
| ---        | 0.0065             | 87           |               |          |
| ---        | 0.0046             | 89           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 94           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2384 mm | D <sub>30</sub> = 0.0383 mm |
| D <sub>60</sub> = 0.1114 mm | D <sub>15</sub> = 0.0076 mm |
| D <sub>50</sub> = 0.0883 mm | D <sub>10</sub> = 0.0032 mm |
| C <sub>u</sub> = 34.812     | C <sub>c</sub> = 4.115      |

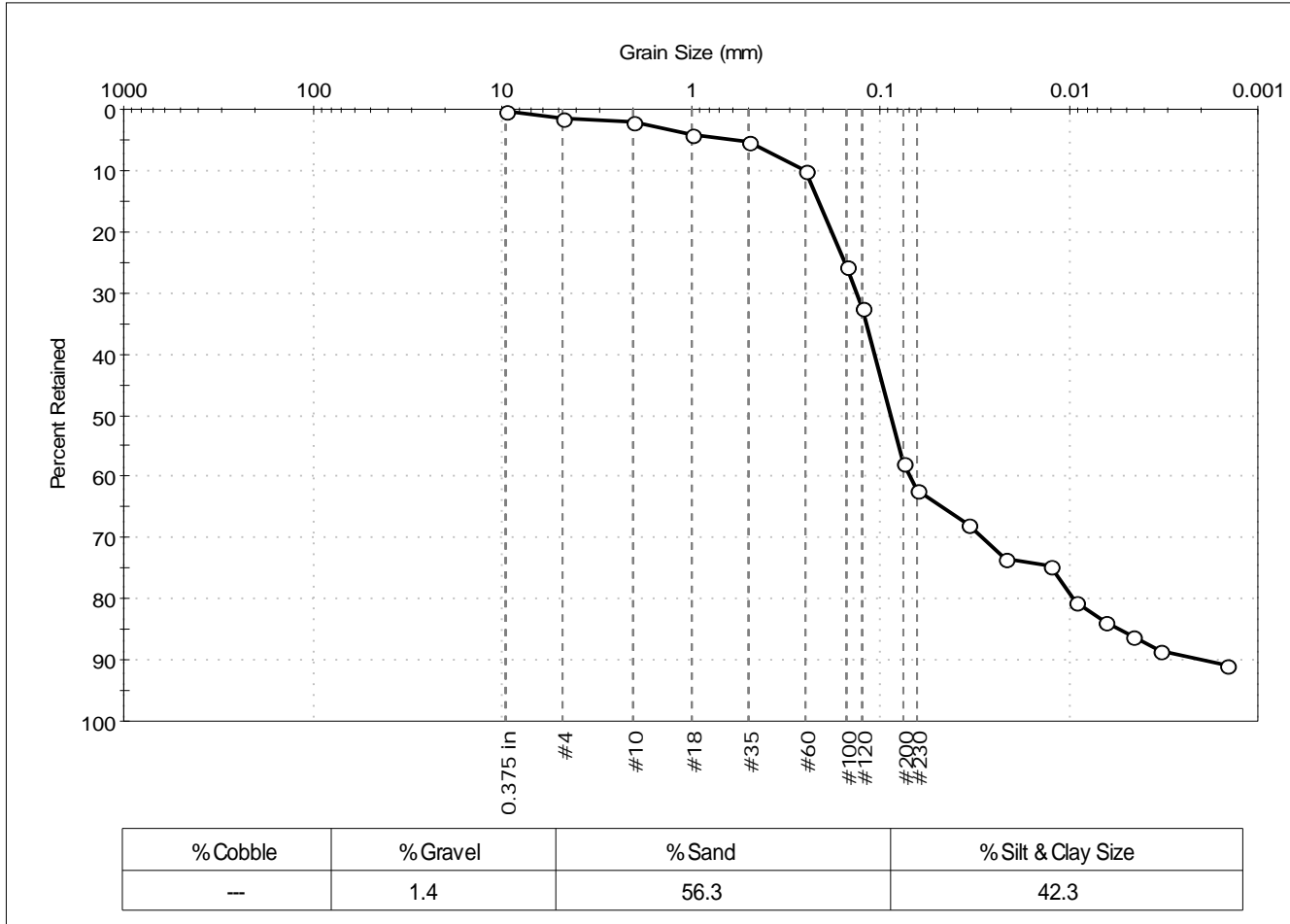
| Classification |                       |
|----------------|-----------------------|
| <u>ASTM</u>    | N/A                   |
| <u>AASHTO</u>  | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 242-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0183                                | Test Date:   | 11/07/14   |
| Depth:              | ---                                       | Test Id:     | 310176     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown silty sand |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 26           |               |          |
| #120       | 0.12               | 32           |               |          |
| #200       | 0.075              | 58           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 68           |               |          |
| ---        | 0.0217             | 74           |               |          |
| ---        | 0.0126             | 75           |               |          |
| ---        | 0.0091             | 80           |               |          |
| ---        | 0.0065             | 84           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 88           |               |          |
| ---        | 0.0015             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2122 mm | D <sub>30</sub> = 0.0285 mm |
| D <sub>60</sub> = 0.1074 mm | D <sub>15</sub> = 0.0055 mm |
| D <sub>50</sub> = 0.0877 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 56.526     | C <sub>c</sub> = 3.980      |

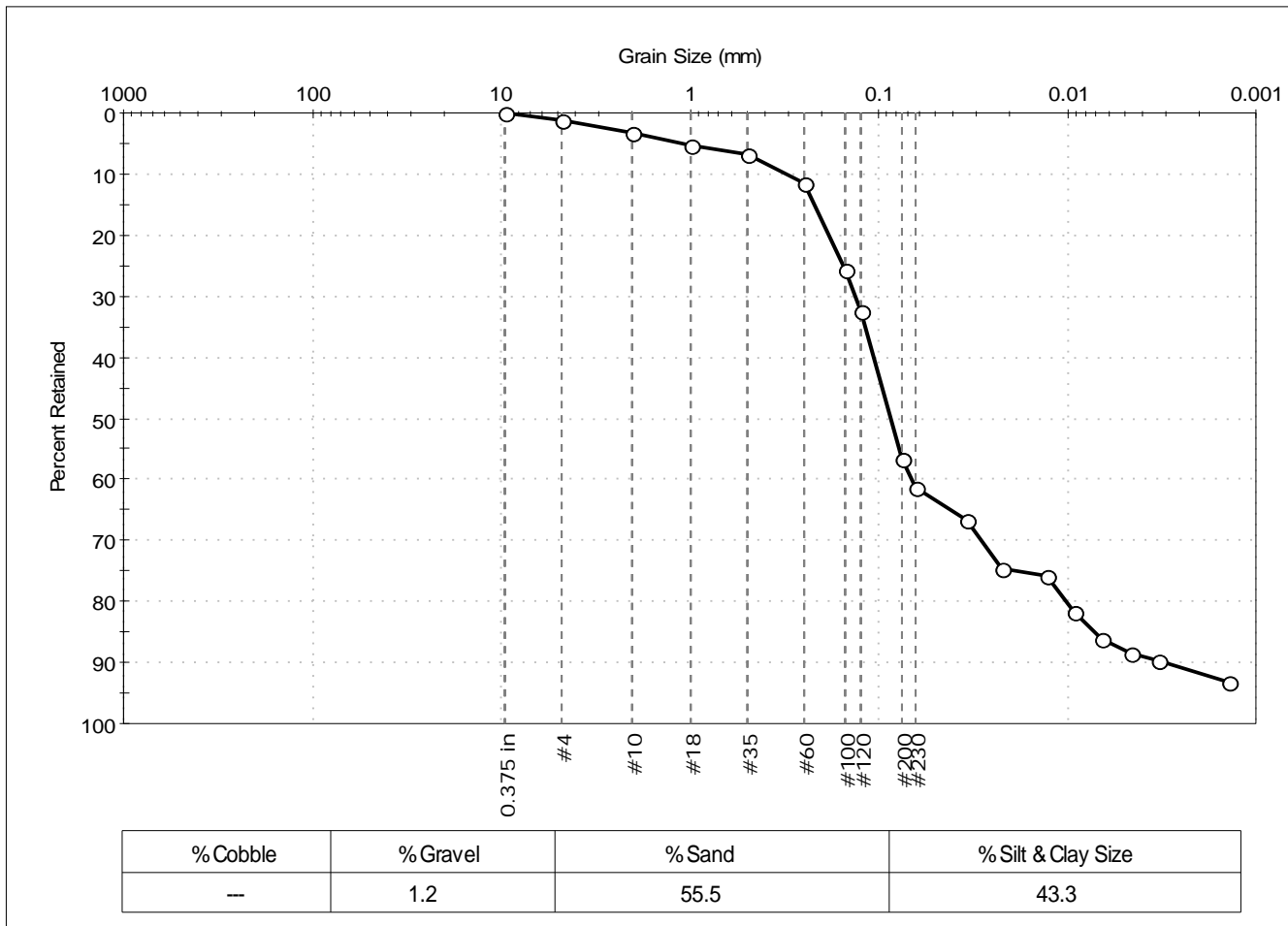
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 242-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0184                                | Test Date:   | 11/06/14   |
| Depth:              | ---                                       | Test Id:     | 310177     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown silty sand |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 26           |               |          |
| #120       | 0.12               | 32           |               |          |
| #200       | 0.075              | 57           |               |          |
| #230       | 0.063              | 61           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 67           |               |          |
| ---        | 0.0220             | 75           |               |          |
| ---        | 0.0127             | 76           |               |          |
| ---        | 0.0092             | 82           |               |          |
| ---        | 0.0065             | 86           |               |          |
| ---        | 0.0046             | 89           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2209 mm | D <sub>30</sub> = 0.0285 mm |
| D <sub>60</sub> = 0.1065 mm | D <sub>15</sub> = 0.0072 mm |
| D <sub>50</sub> = 0.0863 mm | D <sub>10</sub> = 0.0030 mm |
| C <sub>u</sub> = 35.500     | C <sub>c</sub> = 2.542      |

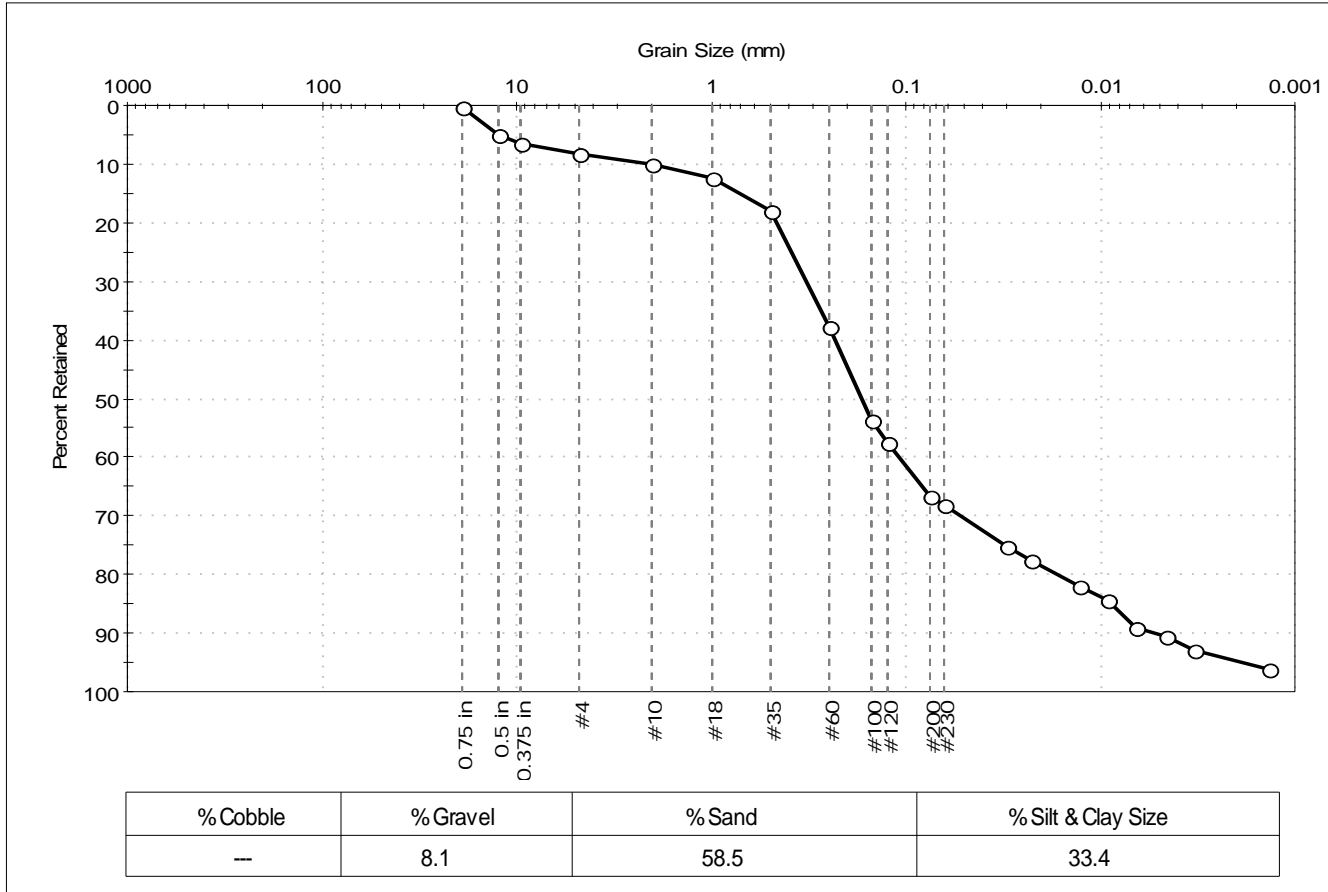
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 241-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0185   | Test Date: 11/05/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310179             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown silty sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 6            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 10           |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 38           |               |          |
| #100       | 0.15               | 54           |               |          |
| #120       | 0.12               | 57           |               |          |
| #200       | 0.075              | 67           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0306             | 75           |               |          |
| ---        | 0.0226             | 77           |               |          |
| ---        | 0.0129             | 82           |               |          |
| ---        | 0.0092             | 84           |               |          |
| ---        | 0.0066             | 89           |               |          |
| ---        | 0.0046             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7331 mm | D <sub>30</sub> = 0.0520 mm |
| D <sub>60</sub> = 0.2328 mm | D <sub>15</sub> = 0.0089 mm |
| D <sub>50</sub> = 0.1689 mm | D <sub>10</sub> = 0.0054 mm |
| C <sub>u</sub> = 43.111     | C <sub>c</sub> = 2.151      |

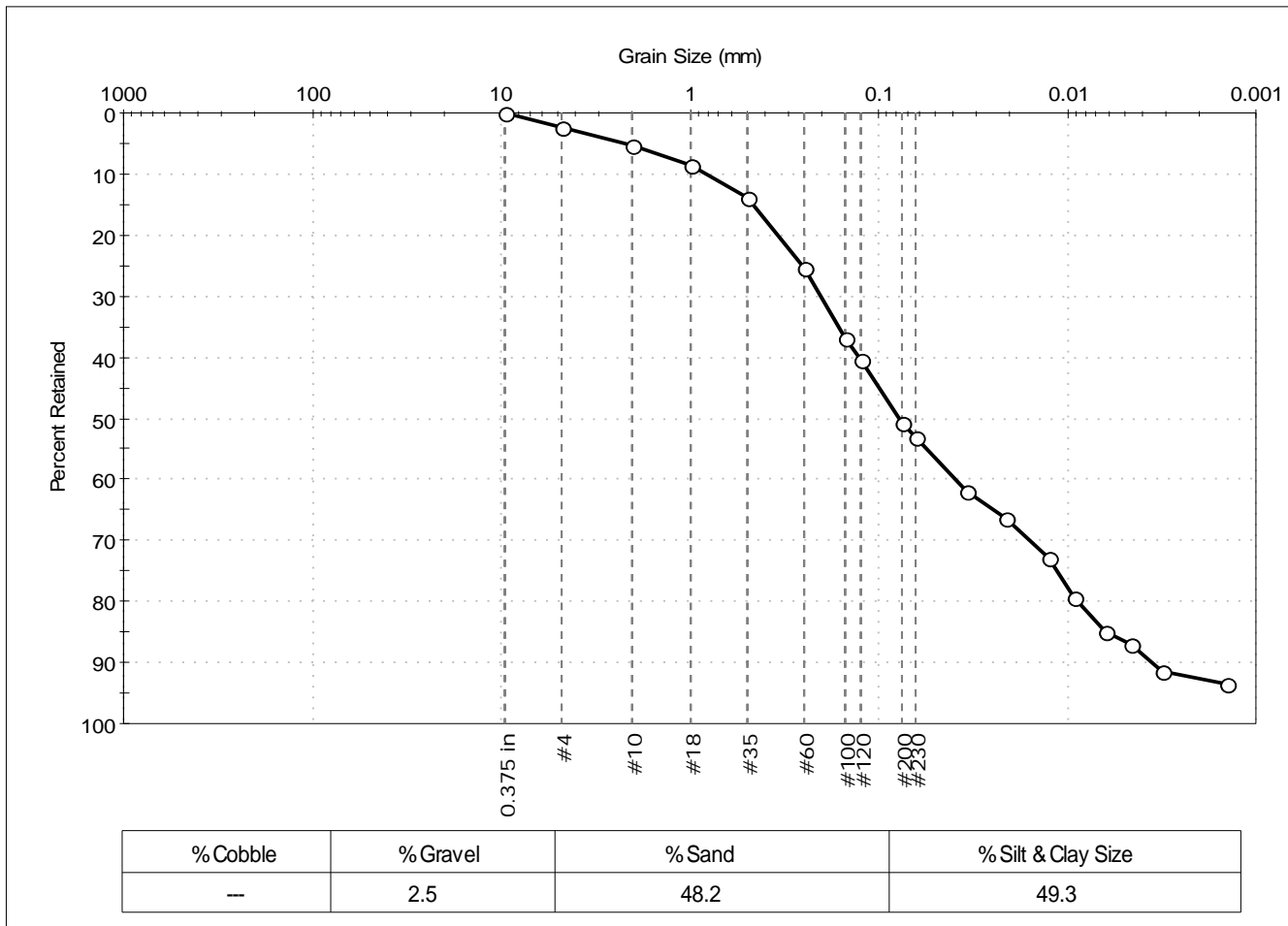
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 241-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0186                                | Test Date:   | 11/05/14   |
| Depth:              | ---                                       | Test Id:     | 310180     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown silty sand |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 37           |               |          |
| #120       | 0.12               | 40           |               |          |
| #200       | 0.075              | 51           |               |          |
| #230       | 0.063              | 53           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 62           |               |          |
| ---        | 0.0214             | 66           |               |          |
| ---        | 0.0126             | 73           |               |          |
| ---        | 0.0091             | 79           |               |          |
| ---        | 0.0063             | 85           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0032             | 91           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4657 mm | D <sub>30</sub> = 0.0160 mm |
| D <sub>60</sub> = 0.1274 mm | D <sub>15</sub> = 0.0062 mm |
| D <sub>50</sub> = 0.0777 mm | D <sub>10</sub> = 0.0036 mm |
| C <sub>u</sub> = 35.389     | C <sub>c</sub> = 0.558      |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

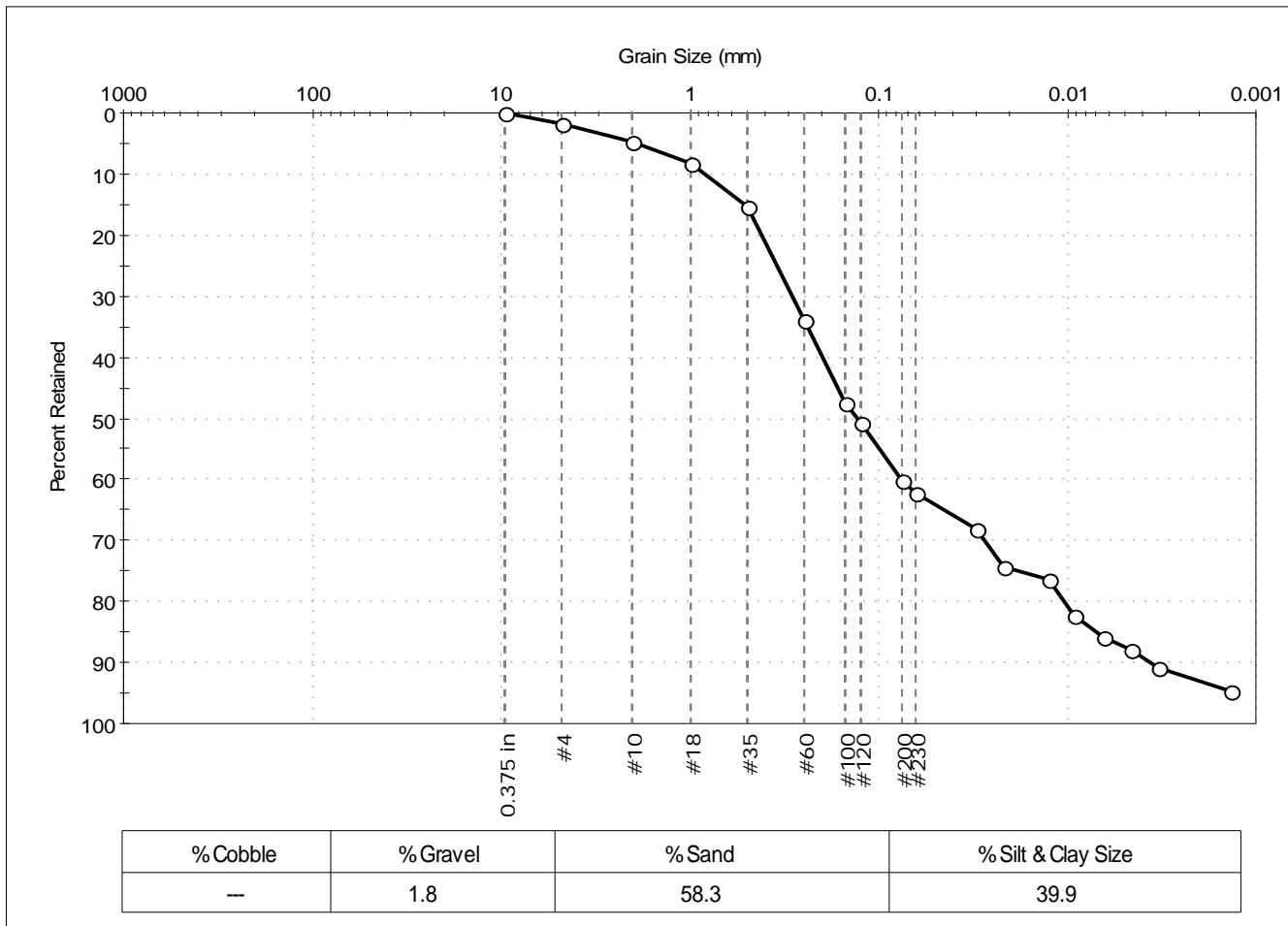
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 241-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0187  
 Test Date: 11/05/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310181  
 Test Comment: ---  
 Sample Description: Moist, very dak grayish brown silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 60           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0301             | 68           |               |          |
| ---        | 0.0219             | 74           |               |          |
| ---        | 0.0127             | 76           |               |          |
| ---        | 0.0091             | 82           |               |          |
| ---        | 0.0064             | 86           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 91           |               |          |
| ---        | 0.0014             | 95           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5222 mm | D <sub>30</sub> = 0.0274 mm |
| D <sub>60</sub> = 0.1991 mm | D <sub>15</sub> = 0.0070 mm |
| D <sub>50</sub> = 0.1304 mm | D <sub>10</sub> = 0.0036 mm |
| C <sub>u</sub> = 55.306     | C <sub>c</sub> = 1.047      |

**Classification**

|                              |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

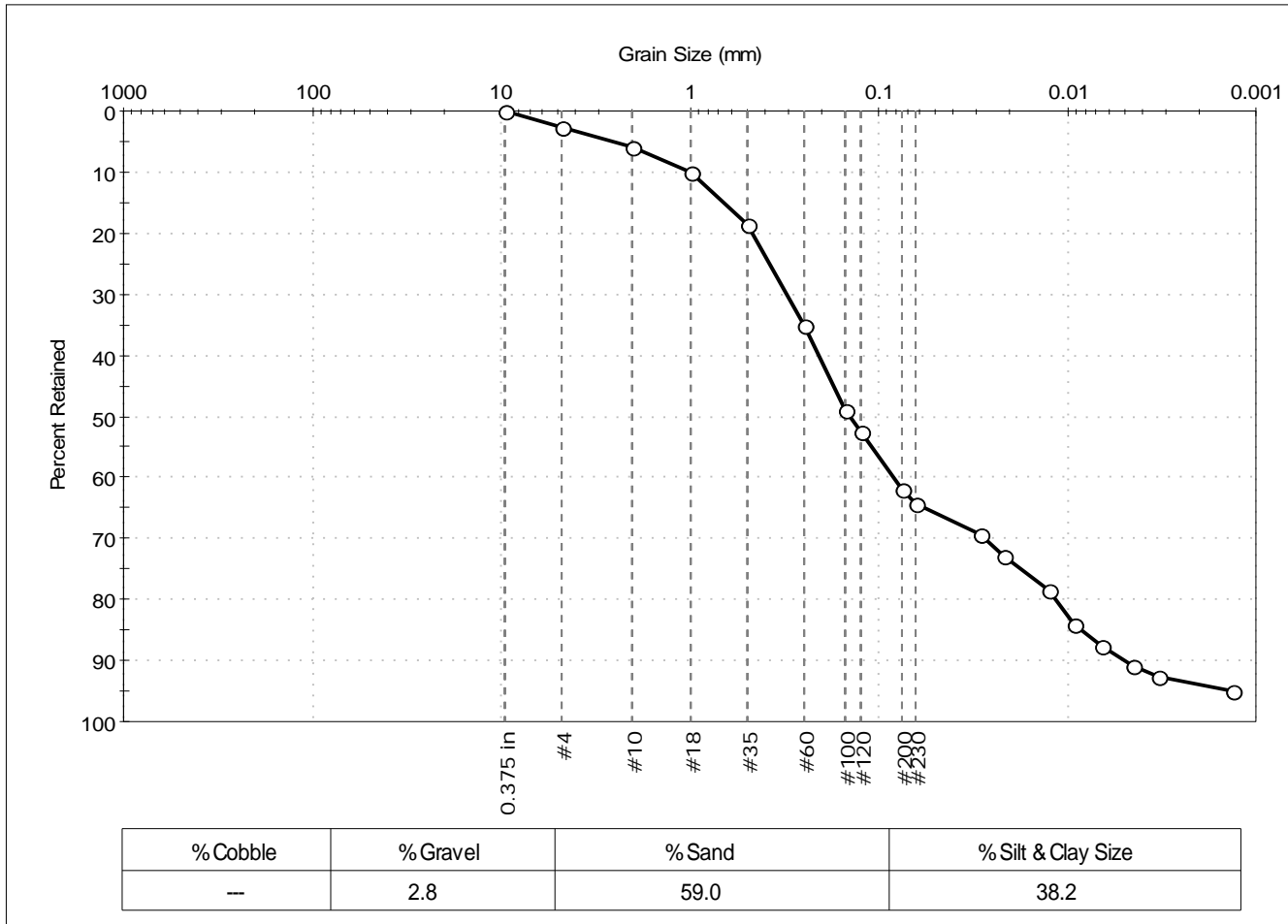
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 241-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0188                                | Test Date:   | 11/05/14   |
| Depth:              | ---                                       | Test Id:     | 310182     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown silty sand |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 35           |               |          |
| #100       | 0.15               | 49           |               |          |
| #120       | 0.12               | 52           |               |          |
| #200       | 0.075              | 62           |               |          |
| #230       | 0.063              | 64           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0288             | 69           |               |          |
| ---        | 0.0217             | 73           |               |          |
| ---        | 0.0127             | 78           |               |          |
| ---        | 0.0092             | 84           |               |          |
| ---        | 0.0065             | 88           |               |          |
| ---        | 0.0045             | 91           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0013             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6740 mm | D <sub>30</sub> = 0.0271 mm |
| D <sub>60</sub> = 0.2092 mm | D <sub>15</sub> = 0.0084 mm |
| D <sub>50</sub> = 0.1416 mm | D <sub>10</sub> = 0.0050 mm |
| C <sub>u</sub> = 41.840     | C <sub>c</sub> = 0.702      |

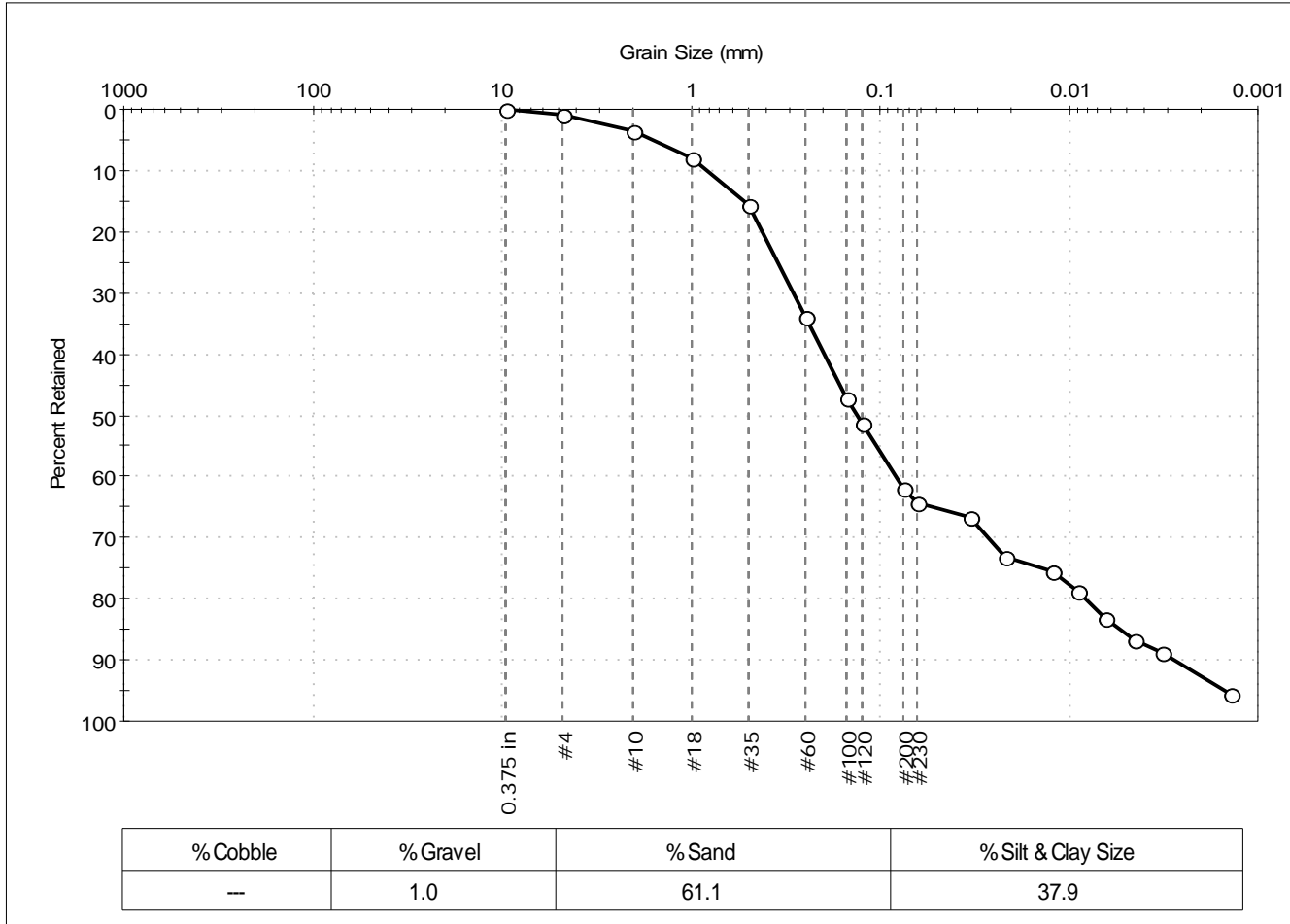
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute            |              |            |
| Project:            | New Bedford Harbor                     |              |            |
| Location:           | New Bedford, MA                        | Project No:  | GTX-302366 |
| Boring ID:          | 241-14LTM                              | Sample Type: | bag        |
| Sample ID:          | NBH14-0188DUP                          | Test Date:   | 11/14/14   |
| Depth:              | ---                                    | Test Id:     | 313930     |
| Test Comment:       | ---                                    |              |            |
| Sample Description: | Moist, very dark olive gray silty sand |              |            |
| Sample Comment:     | ---                                    |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 62           |               |          |
| #230       | 0.063              | 64           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 67           |               |          |
| ---        | 0.0216             | 73           |               |          |
| ---        | 0.0124             | 75           |               |          |
| ---        | 0.0090             | 79           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0045             | 87           |               |          |
| ---        | 0.0032             | 89           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5335 mm | D <sub>30</sub> = 0.0268 mm |
| D <sub>60</sub> = 0.1989 mm | D <sub>15</sub> = 0.0054 mm |
| D <sub>50</sub> = 0.1326 mm | D <sub>10</sub> = 0.0028 mm |
| C <sub>u</sub> = 71.036     | C <sub>c</sub> = 1.290      |

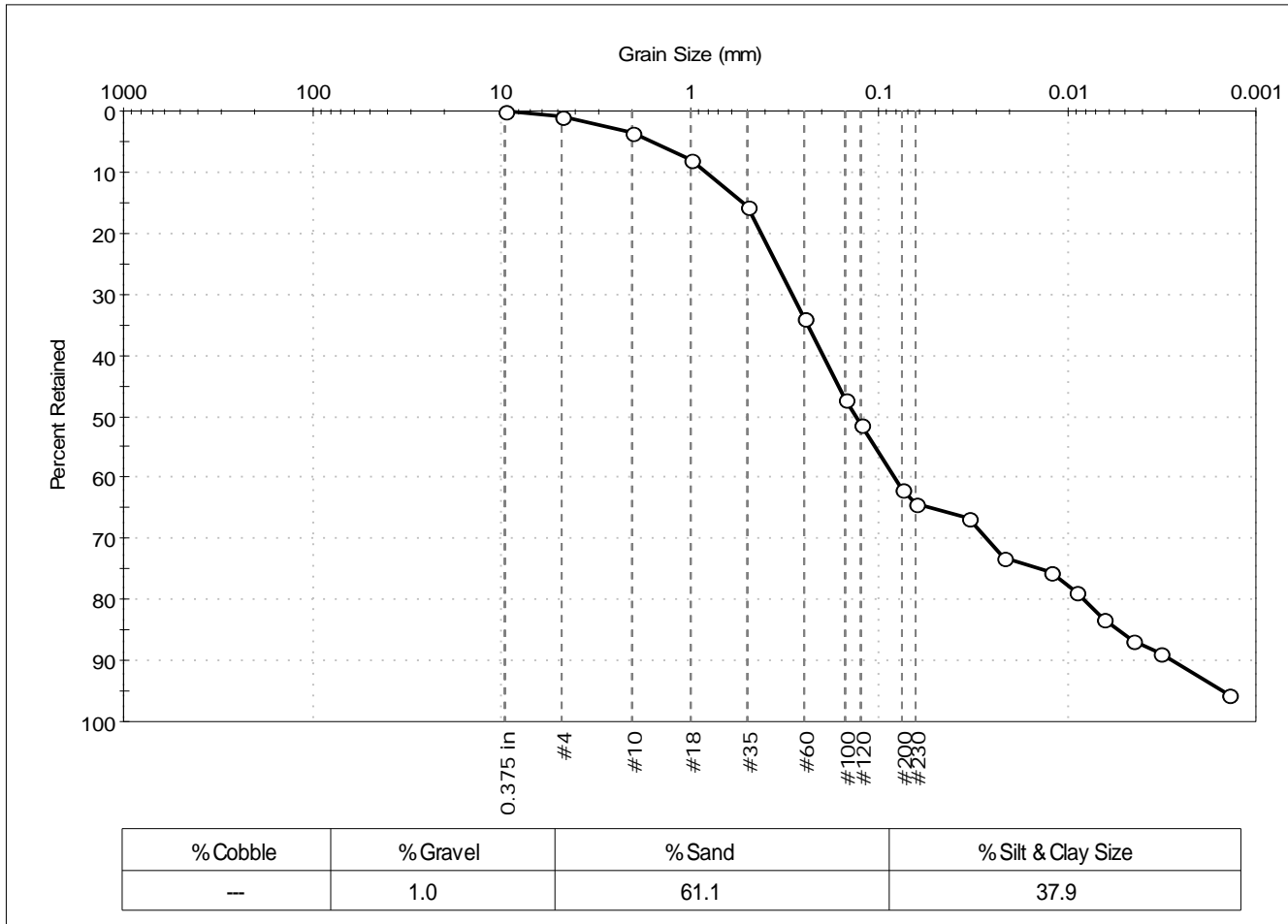
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 241-14LTM                                       | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0188DUP                                   | Test Date: 11/14/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 313930             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 51           |               |          |
| #200       | 0.075              | 62           |               |          |
| #230       | 0.063              | 64           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 67           |               |          |
| ---        | 0.0216             | 73           |               |          |
| ---        | 0.0124             | 75           |               |          |
| ---        | 0.0090             | 79           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0045             | 87           |               |          |
| ---        | 0.0032             | 89           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5335 mm | D <sub>30</sub> = 0.0268 mm |
| D <sub>60</sub> = 0.1989 mm | D <sub>15</sub> = 0.0054 mm |
| D <sub>50</sub> = 0.1326 mm | D <sub>10</sub> = 0.0028 mm |
| C <sub>u</sub> = 71.036     | C <sub>c</sub> = 1.290      |

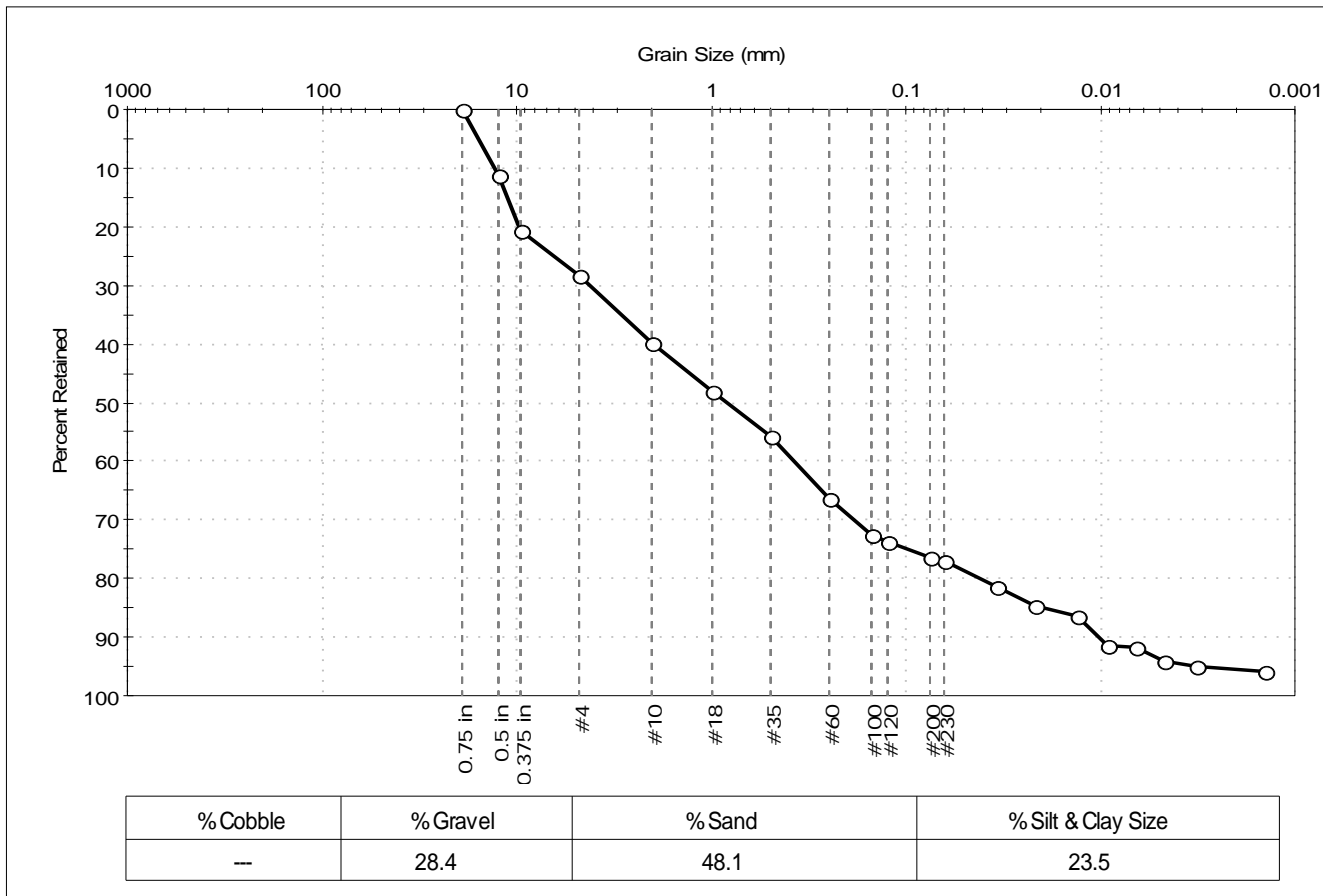
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute                           |              |            |
| Project:            | New Bedford Harbor                                    |              |            |
| Location:           | New Bedford, MA                                       | Project No:  | GTX-302366 |
| Boring ID:          | 237-14LTM   | Sample Type: | bag        |
| Sample ID:          | NBH14-0190  | Test Date:   | 11/05/14   |
| Depth:              | ---   | Checked By:  | jdt        |
|                     |   | Test Id:     | 310184     |
| Test Comment:       | ---   |              |            |
| Sample Description: | Moist, very dark grayish brown silty sand with gravel |              |            |
| Sample Comment:     | ---   |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 11           |               |          |
| 0.375 in   | 9.50               | 21           |               |          |
| #4         | 4.75               | 28           |               |          |
| #10        | 2.00               | 40           |               |          |
| #18        | 1.00               | 48           |               |          |
| #35        | 0.50               | 56           |               |          |
| #60        | 0.25               | 66           |               |          |
| #100       | 0.15               | 72           |               |          |
| #120       | 0.12               | 74           |               |          |
| #200       | 0.075              | 77           |               |          |
| #230       | 0.063              | 77           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 81           |               |          |
| ---        | 0.0217             | 85           |               |          |
| ---        | 0.0130             | 86           |               |          |
| ---        | 0.0093             | 91           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0032             | 95           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 11.2004 mm | D <sub>30</sub> = 0.1838 mm |
| D <sub>60</sub> = 1.9513 mm  | D <sub>15</sub> = 0.0200 mm |
| D <sub>50</sub> = 0.8438 mm  | D <sub>10</sub> = 0.0102 mm |
| C <sub>u</sub> = 191.304     | C <sub>c</sub> = 1.697      |

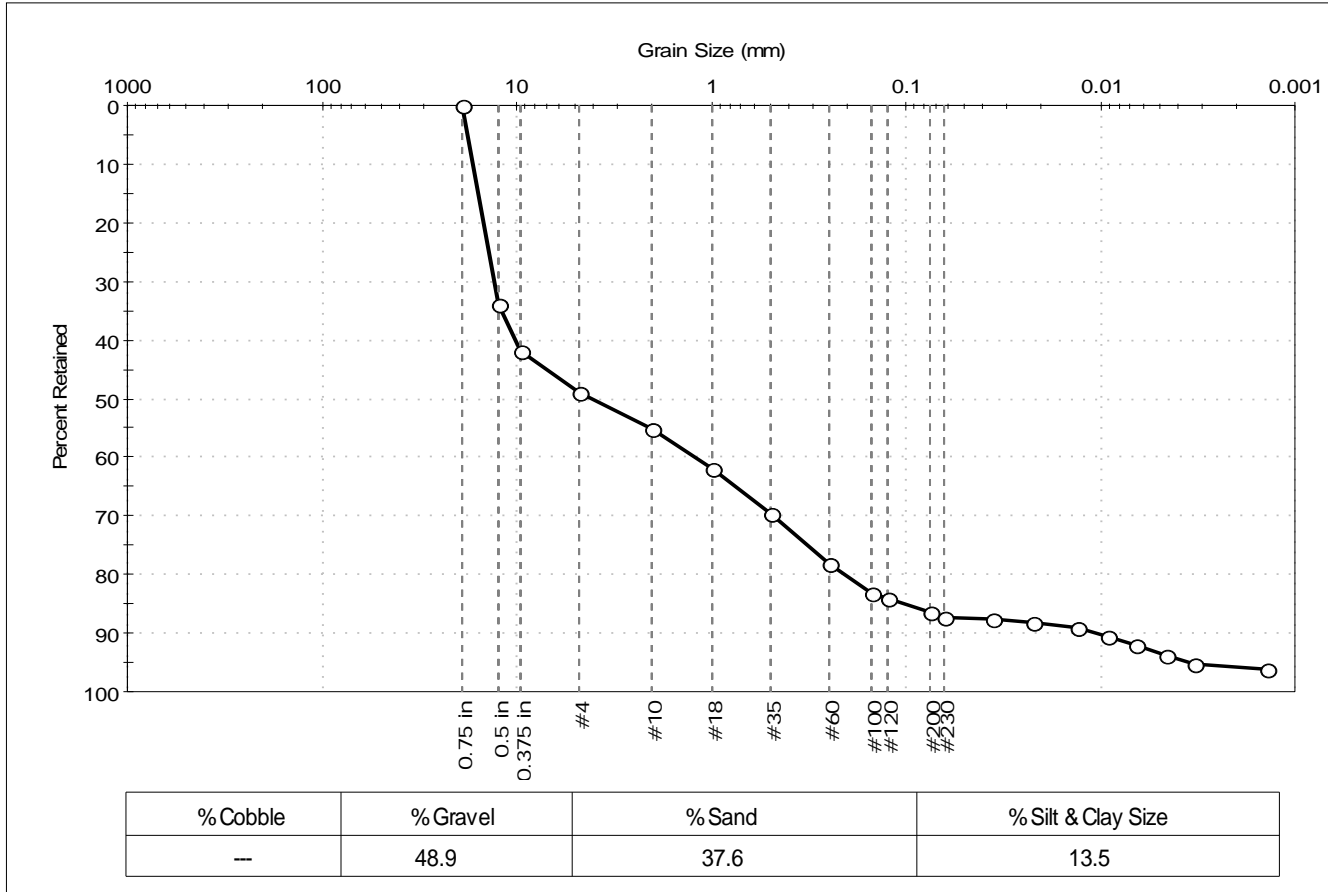
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                              | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 237-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0191  | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310185             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark gray silty gravel with sand |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 34           |               |          |
| 0.375 in   | 9.50               | 42           |               |          |
| #4         | 4.75               | 49           |               |          |
| #10        | 2.00               | 55           |               |          |
| #18        | 1.00               | 62           |               |          |
| #35        | 0.50               | 70           |               |          |
| #60        | 0.25               | 78           |               |          |
| #100       | 0.15               | 83           |               |          |
| #120       | 0.12               | 84           |               |          |
| #200       | 0.075              | 86           |               |          |
| #230       | 0.063              | 87           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0354             | 87           |               |          |
| ---        | 0.0225             | 88           |               |          |
| ---        | 0.0130             | 89           |               |          |
| ---        | 0.0092             | 91           |               |          |
| ---        | 0.0066             | 92           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 15.7926 mm | D <sub>30</sub> = 0.4890 mm |
| D <sub>60</sub> = 10.1486 mm | D <sub>15</sub> = 0.1031 mm |
| D <sub>50</sub> = 4.0936 mm  | D <sub>10</sub> = 0.0105 mm |
| C <sub>u</sub> = 966.533     | C <sub>c</sub> = 2.244      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-a (0)) |

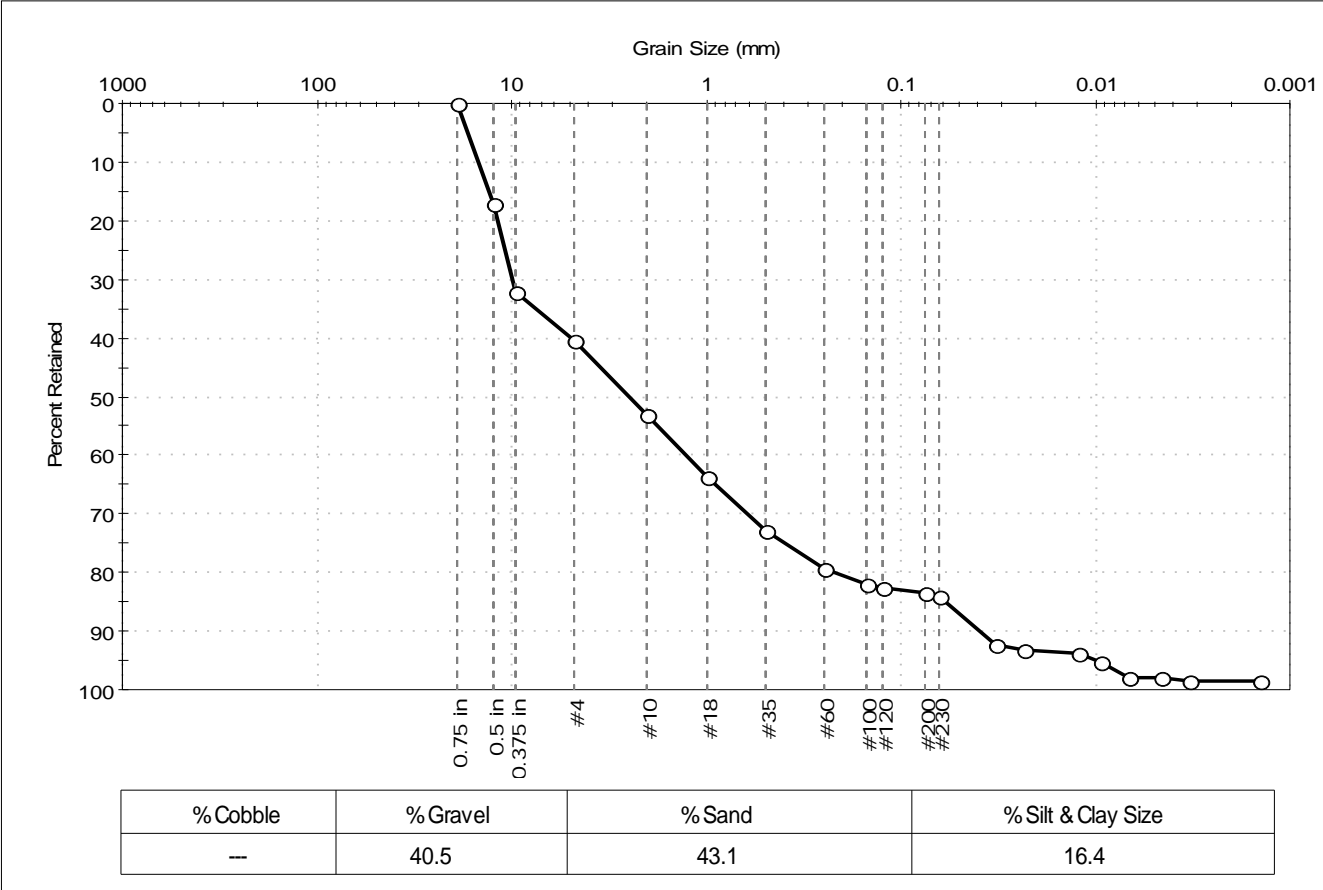
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ANGULAR         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                       | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 237-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0192   | Test Date: 11/05/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310186             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 17           |               |          |
| 0.375 in   | 9.50               | 32           |               |          |
| #4         | 4.75               | 40           |               |          |
| #10        | 2.00               | 53           |               |          |
| #18        | 1.00               | 64           |               |          |
| #35        | 0.50               | 73           |               |          |
| #60        | 0.25               | 79           |               |          |
| #100       | 0.15               | 82           |               |          |
| #120       | 0.12               | 83           |               |          |
| #200       | 0.075              | 84           |               |          |
| #230       | 0.063              | 84           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 92           |               |          |
| ---        | 0.0233             | 93           |               |          |
| ---        | 0.0121             | 94           |               |          |
| ---        | 0.0094             | 95           |               |          |
| ---        | 0.0067             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 13.1312 mm | D <sub>30</sub> = 0.6259 mm |
| D <sub>60</sub> = 4.9456 mm  | D <sub>15</sub> = 0.0579 mm |
| D <sub>50</sub> = 2.4704 mm  | D <sub>10</sub> = 0.0393 mm |
| C <sub>u</sub> = 125.842     | C <sub>c</sub> = 2.016      |

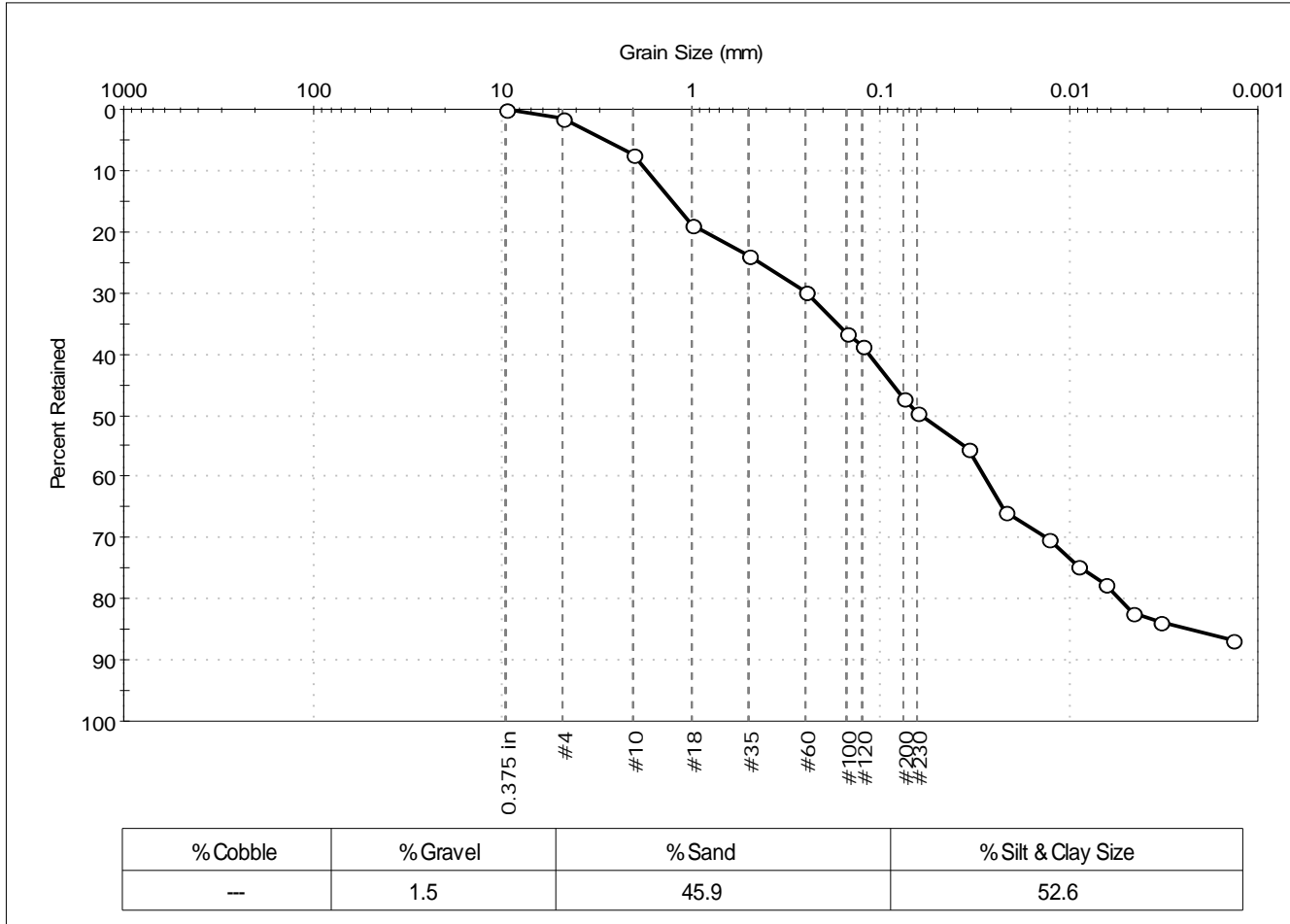
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 236-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0193   | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310187             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown sandy silt |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 19           |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 36           |               |          |
| #120       | 0.12               | 39           |               |          |
| #200       | 0.075              | 47           |               |          |
| #230       | 0.063              | 49           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 55           |               |          |
| ---        | 0.0218             | 66           |               |          |
| ---        | 0.0127             | 70           |               |          |
| ---        | 0.0091             | 75           |               |          |
| ---        | 0.0064             | 78           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.2687 mm | D <sub>30</sub> = 0.0131 mm |
| D <sub>60</sub> = 0.1162 mm | D <sub>15</sub> = 0.0022 mm |
| D <sub>50</sub> = 0.0594 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

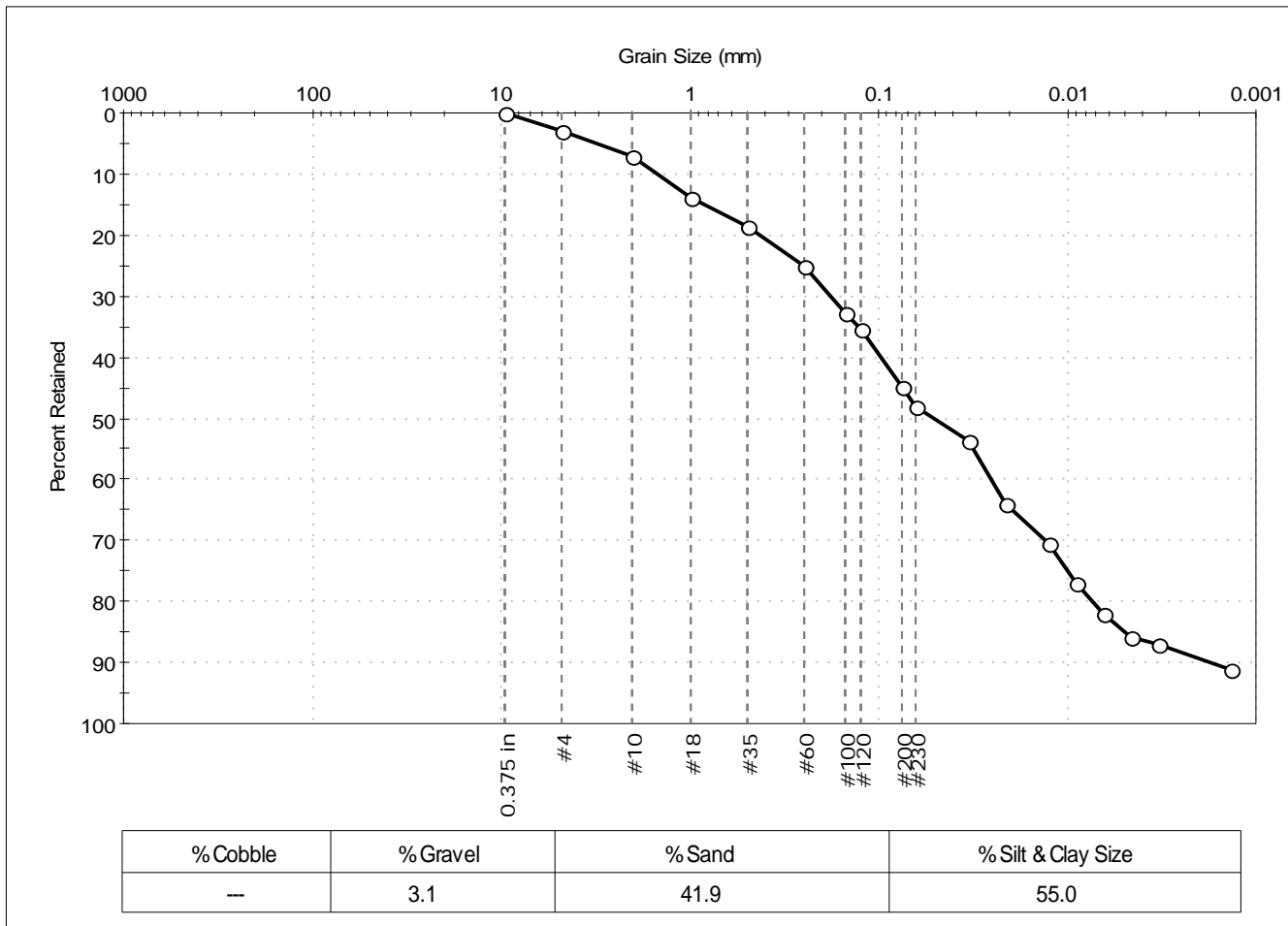
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 236-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0194                                | Test Date:   | 11/06/14   |
| Depth:              | ---                                       | Test Id:     | 310188     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown sandy silt |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 33           |               |          |
| #120       | 0.12               | 35           |               |          |
| #200       | 0.075              | 45           |               |          |
| #230       | 0.063              | 48           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 54           |               |          |
| ---        | 0.0214             | 64           |               |          |
| ---        | 0.0126             | 70           |               |          |
| ---        | 0.0090             | 77           |               |          |
| ---        | 0.0065             | 82           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8371 mm | D <sub>30</sub> = 0.0131 mm |
| D <sub>60</sub> = 0.0976 mm | D <sub>15</sub> = 0.0050 mm |
| D <sub>50</sub> = 0.0505 mm | D <sub>10</sub> = 0.0017 mm |
| C <sub>u</sub> = 57.412     | C <sub>c</sub> = 1.034      |

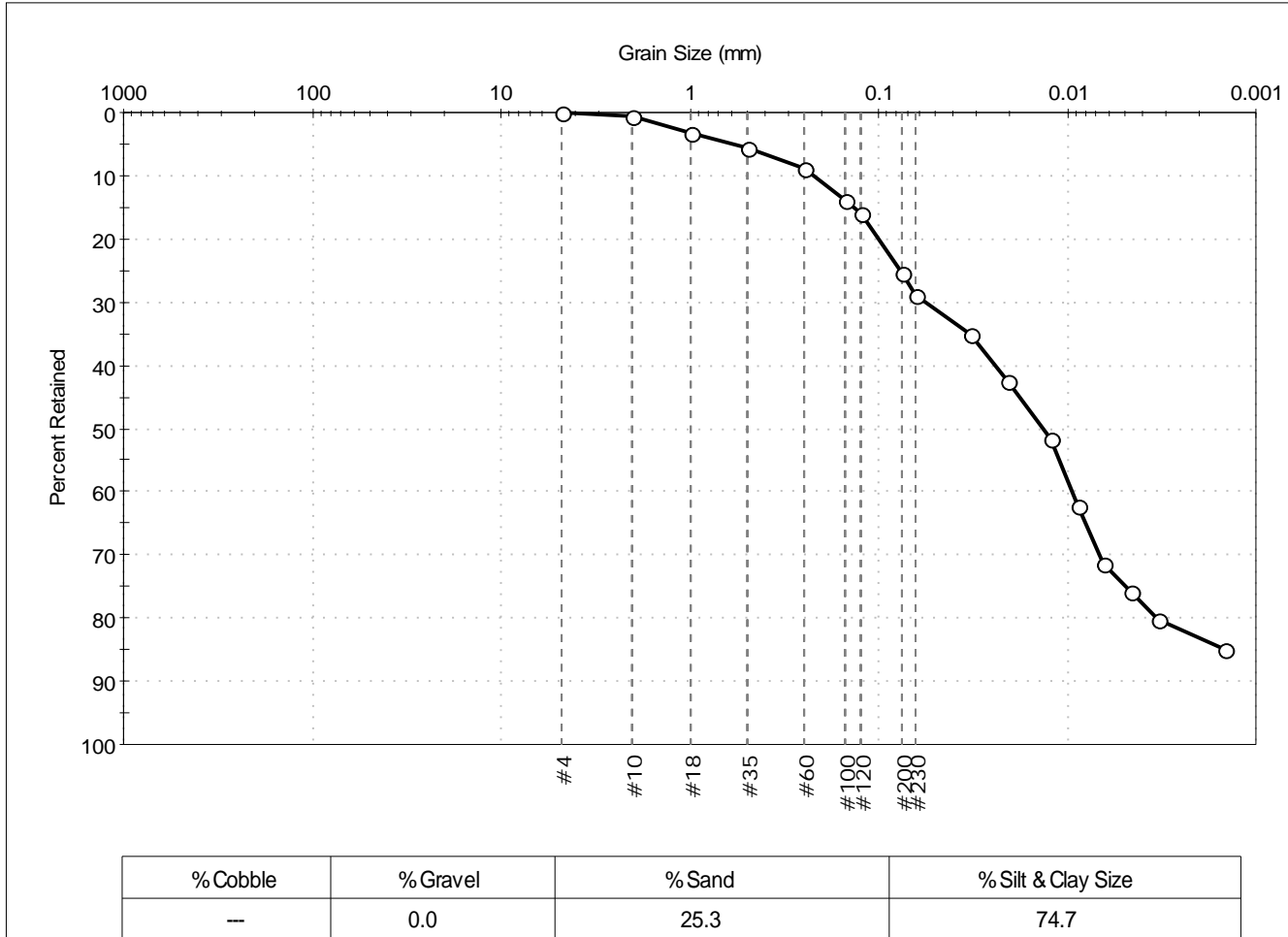
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 236-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0195   | Test Date: 11/06/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310189             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark grayish brown silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 9            |               |          |
| #100       | 0.15               | 14           |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 25           |               |          |
| #230       | 0.063              | 29           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0324             | 35           |               |          |
| ---        | 0.0208             | 43           |               |          |
| ---        | 0.0122             | 52           |               |          |
| ---        | 0.0089             | 62           |               |          |
| ---        | 0.0064             | 71           |               |          |
| ---        | 0.0046             | 76           |               |          |
| ---        | 0.0033             | 80           |               |          |
| ---        | 0.0015             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1343 mm | D <sub>30</sub> = 0.0067 mm |
| D <sub>60</sub> = 0.0241 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0135 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

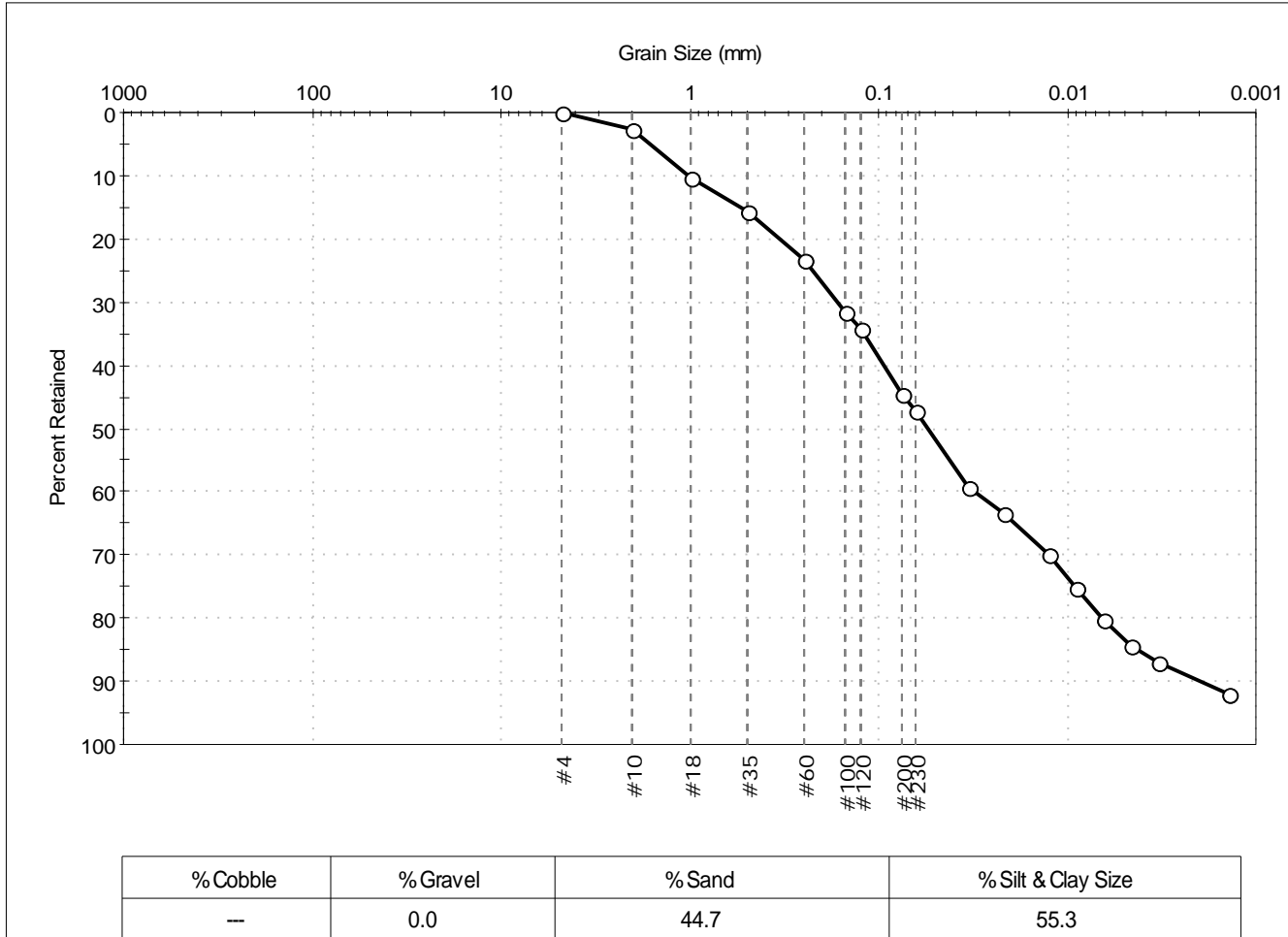
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 236-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0196                                | Test Date:   | 11/05/14   |
| Depth:              | ---                                       | Test Id:     | 310190     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, very dark grayish brown sandy silt |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 31           |               |          |
| #120       | 0.12               | 34           |               |          |
| #200       | 0.075              | 45           |               |          |
| #230       | 0.063              | 47           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0337             | 59           |               |          |
| ---        | 0.0215             | 63           |               |          |
| ---        | 0.0126             | 70           |               |          |
| ---        | 0.0090             | 75           |               |          |
| ---        | 0.0064             | 80           |               |          |
| ---        | 0.0046             | 84           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 92           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5359 mm | D <sub>30</sub> = 0.0125 mm |
| D <sub>60</sub> = 0.0944 mm | D <sub>15</sub> = 0.0042 mm |
| D <sub>50</sub> = 0.0546 mm | D <sub>10</sub> = 0.0020 mm |
| C <sub>u</sub> = 47.200     | C <sub>c</sub> = 0.828      |

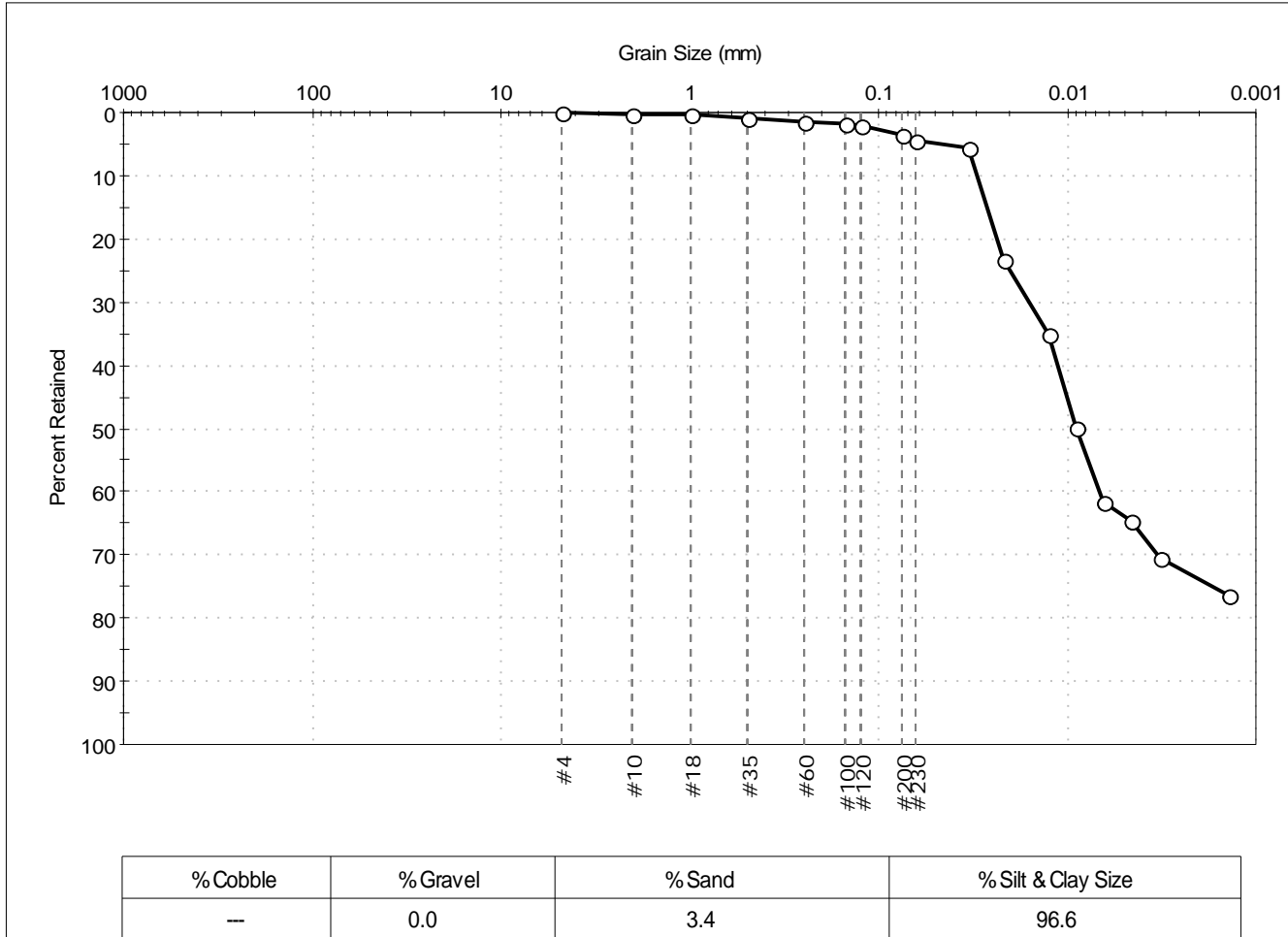
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 231-14LTM                          | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0197                         | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---                                    | Test Id: 310191             |                           |                        |
| Test Comment: ---                             |                             |                           |                        |
| Sample Description: Wet, dark olive gray silt |                             |                           |                        |
| Sample Comment: ---                           |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0335             | 6            |               |          |
| ---        | 0.0215             | 23           |               |          |
| ---        | 0.0126             | 35           |               |          |
| ---        | 0.0090             | 50           |               |          |
| ---        | 0.0065             | 62           |               |          |
| ---        | 0.0046             | 65           |               |          |
| ---        | 0.0033             | 70           |               |          |
| ---        | 0.0014             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0264 mm | D <sub>30</sub> = 0.0033 mm |
| D <sub>60</sub> = 0.0113 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0090 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

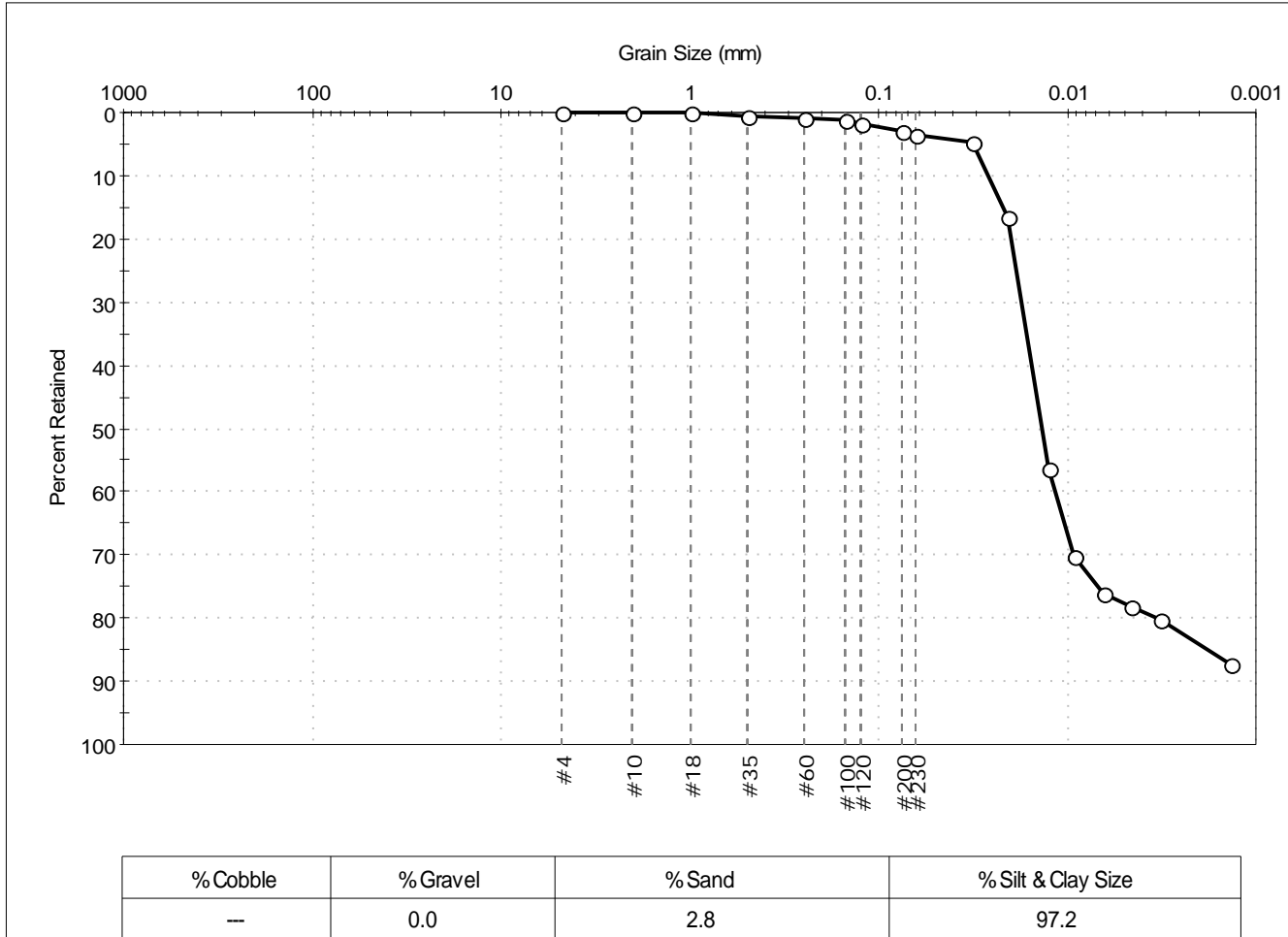
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 231-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0198               | Test Date: 11/12/14         | Test Id: 310192                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 5            |               |          |
| ---        | 0.0205             | 17           |               |          |
| ---        | 0.0126             | 56           |               |          |
| ---        | 0.0091             | 70           |               |          |
| ---        | 0.0065             | 76           |               |          |
| ---        | 0.0046             | 78           |               |          |
| ---        | 0.0033             | 80           |               |          |
| ---        | 0.0014             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0218 mm | D <sub>30</sub> = 0.0091 mm |
| D <sub>60</sub> = 0.0154 mm | D <sub>15</sub> = 0.0018 mm |
| D <sub>50</sub> = 0.0136 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

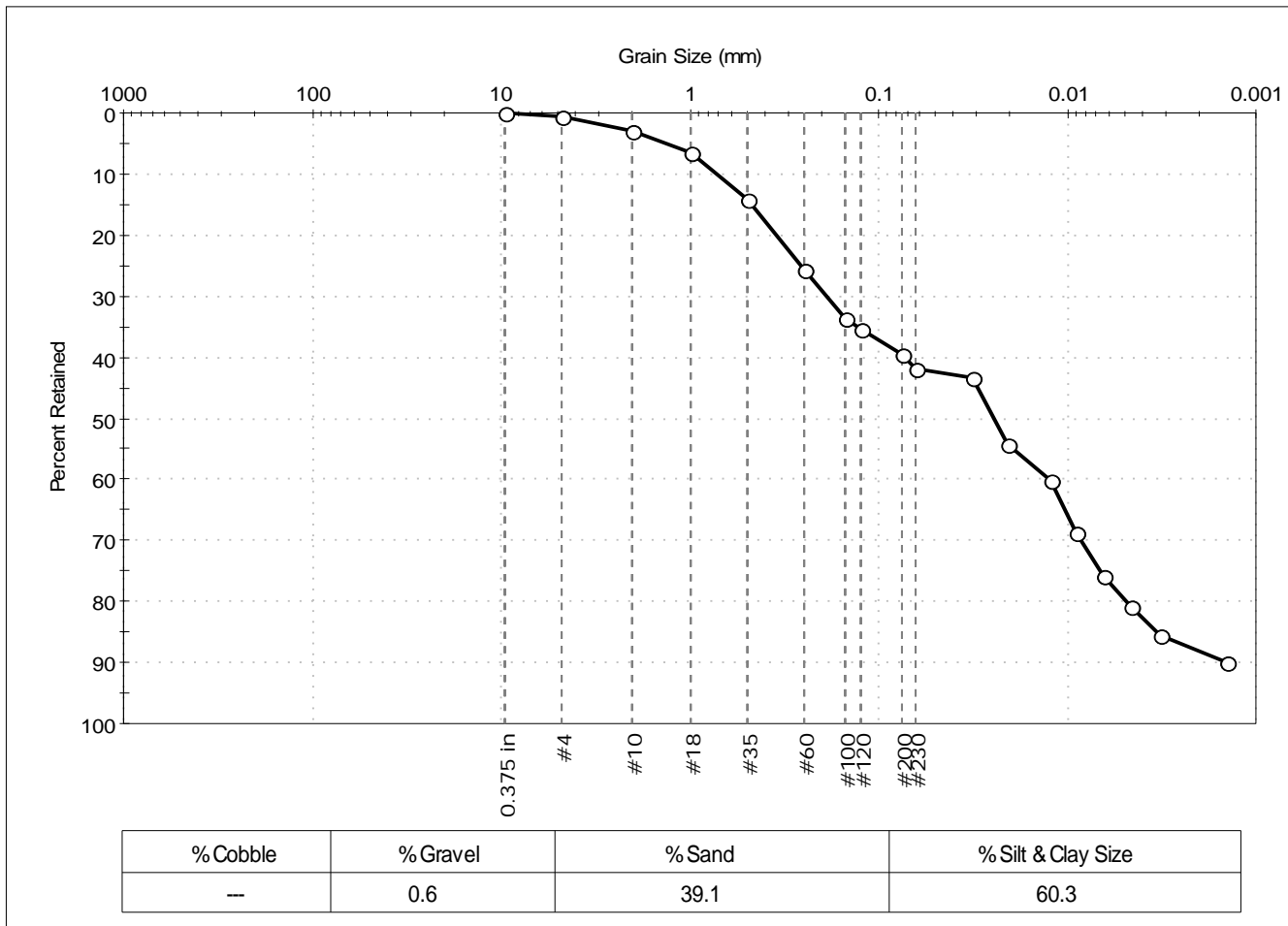
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 230-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0199                               | Test Date: 11/17/14    |
| Depth: ---  | Test Id: 310195        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Wet, dark olive gray sandy silt | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 33           |               |          |
| #120       | 0.12               | 35           |               |          |
| #200       | 0.075              | 40           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0321             | 43           |               |          |
| ---        | 0.0209             | 54           |               |          |
| ---        | 0.0123             | 60           |               |          |
| ---        | 0.0089             | 69           |               |          |
| ---        | 0.0064             | 76           |               |          |
| ---        | 0.0046             | 81           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4775 mm | D <sub>30</sub> = 0.0083 mm |
| D <sub>60</sub> = 0.0731 mm | D <sub>15</sub> = 0.0034 mm |
| D <sub>50</sub> = 0.0246 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

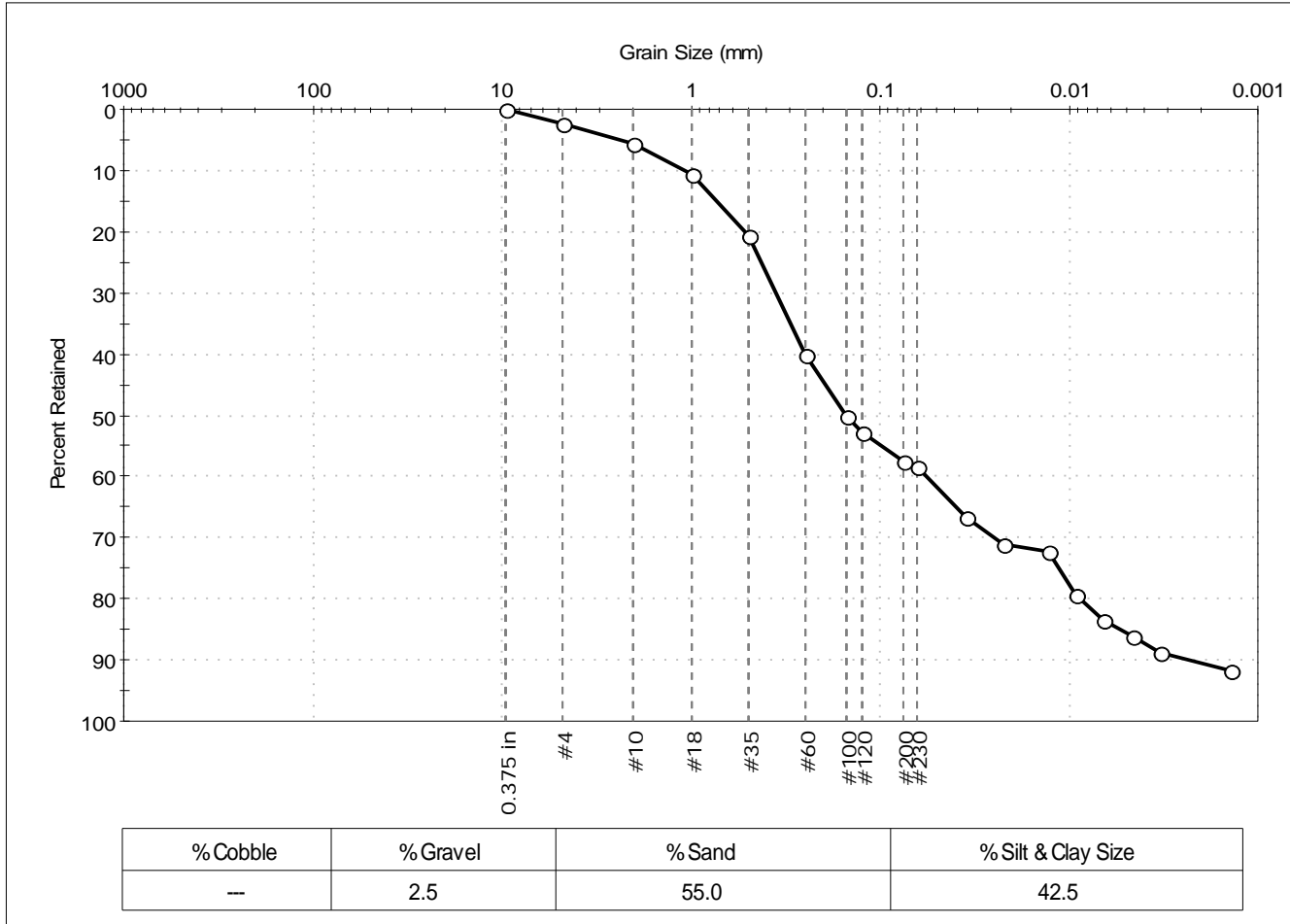
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 230-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0200                     | Test Date:   | 11/04/14   |
| Depth:              | ---                            | Test Id:     | 310196     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 50           |               |          |
| #120       | 0.12               | 53           |               |          |
| #200       | 0.075              | 57           |               |          |
| #230       | 0.063              | 58           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0347             | 67           |               |          |
| ---        | 0.0221             | 71           |               |          |
| ---        | 0.0128             | 72           |               |          |
| ---        | 0.0092             | 79           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 89           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7418 mm | D <sub>30</sub> = 0.0245 mm |
| D <sub>60</sub> = 0.2505 mm | D <sub>15</sub> = 0.0054 mm |
| D <sub>50</sub> = 0.1522 mm | D <sub>10</sub> = 0.0024 mm |
| C <sub>u</sub> = 104.375    | C <sub>c</sub> = 0.998      |

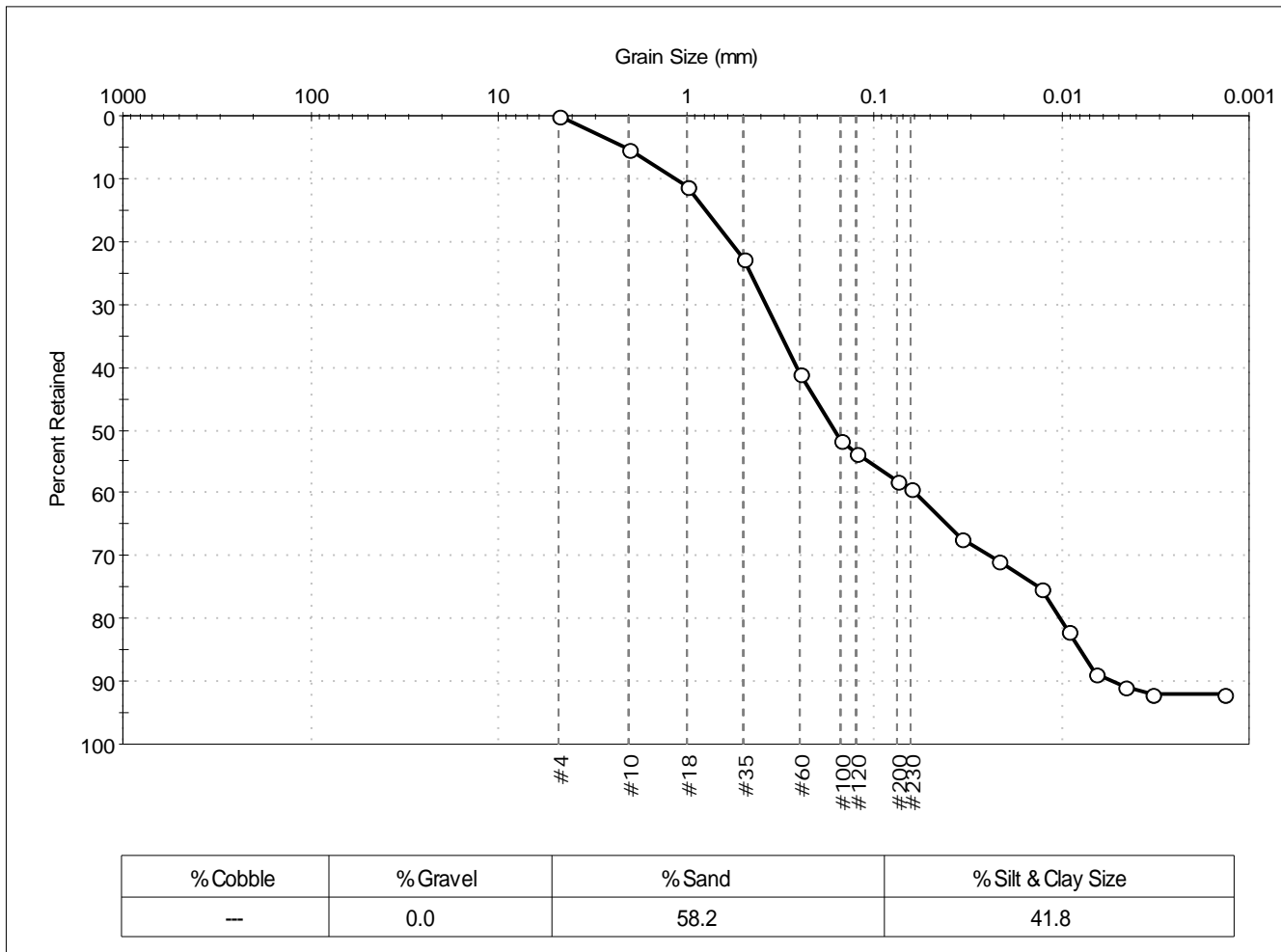
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 230-14LTM                               | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0200DUP                           | Test Date: 10/23/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310197             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet, very dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 11           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 41           |               |          |
| #100       | 0.15               | 52           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 58           |               |          |
| #230       | 0.063              | 59           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 67           |               |          |
| ---        | 0.0217             | 71           |               |          |
| ---        | 0.0127             | 75           |               |          |
| ---        | 0.0091             | 82           |               |          |
| ---        | 0.0066             | 89           |               |          |
| ---        | 0.0047             | 91           |               |          |
| ---        | 0.0033             | 92           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7901 mm | D <sub>30</sub> = 0.0240 mm |
| D <sub>60</sub> = 0.2596 mm | D <sub>15</sub> = 0.0079 mm |
| D <sub>50</sub> = 0.1629 mm | D <sub>10</sub> = 0.0054 mm |
| C <sub>u</sub> = 48.074     | C <sub>c</sub> = 0.411      |

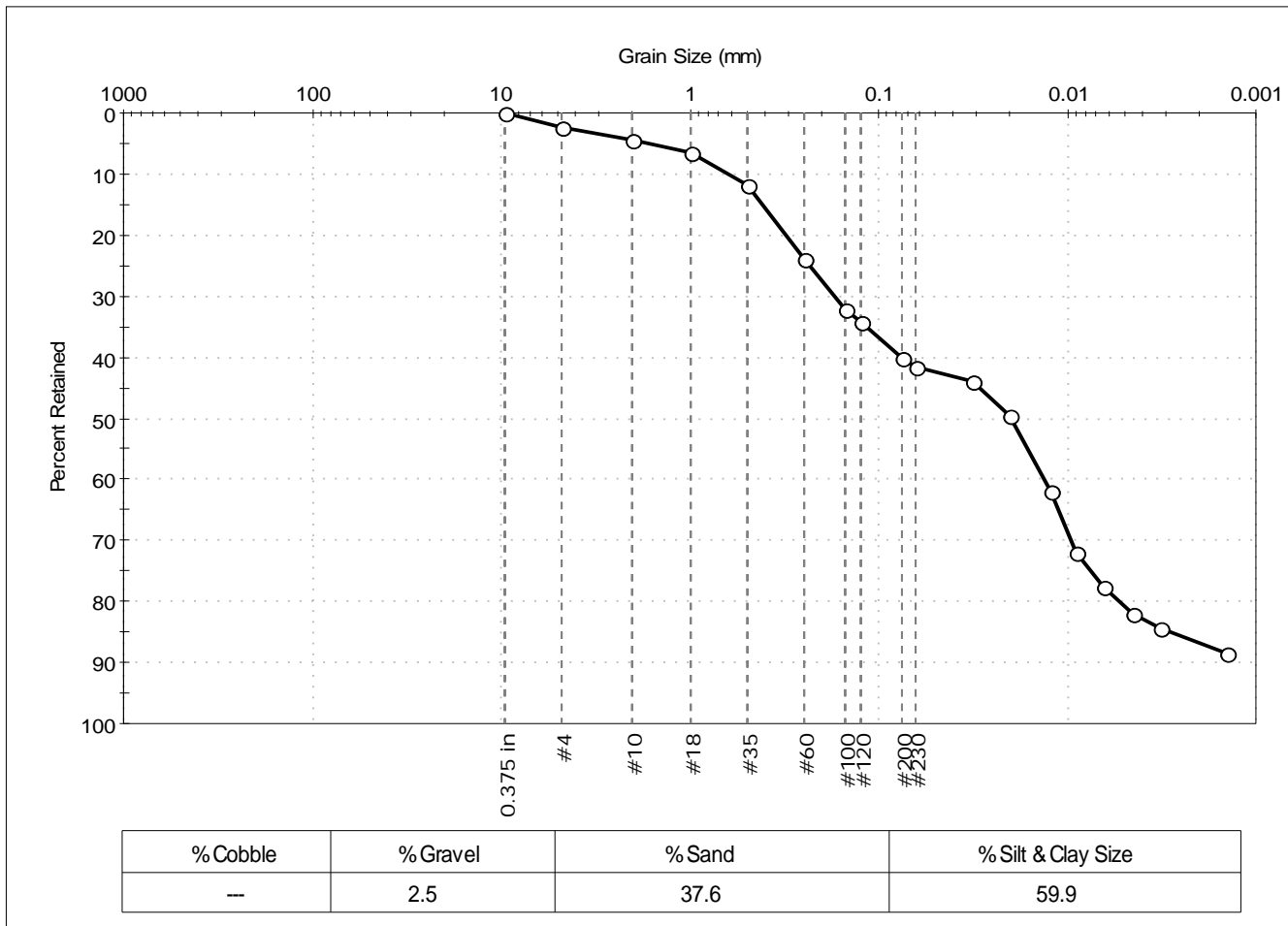
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                   |              |            |
|---------------------|-----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute       |              |            |
| Project:            | New Bedford Harbor                |              |            |
| Location:           | New Bedford, MA                   | Project No:  | GTX-302366 |
| Boring ID:          | 230-14LTM                         | Sample Type: | bag        |
| Sample ID:          | NBH14-0201                        | Test Date:   | 11/14/14   |
| Depth:              | ---                               | Test Id:     | 310198     |
| Test Comment:       | ---                               |              |            |
| Sample Description: | Moist, dark olive gray sandy silt |              |            |
| Sample Comment:     | ---                               |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 32           |               |          |
| #120       | 0.12               | 34           |               |          |
| #200       | 0.075              | 40           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 44           |               |          |
| ---        | 0.0205             | 50           |               |          |
| ---        | 0.0122             | 62           |               |          |
| ---        | 0.0089             | 72           |               |          |
| ---        | 0.0064             | 78           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4156 mm | D <sub>30</sub> = 0.0095 mm |
| D <sub>60</sub> = 0.0755 mm | D <sub>15</sub> = 0.0028 mm |
| D <sub>50</sub> = 0.0201 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

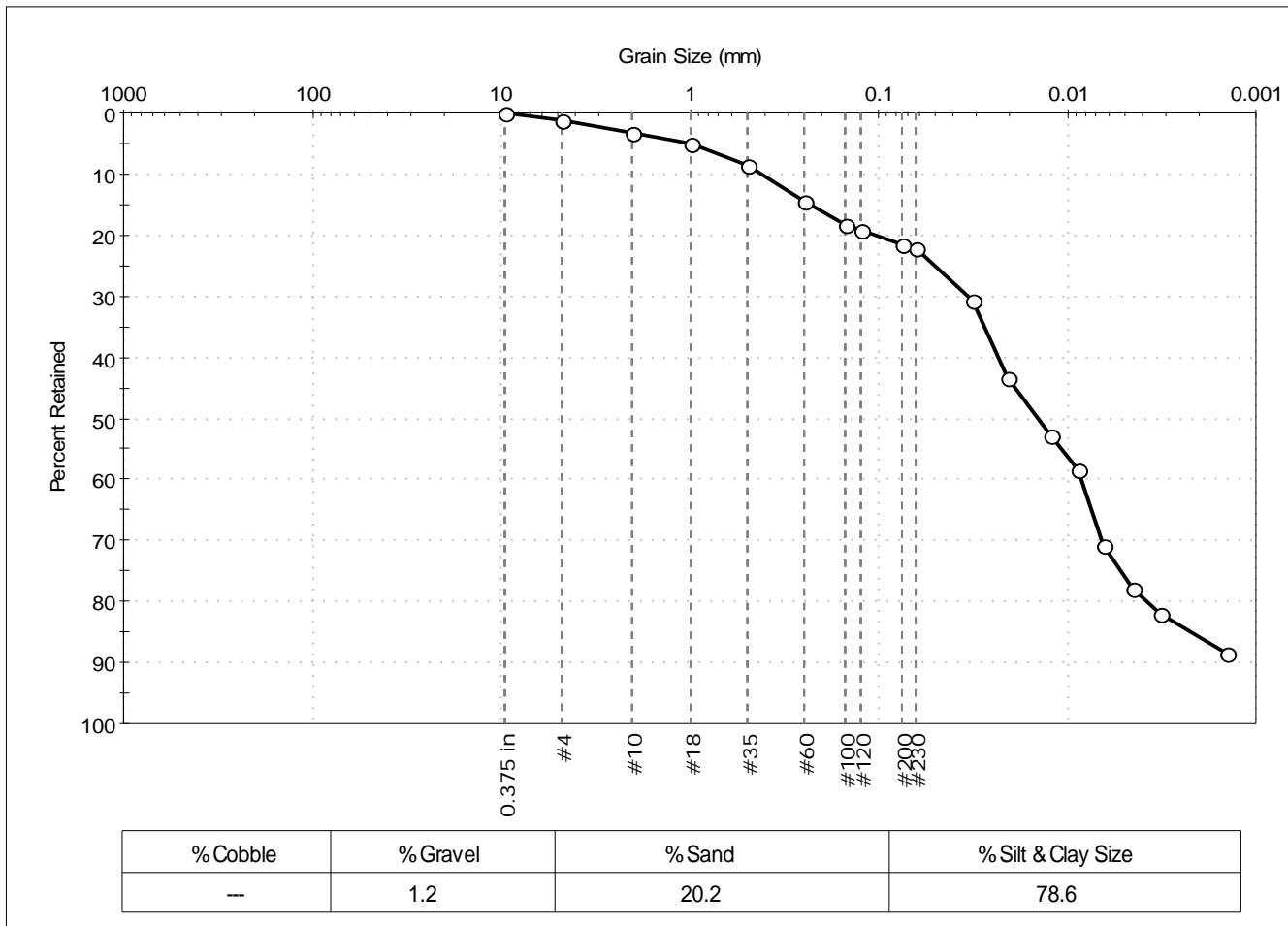
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 230-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0202  
 Test Date: 11/17/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310199  
 Test Comment: ---  
 Sample Description: Wet, dark olive silt with sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 18           |               |          |
| #120       | 0.12               | 19           |               |          |
| #200       | 0.075              | 21           |               |          |
| #230       | 0.063              | 22           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 31           |               |          |
| ---        | 0.0207             | 43           |               |          |
| ---        | 0.0122             | 53           |               |          |
| ---        | 0.0088             | 58           |               |          |
| ---        | 0.0064             | 71           |               |          |
| ---        | 0.0045             | 78           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0014             | 88           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2337 mm | D <sub>30</sub> = 0.0065 mm |
| D <sub>60</sub> = 0.0231 mm | D <sub>15</sub> = 0.0022 mm |
| D <sub>50</sub> = 0.0143 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification               |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

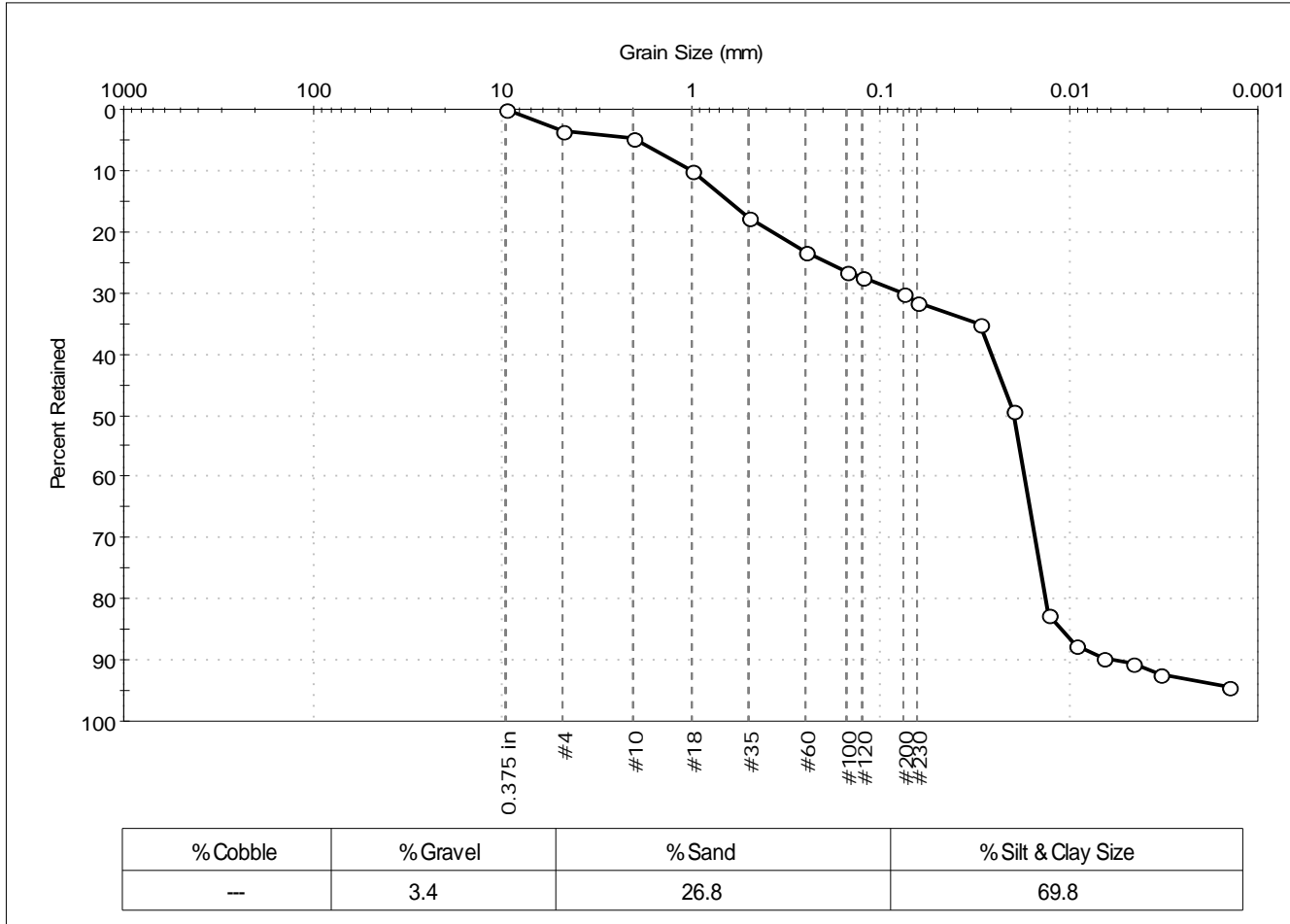
| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 117-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0203                      | Test Date:   | 11/17/14   |
| Depth:              | ---                             | Test Id:     | 310200     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Wet, dark olive gray sandy silt |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 23           |               |          |
| #100       | 0.15               | 27           |               |          |
| #120       | 0.12               | 27           |               |          |
| #200       | 0.075              | 30           |               |          |
| #230       | 0.063              | 31           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0298             | 35           |               |          |
| ---        | 0.0200             | 49           |               |          |
| ---        | 0.0129             | 83           |               |          |
| ---        | 0.0093             | 88           |               |          |
| ---        | 0.0066             | 90           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 92           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6384 mm | D <sub>30</sub> = 0.0152 mm |
| D <sub>60</sub> = 0.0259 mm | D <sub>15</sub> = 0.0110 mm |
| D <sub>50</sub> = 0.0198 mm | D <sub>10</sub> = 0.0056 mm |
| C <sub>u</sub> = 4.625      | C <sub>c</sub> = 1.593      |

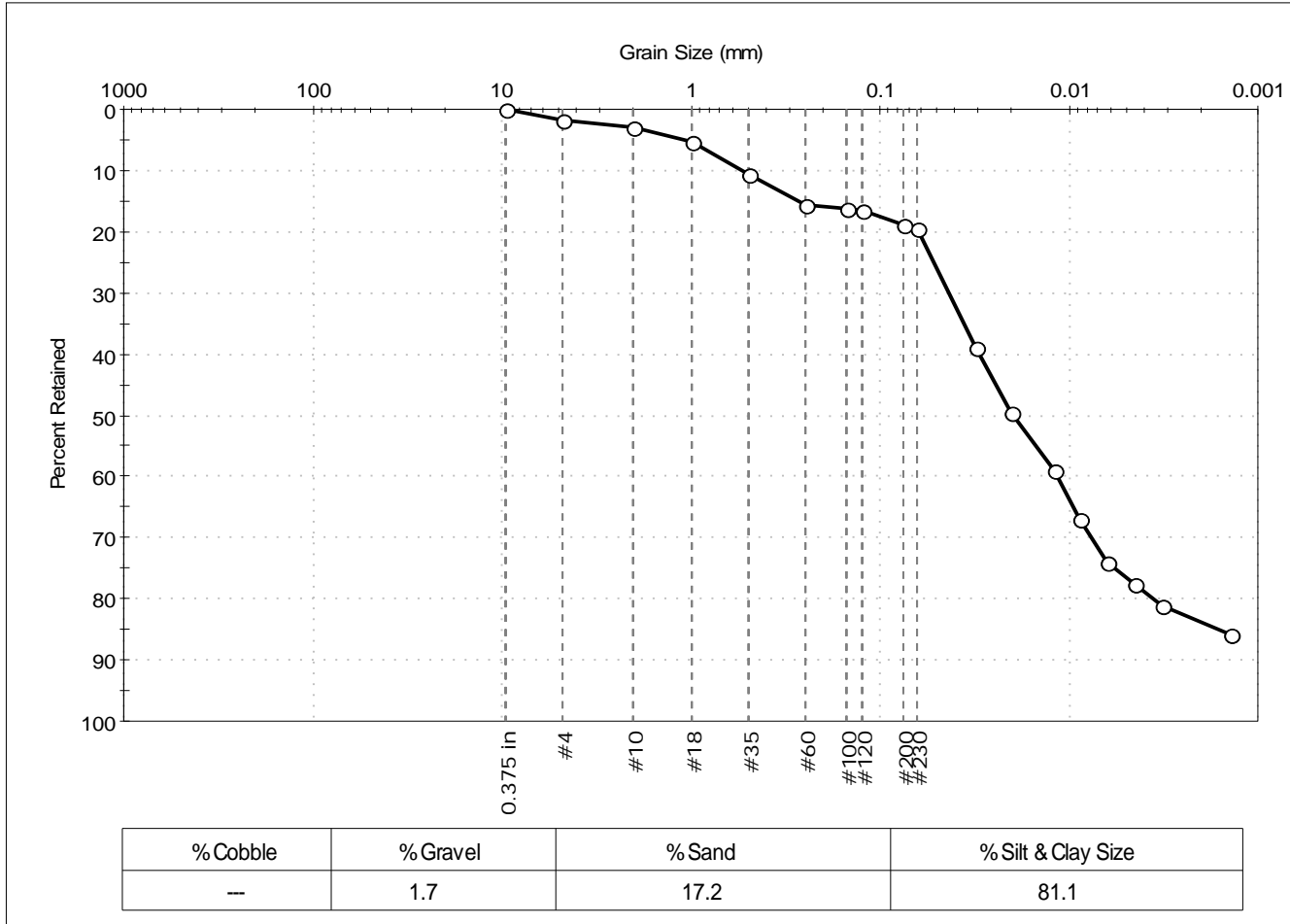
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 117-14LTM                                    | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0204                                   | Test Date: 11/12/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310201             |                           |                        |
| Test Comment: ---                                       |                             |                           |                        |
| Sample Description: Wet, dark olive gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                     |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 16           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 19           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 39           |               |          |
| ---        | 0.0202             | 49           |               |          |
| ---        | 0.0121             | 59           |               |          |
| ---        | 0.0087             | 67           |               |          |
| ---        | 0.0063             | 74           |               |          |
| ---        | 0.0045             | 78           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2695 mm | D <sub>30</sub> = 0.0076 mm |
| D <sub>60</sub> = 0.0298 mm | D <sub>15</sub> = 0.0016 mm |
| D <sub>50</sub> = 0.0197 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

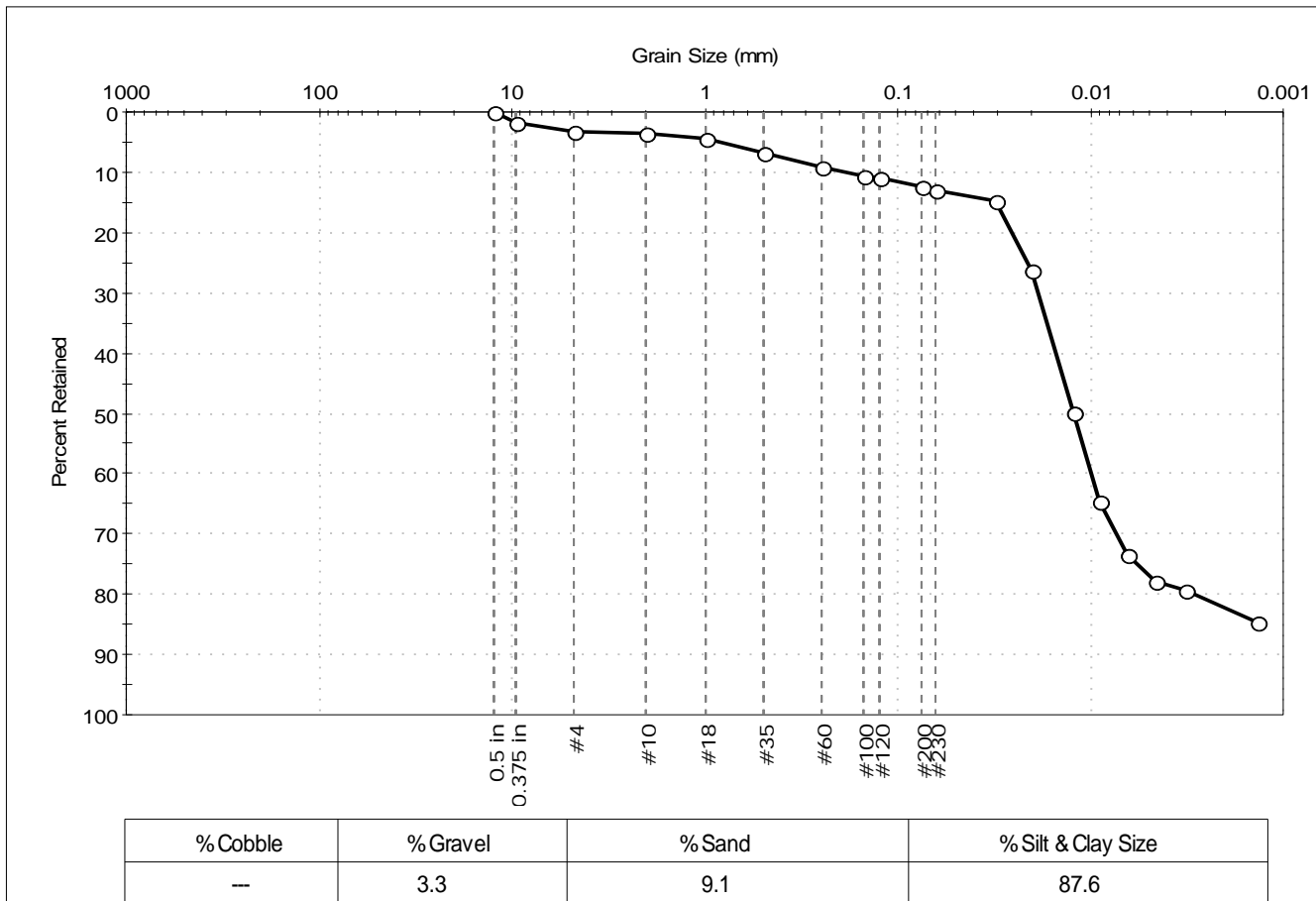
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 117-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0205  
 Test Date: 11/12/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310202  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 9            |               |          |
| #100       | 0.15               | 10           |               |          |
| #120       | 0.12               | 11           |               |          |
| #200       | 0.075              | 12           |               |          |
| #230       | 0.063              | 13           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0309             | 15           |               |          |
| ---        | 0.0201             | 26           |               |          |
| ---        | 0.0123             | 50           |               |          |
| ---        | 0.0089             | 65           |               |          |
| ---        | 0.0064             | 74           |               |          |
| ---        | 0.0046             | 78           |               |          |
| ---        | 0.0032             | 79           |               |          |
| ---        | 0.0014             | 85           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0304 mm | D <sub>30</sub> = 0.0073 mm |
| D <sub>60</sub> = 0.0151 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0122 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

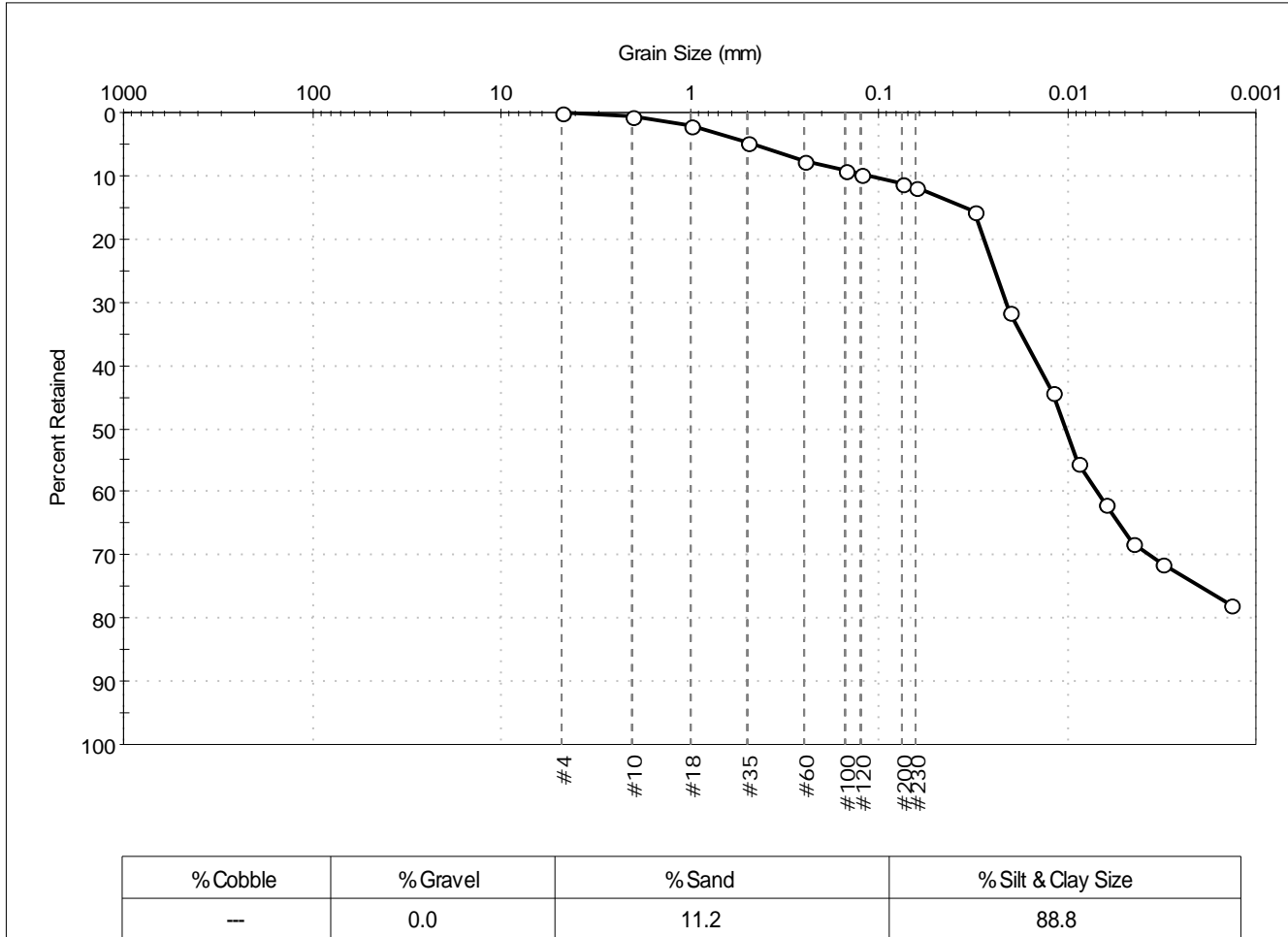
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 117-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0206               | Test Date: 11/17/14         | Test Id: 310203                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 8            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 12           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0309             | 16           |               |          |
| ---        | 0.0204             | 32           |               |          |
| ---        | 0.0121             | 44           |               |          |
| ---        | 0.0087             | 55           |               |          |
| ---        | 0.0062             | 62           |               |          |
| ---        | 0.0045             | 68           |               |          |
| ---        | 0.0032             | 71           |               |          |
| ---        | 0.0014             | 78           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0350 mm | D <sub>30</sub> = 0.0037 mm |
| D <sub>60</sub> = 0.0145 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0102 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

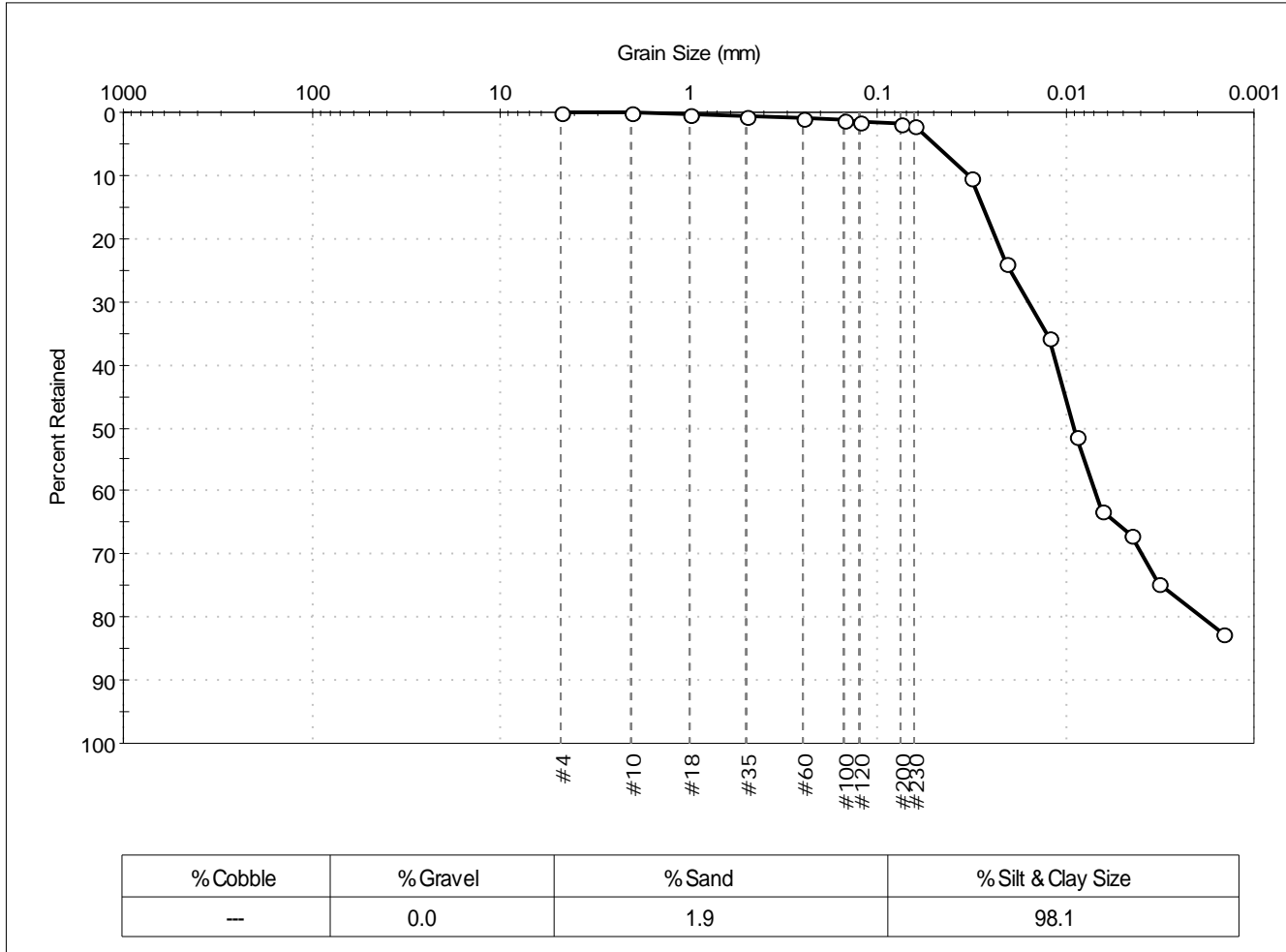
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 114-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0207               | Test Date: 11/12/14         | Test Id: 310204                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 10           |               |          |
| ---        | 0.0207             | 24           |               |          |
| ---        | 0.0122             | 36           |               |          |
| ---        | 0.0089             | 51           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0045             | 67           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0015             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0276 mm | D <sub>30</sub> = 0.0039 mm |
| D <sub>60</sub> = 0.0112 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0091 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

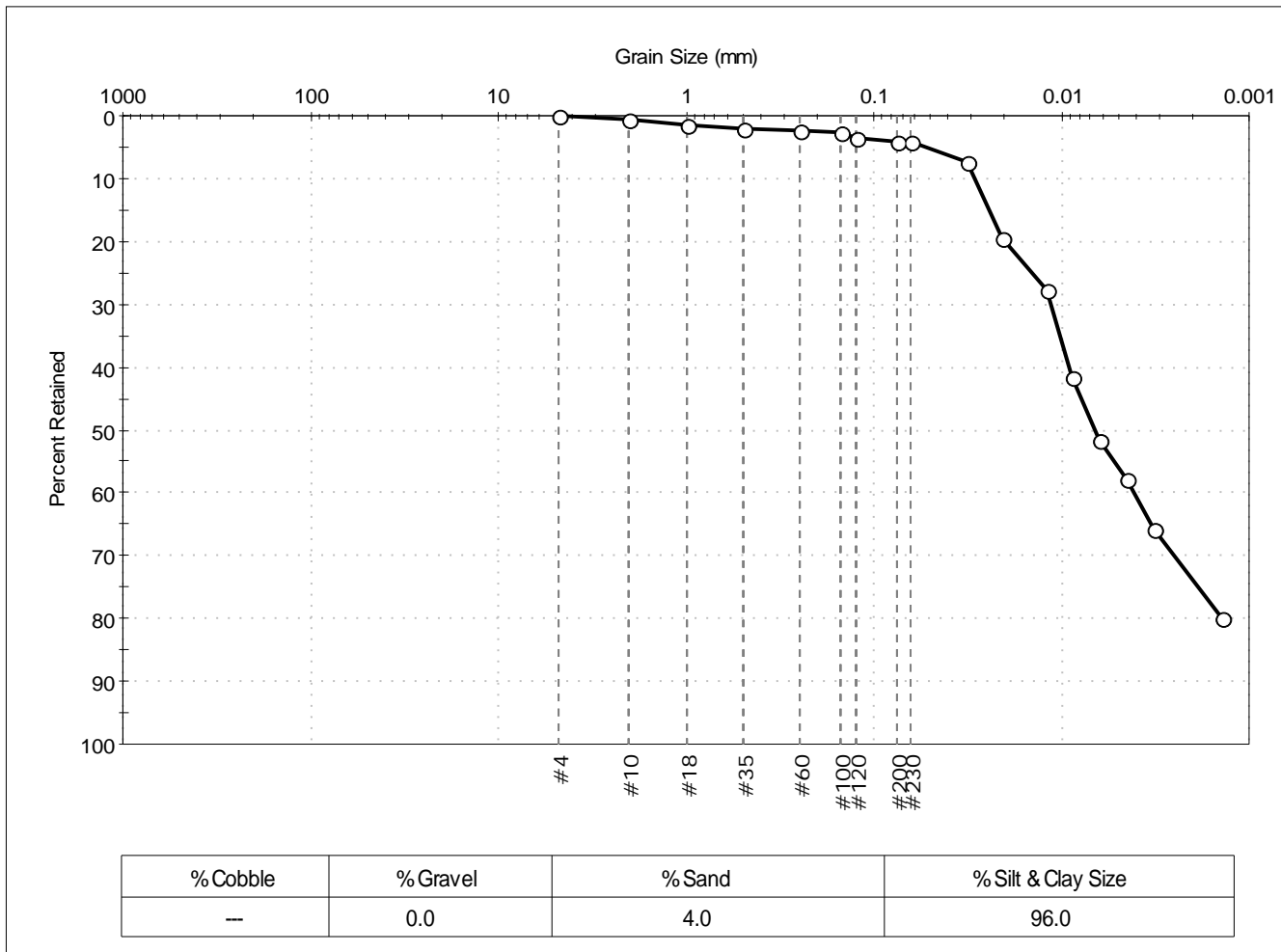
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                        | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 114-14LTM                | Sample Type: bag                                   | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0208               | Test Date: 11/12/14                                | Depth: ---                | Test Id: 310205        |
| Test Comment: ---                   | Sample Description: Wet, very dark olive gray silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 8            |               |          |
| ---        | 0.0206             | 20           |               |          |
| ---        | 0.0120             | 28           |               |          |
| ---        | 0.0087             | 42           |               |          |
| ---        | 0.0062             | 52           |               |          |
| ---        | 0.0045             | 58           |               |          |
| ---        | 0.0032             | 66           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0242 mm | D <sub>30</sub> = 0.0025 mm |
| D <sub>60</sub> = 0.0090 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0066 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

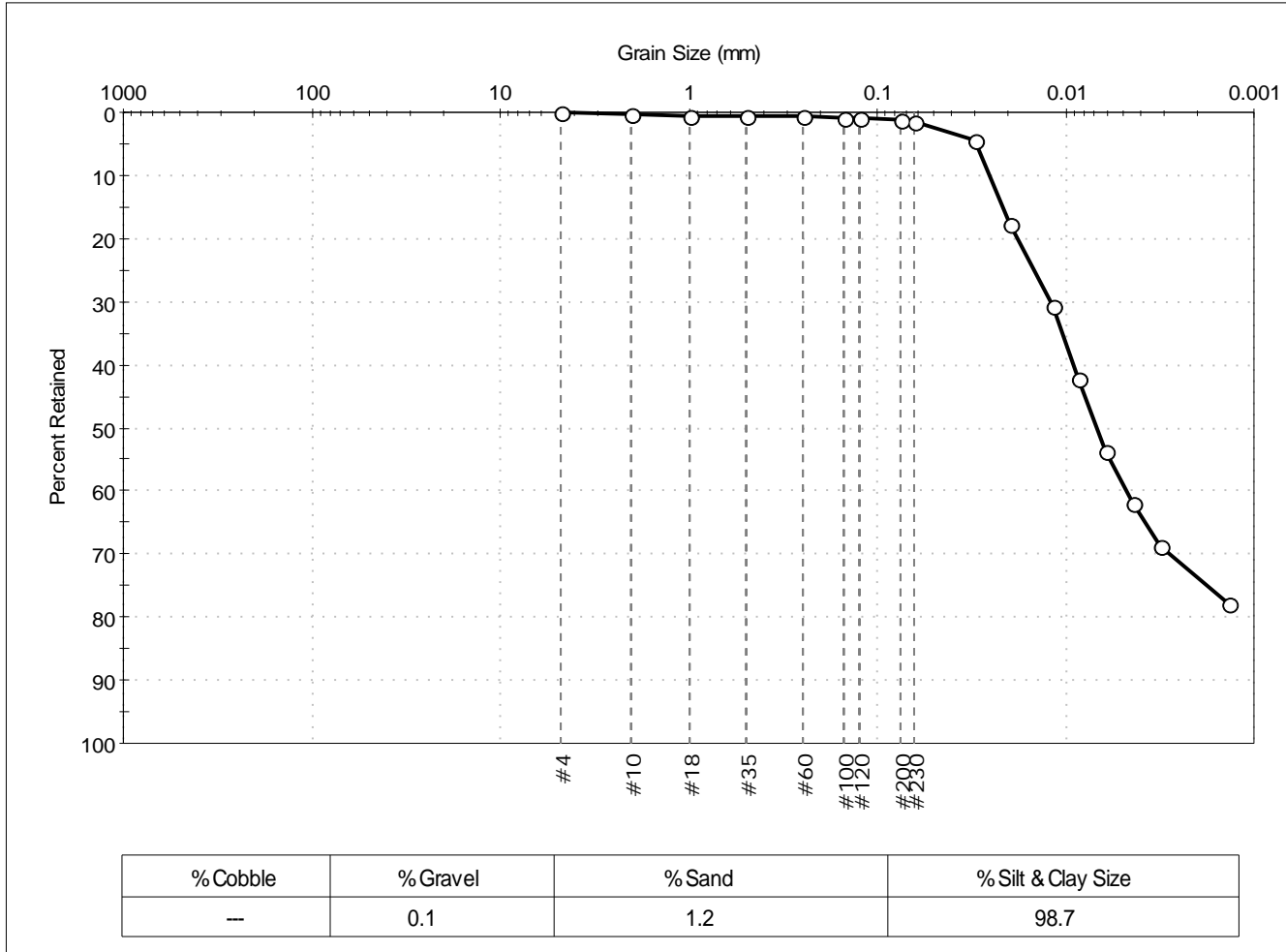
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 114-14LTM                               | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0209                              | Test Date: 11/18/14         | Test Id: 310206           |                        |
| Depth: ---   | Test Comment: ---           |                           |                        |
| Sample Description: Wet, very dark olive gray silt |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 1            |               |          |
| #230       | 0.063              | 1            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0303             | 4            |               |          |
| ---        | 0.0199             | 18           |               |          |
| ---        | 0.0118             | 31           |               |          |
| ---        | 0.0085             | 42           |               |          |
| ---        | 0.0062             | 54           |               |          |
| ---        | 0.0044             | 62           |               |          |
| ---        | 0.0032             | 69           |               |          |
| ---        | 0.0014             | 78           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0216 mm | D <sub>30</sub> = 0.0028 mm |
| D <sub>60</sub> = 0.0091 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0069 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

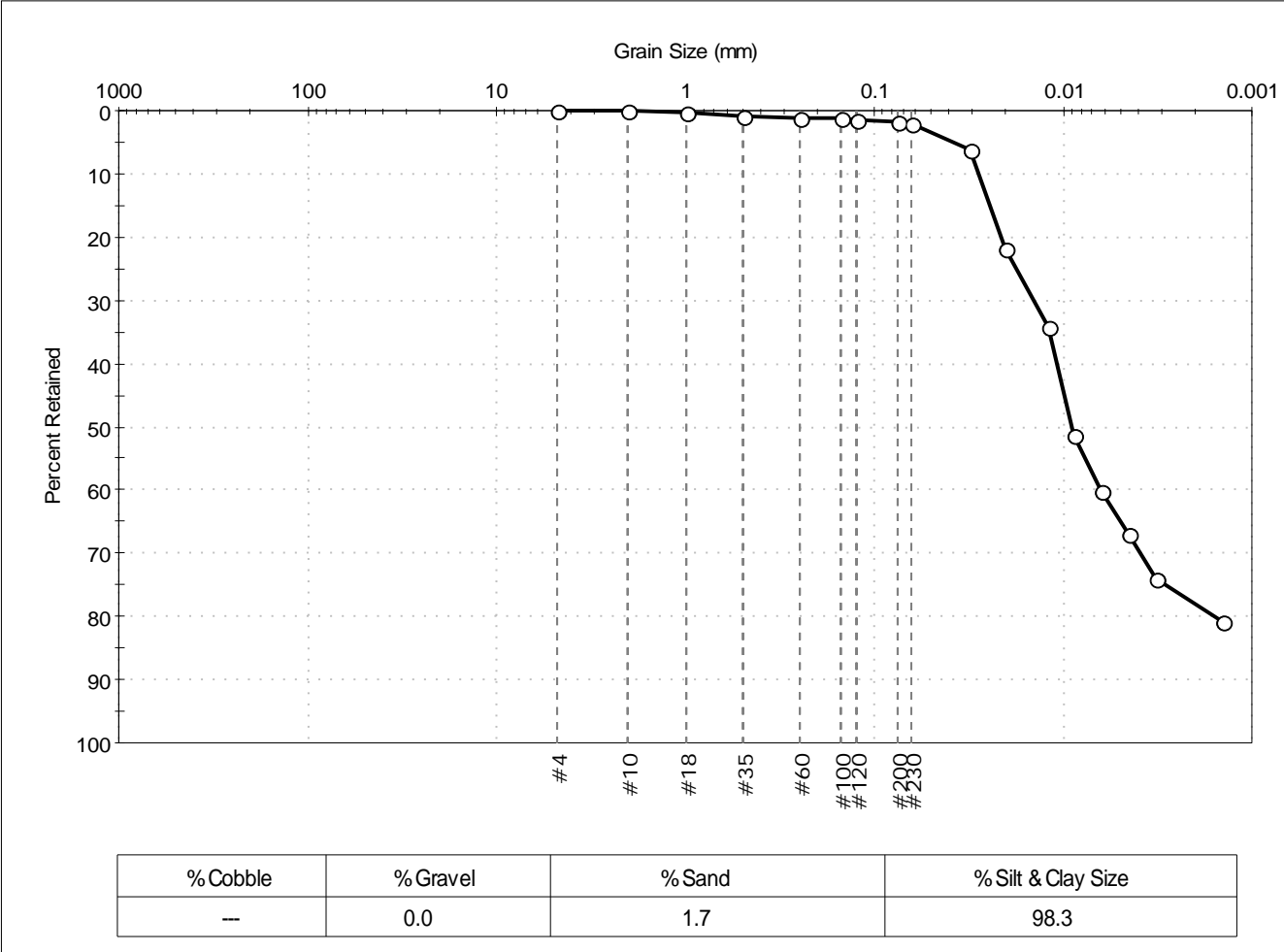
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 114-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0210               | Test Date: 11/12/14         | Test Id: 310207                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 6            |               |          |
| ---        | 0.0203             | 22           |               |          |
| ---        | 0.0119             | 34           |               |          |
| ---        | 0.0088             | 51           |               |          |
| ---        | 0.0063             | 60           |               |          |
| ---        | 0.0045             | 67           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0014             | 81           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0246 mm | D <sub>30</sub> = 0.0039 mm |
| D <sub>60</sub> = 0.0107 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0090 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

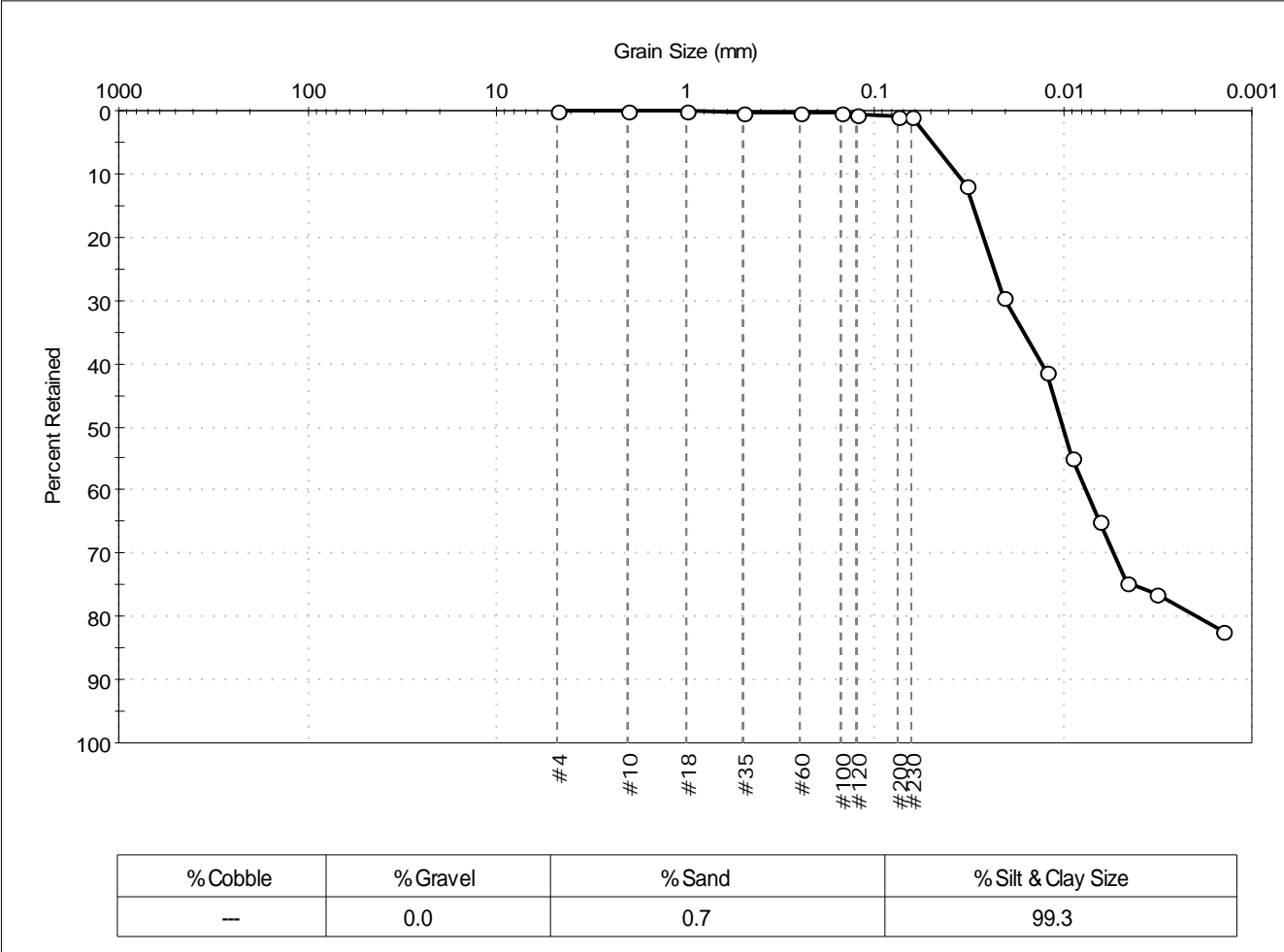
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |  |                           |                        |
|-------------------------------------|--|---------------------------|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor                    | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 111-14LTM                | Sample Type: bag                               | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0211               | Test Date: 11/12/14                            | Depth: ---                | Test Id: 310208        |
| Test Comment: ---                   | Sample Description: Moist, very dark gray silt | Sample Comment: ---       |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 0            |               |          |
| #100       | 0.15               | 0            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 1            |               |          |
| #230       | 0.063              | 1            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 12           |               |          |
| ---        | 0.0209             | 30           |               |          |
| ---        | 0.0123             | 41           |               |          |
| ---        | 0.0089             | 55           |               |          |
| ---        | 0.0064             | 65           |               |          |
| ---        | 0.0046             | 75           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0014             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0299 mm | D <sub>30</sub> = 0.0054 mm |
| D <sub>60</sub> = 0.0130 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0100 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

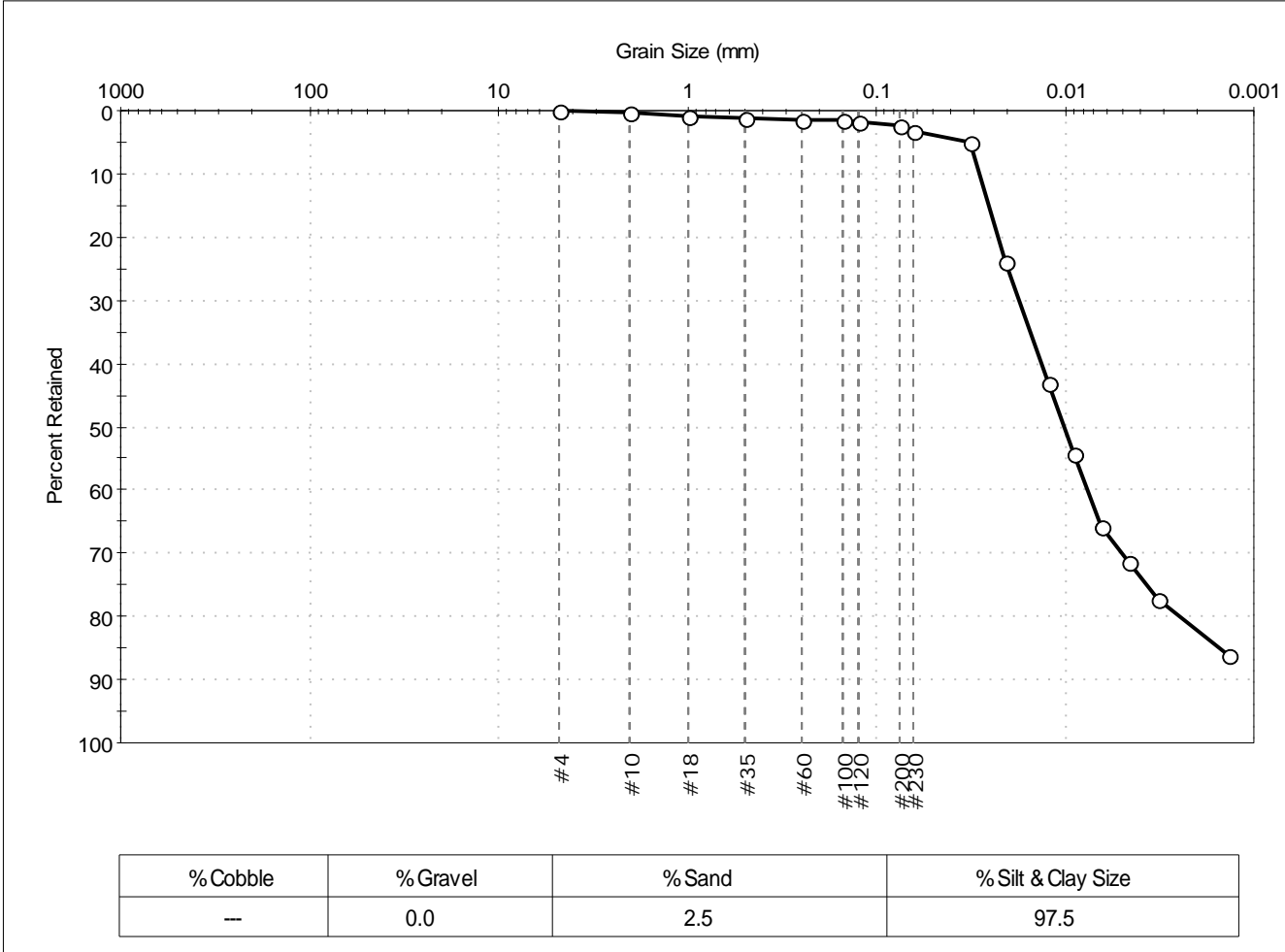
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 111-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0212                  | Test Date:   | 11/12/14   |
| Depth:              | ---                         | Test Id:     | 310209     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 5            |               |          |
| ---        | 0.0207             | 24           |               |          |
| ---        | 0.0123             | 43           |               |          |
| ---        | 0.0089             | 54           |               |          |
| ---        | 0.0064             | 66           |               |          |
| ---        | 0.0046             | 71           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0253 mm | D <sub>30</sub> = 0.0050 mm |
| D <sub>60</sub> = 0.0134 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0101 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

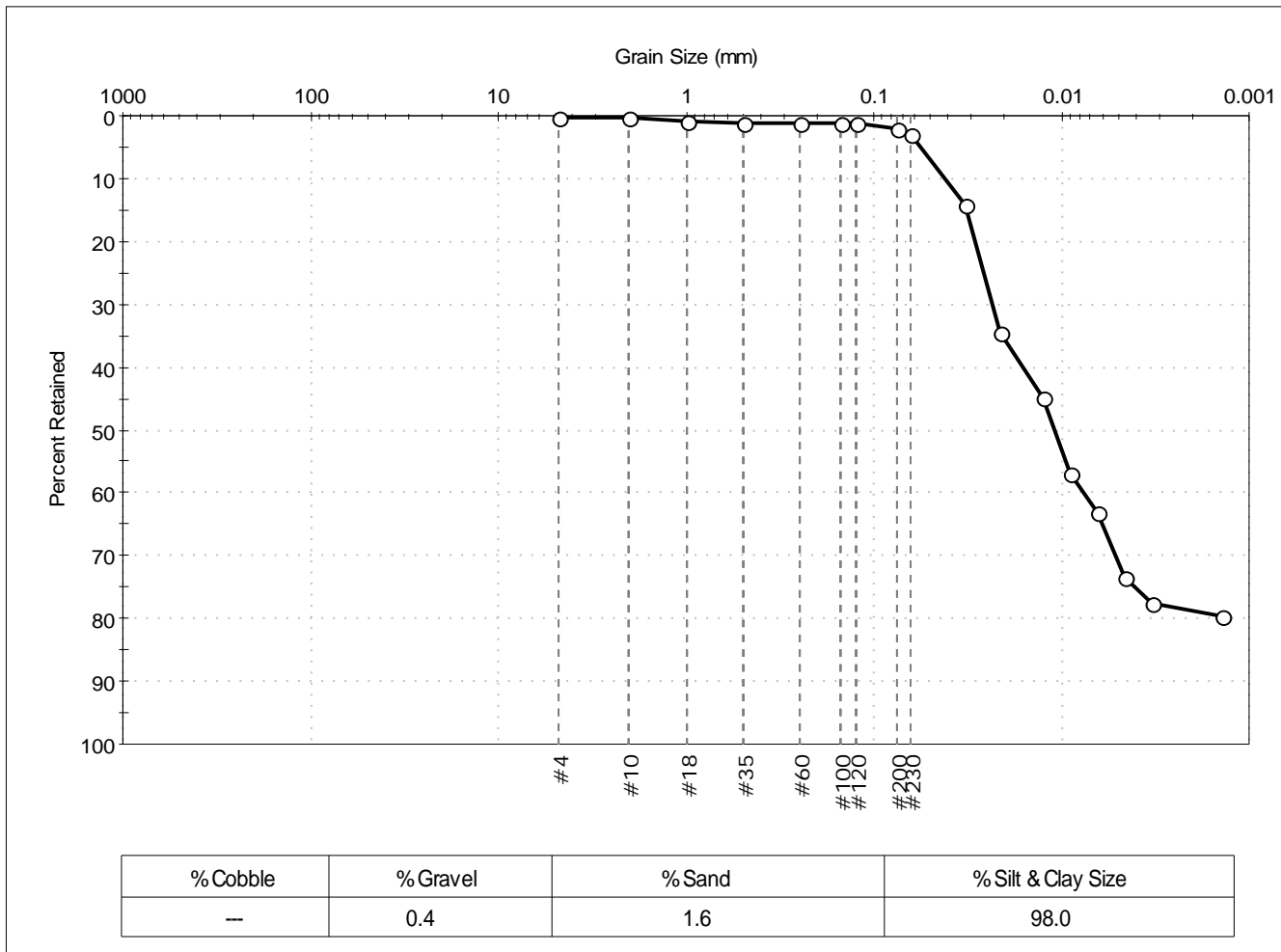
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 111-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0213               | Test Date: 11/12/14         | Test Id: 310210                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 14           |               |          |
| ---        | 0.0212             | 35           |               |          |
| ---        | 0.0124             | 45           |               |          |
| ---        | 0.0090             | 57           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0046             | 73           |               |          |
| ---        | 0.0033             | 78           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0319 mm | D <sub>30</sub> = 0.0051 mm |
| D <sub>60</sub> = 0.0160 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0108 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

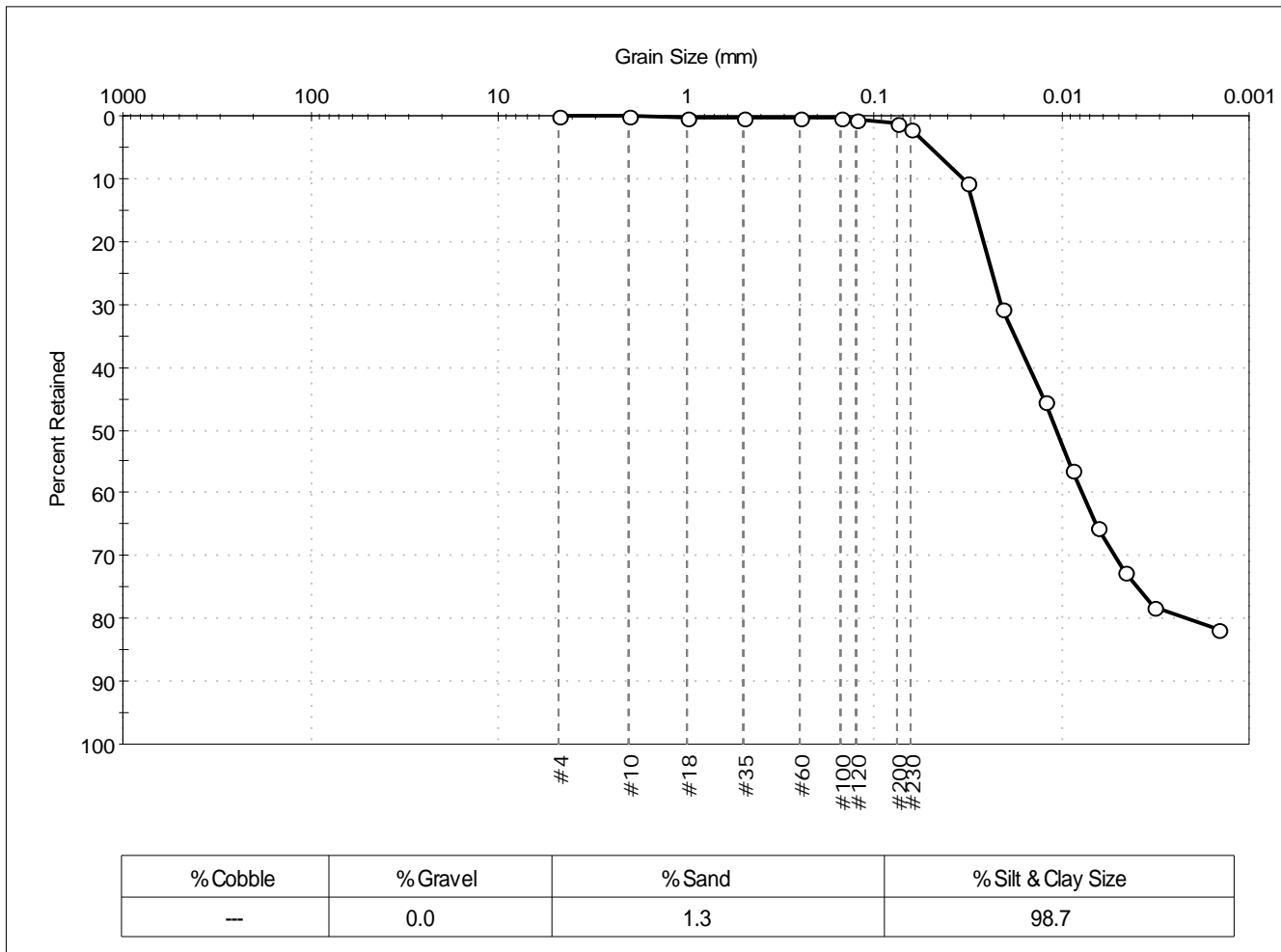
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 111-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0214               | Test Date: 11/12/14         | Test Id: 310211                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 0            |               |          |
| #100       | 0.15               | 0            |               |          |
| #120       | 0.12               | 0            |               |          |
| #200       | 0.075              | 1            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 11           |               |          |
| ---        | 0.0208             | 31           |               |          |
| ---        | 0.0123             | 45           |               |          |
| ---        | 0.0089             | 56           |               |          |
| ---        | 0.0064             | 65           |               |          |
| ---        | 0.0046             | 73           |               |          |
| ---        | 0.0033             | 78           |               |          |
| ---        | 0.0015             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0288 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0149 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0107 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

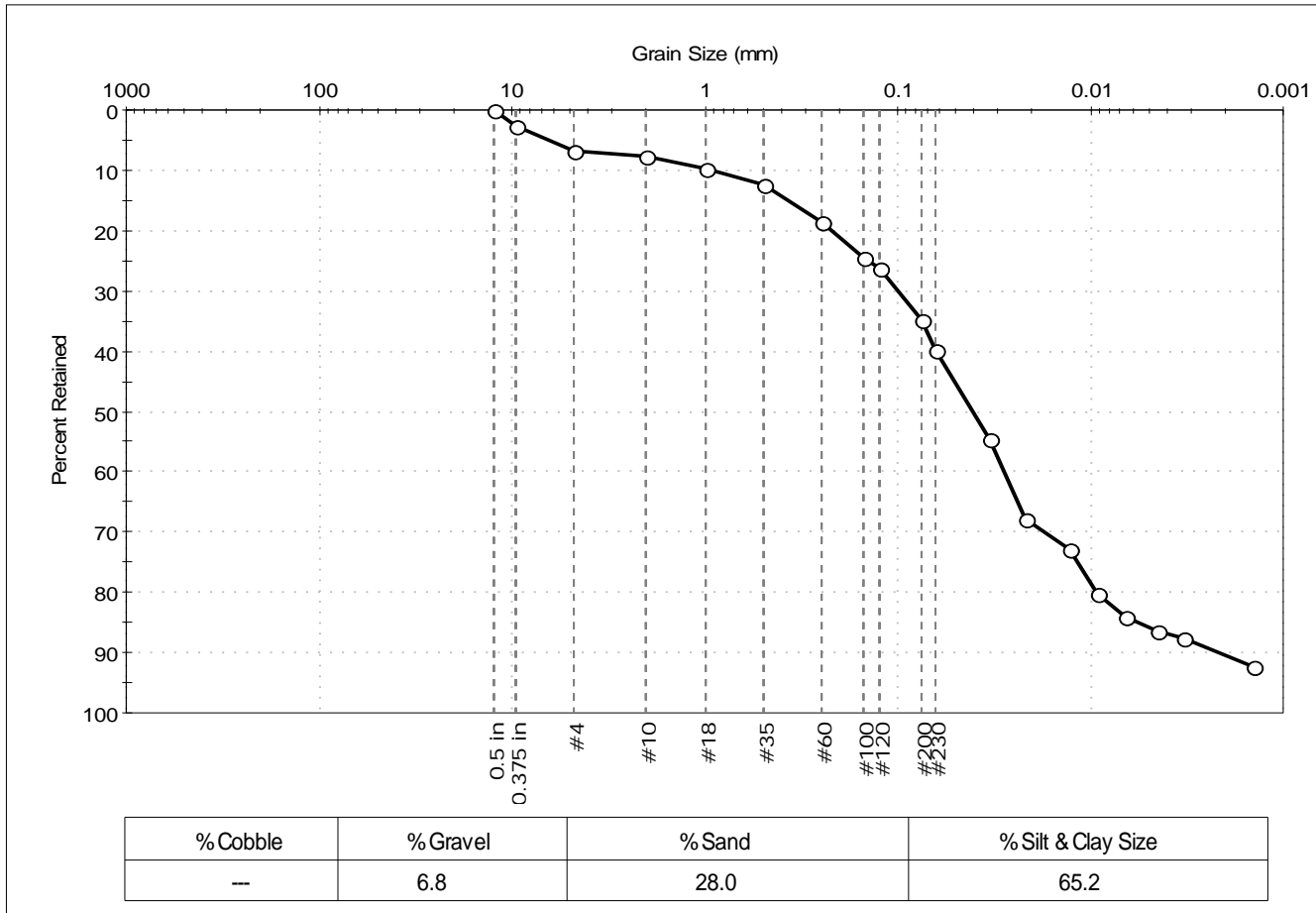
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 152-14LTM                                       | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0215                                      | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310212             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray sandy silt |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 3            |               |          |
| #4         | 4.75               | 7            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 24           |               |          |
| #120       | 0.12               | 26           |               |          |
| #200       | 0.075              | 35           |               |          |
| #230       | 0.063              | 40           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0332             | 54           |               |          |
| ---        | 0.0217             | 68           |               |          |
| ---        | 0.0127             | 73           |               |          |
| ---        | 0.0091             | 80           |               |          |
| ---        | 0.0065             | 84           |               |          |
| ---        | 0.0045             | 86           |               |          |
| ---        | 0.0033             | 88           |               |          |
| ---        | 0.0014             | 92           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3705 mm | D <sub>30</sub> = 0.0175 mm |
| D <sub>60</sub> = 0.0623 mm | D <sub>15</sub> = 0.0056 mm |
| D <sub>50</sub> = 0.0403 mm | D <sub>10</sub> = 0.0021 mm |
| C <sub>u</sub> = 29.667     | C <sub>c</sub> = 2.341      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

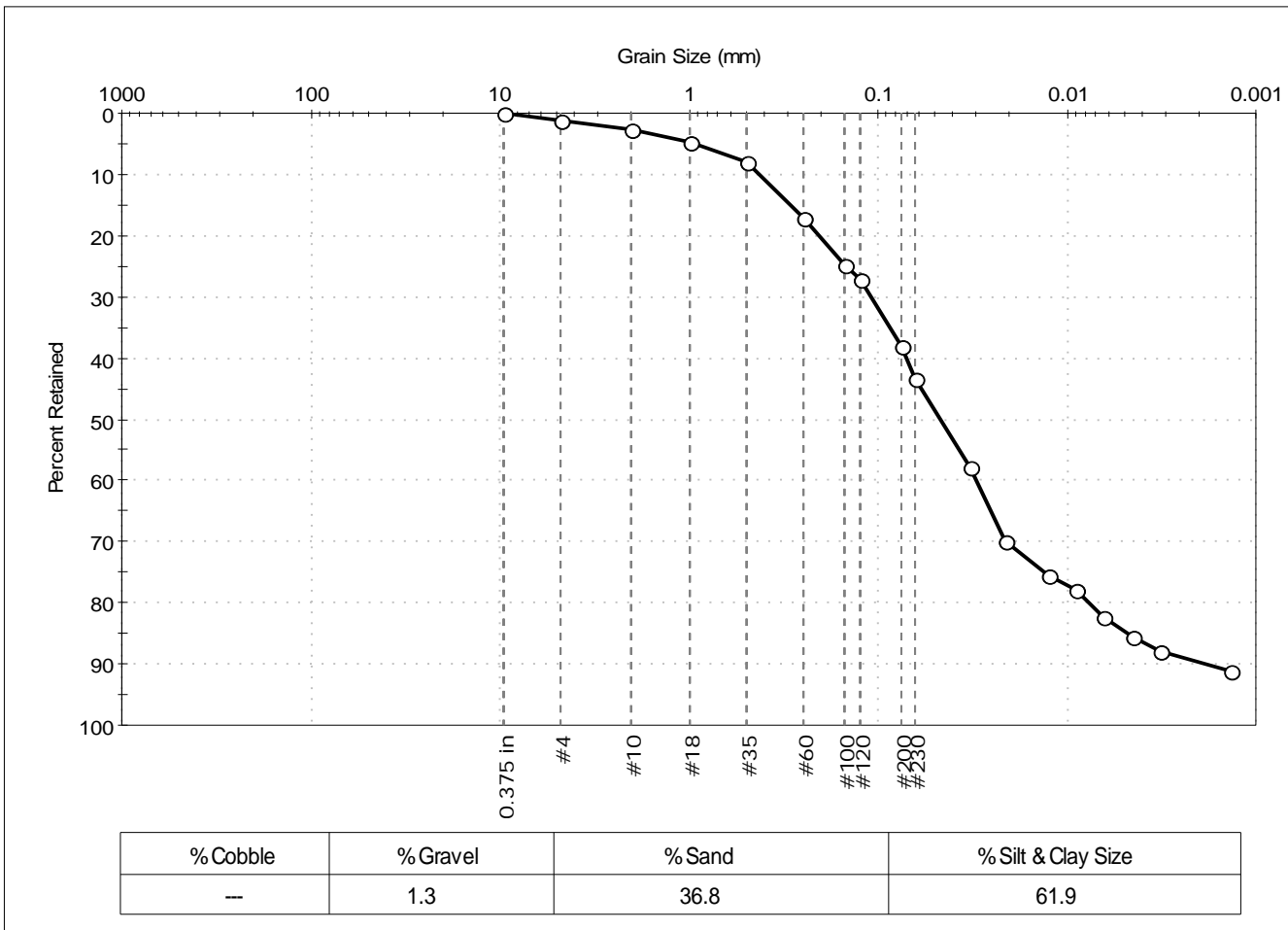
**Sample/Test Description**

Sand/Gravel Particle Shape : ANGULAR  
 Sand/Gravel Hardness : HARD  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 152-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0216  
 Test Date: 11/13/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310213  
 Test Comment: ---  
 Sample Description: Moist, very dark olive gray sandy silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 17           |               |          |
| #100       | 0.15               | 25           |               |          |
| #120       | 0.12               | 27           |               |          |
| #200       | 0.075              | 38           |               |          |
| #230       | 0.063              | 43           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0327             | 58           |               |          |
| ---        | 0.0214             | 70           |               |          |
| ---        | 0.0126             | 76           |               |          |
| ---        | 0.0089             | 78           |               |          |
| ---        | 0.0064             | 82           |               |          |
| ---        | 0.0045             | 86           |               |          |
| ---        | 0.0032             | 88           |               |          |
| ---        | 0.0014             | 91           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2944 mm | D <sub>30</sub> = 0.0214 mm |
| D <sub>60</sub> = 0.0705 mm | D <sub>15</sub> = 0.0047 mm |
| D <sub>50</sub> = 0.0467 mm | D <sub>10</sub> = 0.0018 mm |
| C <sub>u</sub> = 39.167     | C <sub>c</sub> = 3.609      |

**Classification**

|                              |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

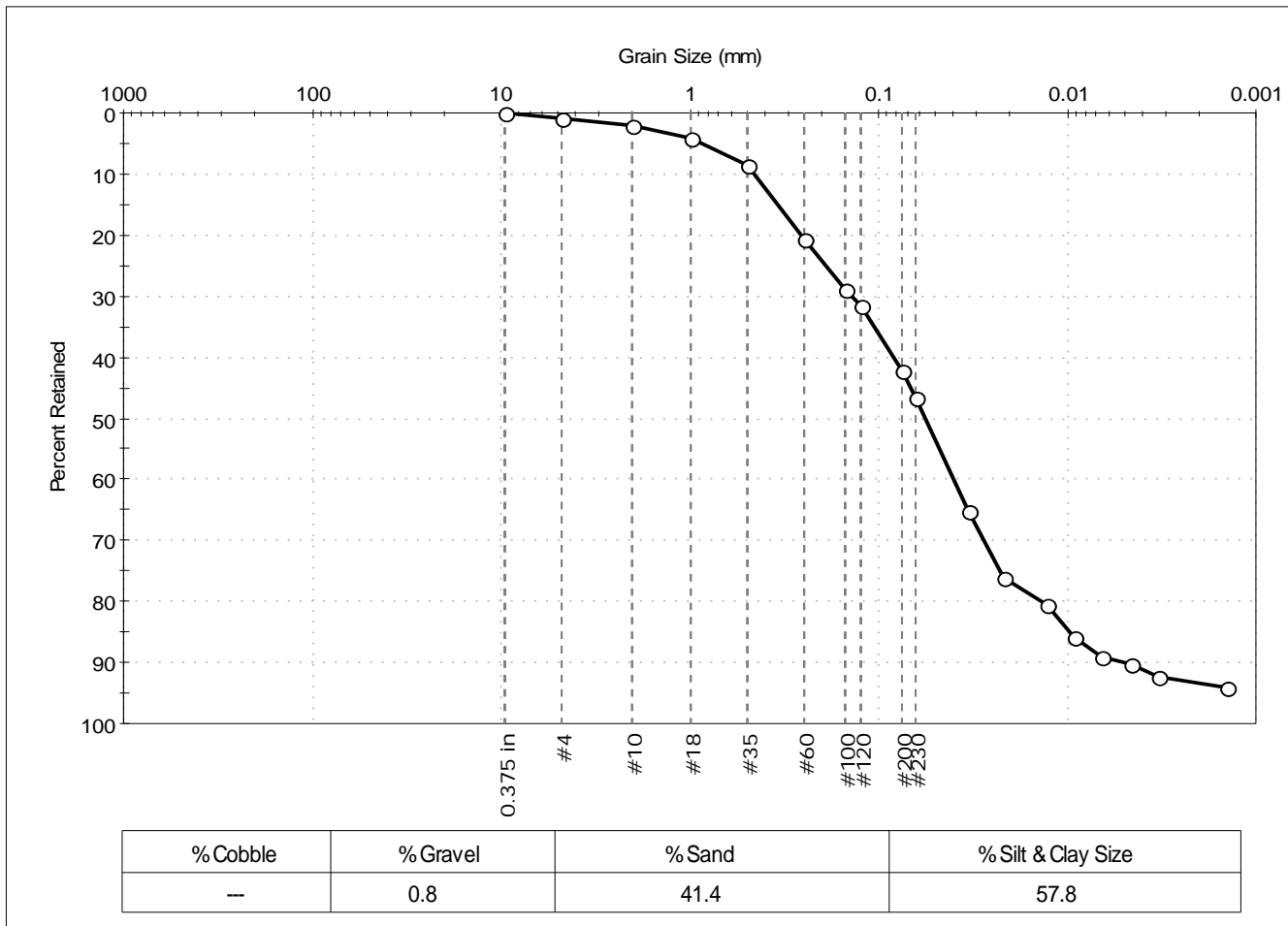
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 152-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0217               | Test Date: 11/17/14         | Test Id: 310214  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 21           |               |          |
| #100       | 0.15               | 29           |               |          |
| #120       | 0.12               | 32           |               |          |
| #200       | 0.075              | 42           |               |          |
| #230       | 0.063              | 47           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 65           |               |          |
| ---        | 0.0218             | 76           |               |          |
| ---        | 0.0128             | 80           |               |          |
| ---        | 0.0092             | 86           |               |          |
| ---        | 0.0065             | 89           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 92           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3459 mm | D <sub>30</sub> = 0.0278 mm |
| D <sub>60</sub> = 0.0836 mm | D <sub>15</sub> = 0.0097 mm |
| D <sub>50</sub> = 0.0562 mm | D <sub>10</sub> = 0.0050 mm |
| C <sub>u</sub> = 16.720     | C <sub>c</sub> = 1.849      |

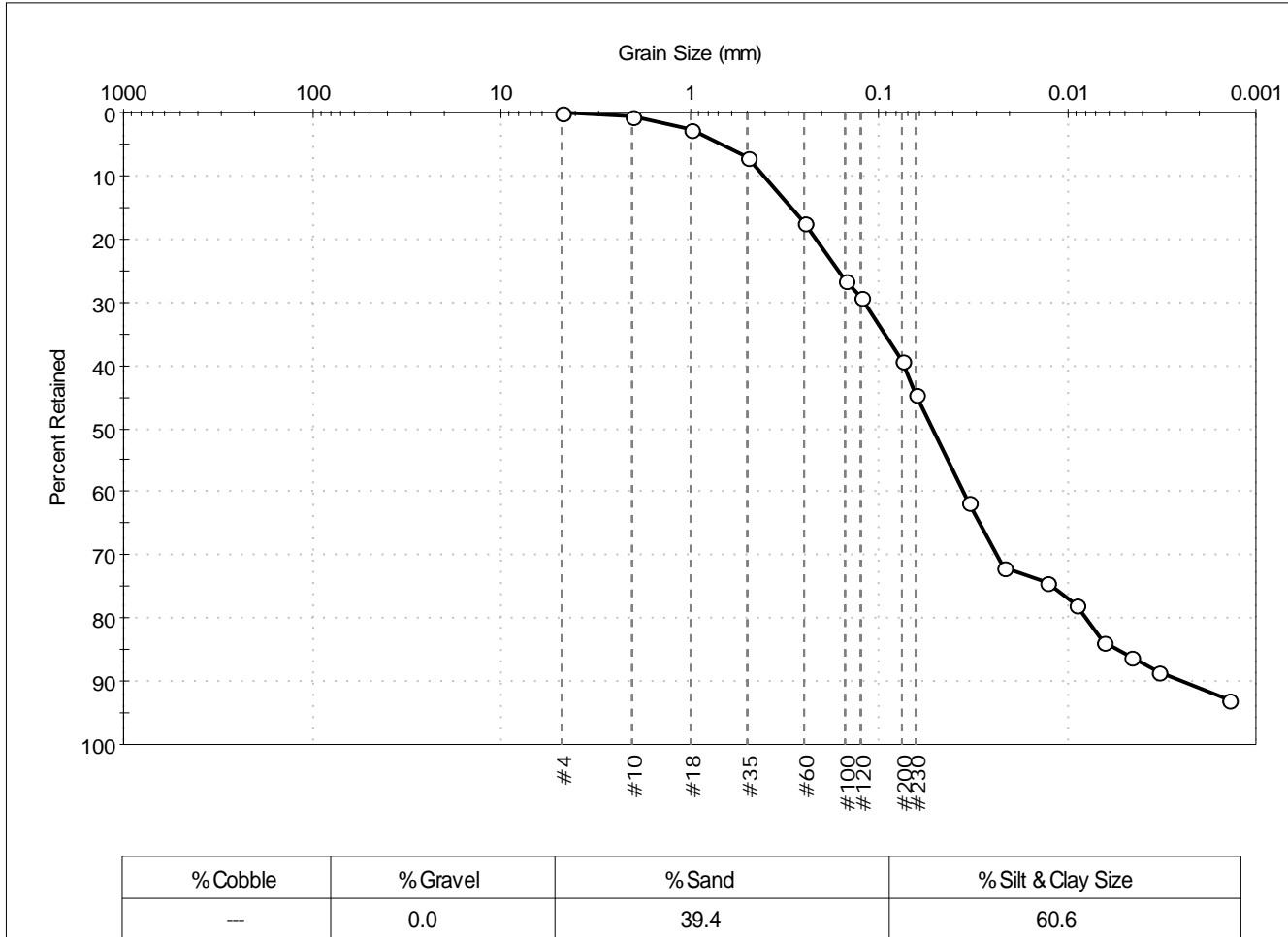
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                  | Project No: GTX-302366 |
| Boring ID: 152-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0218               | Test Date: 11/18/14         | Test Id: 310215  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark olive gray sandy silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 27           |               |          |
| #120       | 0.12               | 29           |               |          |
| #200       | 0.075              | 39           |               |          |
| #230       | 0.063              | 45           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0337             | 62           |               |          |
| ---        | 0.0219             | 72           |               |          |
| ---        | 0.0127             | 74           |               |          |
| ---        | 0.0091             | 78           |               |          |
| ---        | 0.0065             | 84           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 88           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2959 mm | D <sub>30</sub> = 0.0238 mm |
| D <sub>60</sub> = 0.0734 mm | D <sub>15</sub> = 0.0054 mm |
| D <sub>50</sub> = 0.0515 mm | D <sub>10</sub> = 0.0024 mm |
| C <sub>u</sub> = 30.583     | C <sub>c</sub> = 3.215      |

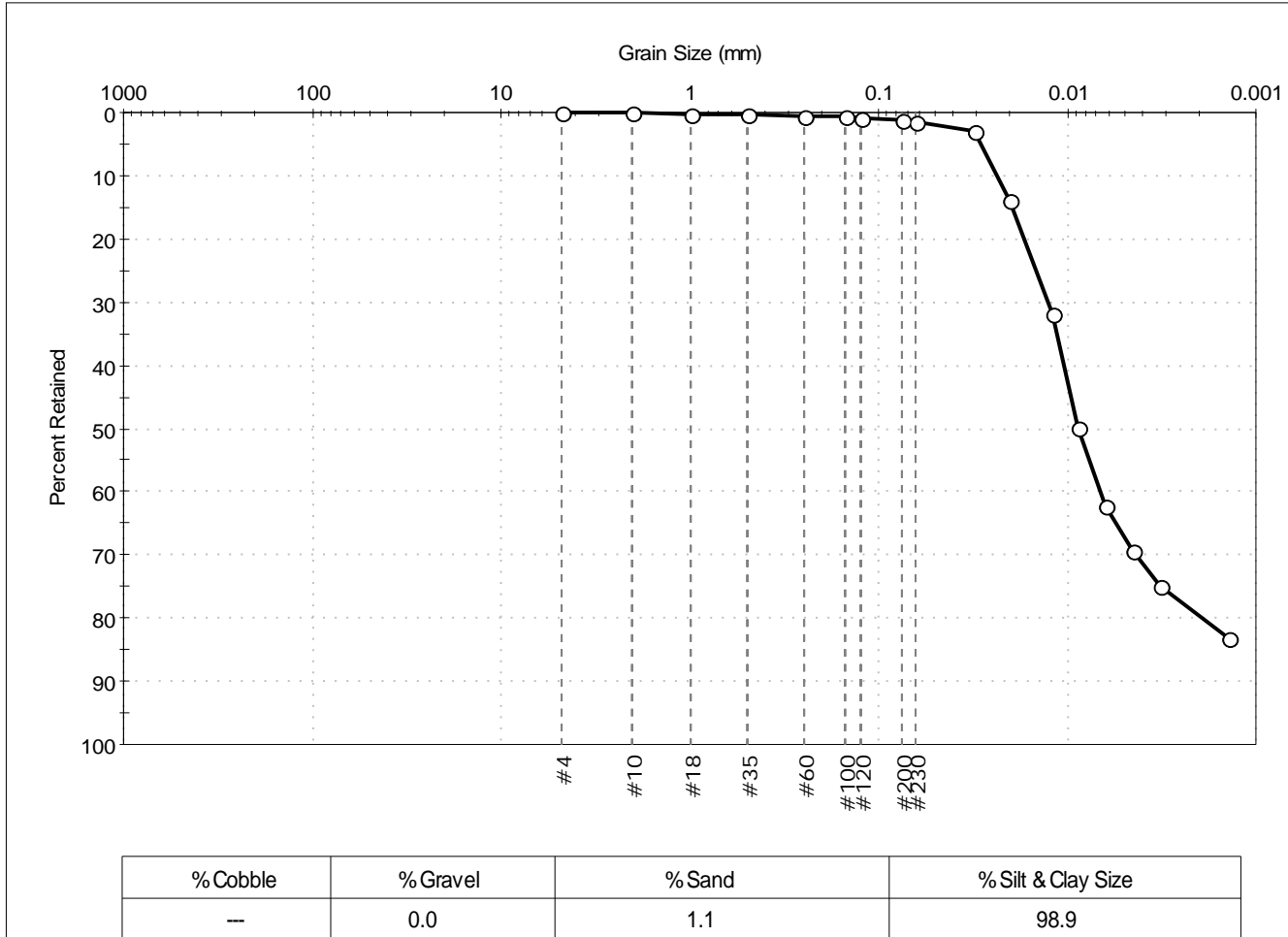
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 138-14LTM                               | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0220                              | Test Date: 11/18/14         | Test Id: 310218           |                        |
| Depth: ---   | Test Comment: ---           |                           |                        |
| Sample Description: Wet, very dark olive gray silt |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 1            |               |          |
| #230       | 0.063              | 1            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0310             | 3            |               |          |
| ---        | 0.0200             | 14           |               |          |
| ---        | 0.0119             | 32           |               |          |
| ---        | 0.0087             | 50           |               |          |
| ---        | 0.0063             | 62           |               |          |
| ---        | 0.0045             | 69           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0193 mm | D <sub>30</sub> = 0.0043 mm |
| D <sub>60</sub> = 0.0103 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0086 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

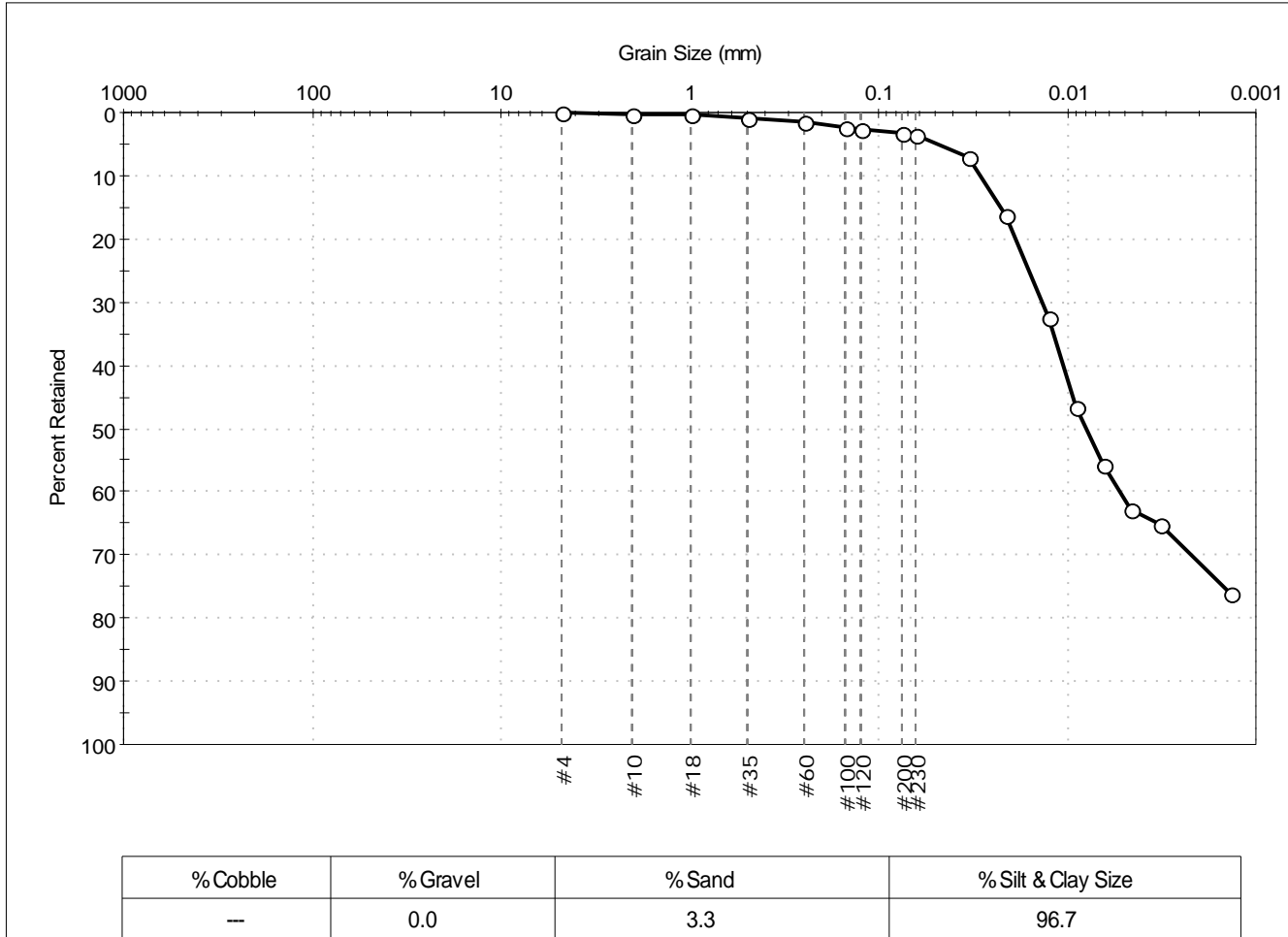
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                       | Project No: GTX-302366 |
| Boring ID: 138-14LTM                | Sample Type: bag            | Tested By: jbr                                  | Checked By: jdt        |
| Sample ID: NBH14-0221               | Test Date: 11/18/14         | Test Id: 310219                                 |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 4            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0330             | 7            |               |          |
| ---        | 0.0211             | 16           |               |          |
| ---        | 0.0125             | 33           |               |          |
| ---        | 0.0090             | 47           |               |          |
| ---        | 0.0064             | 56           |               |          |
| ---        | 0.0046             | 63           |               |          |
| ---        | 0.0032             | 65           |               |          |
| ---        | 0.0014             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0225 mm | D <sub>30</sub> = 0.0022 mm |
| D <sub>60</sub> = 0.0105 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0079 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

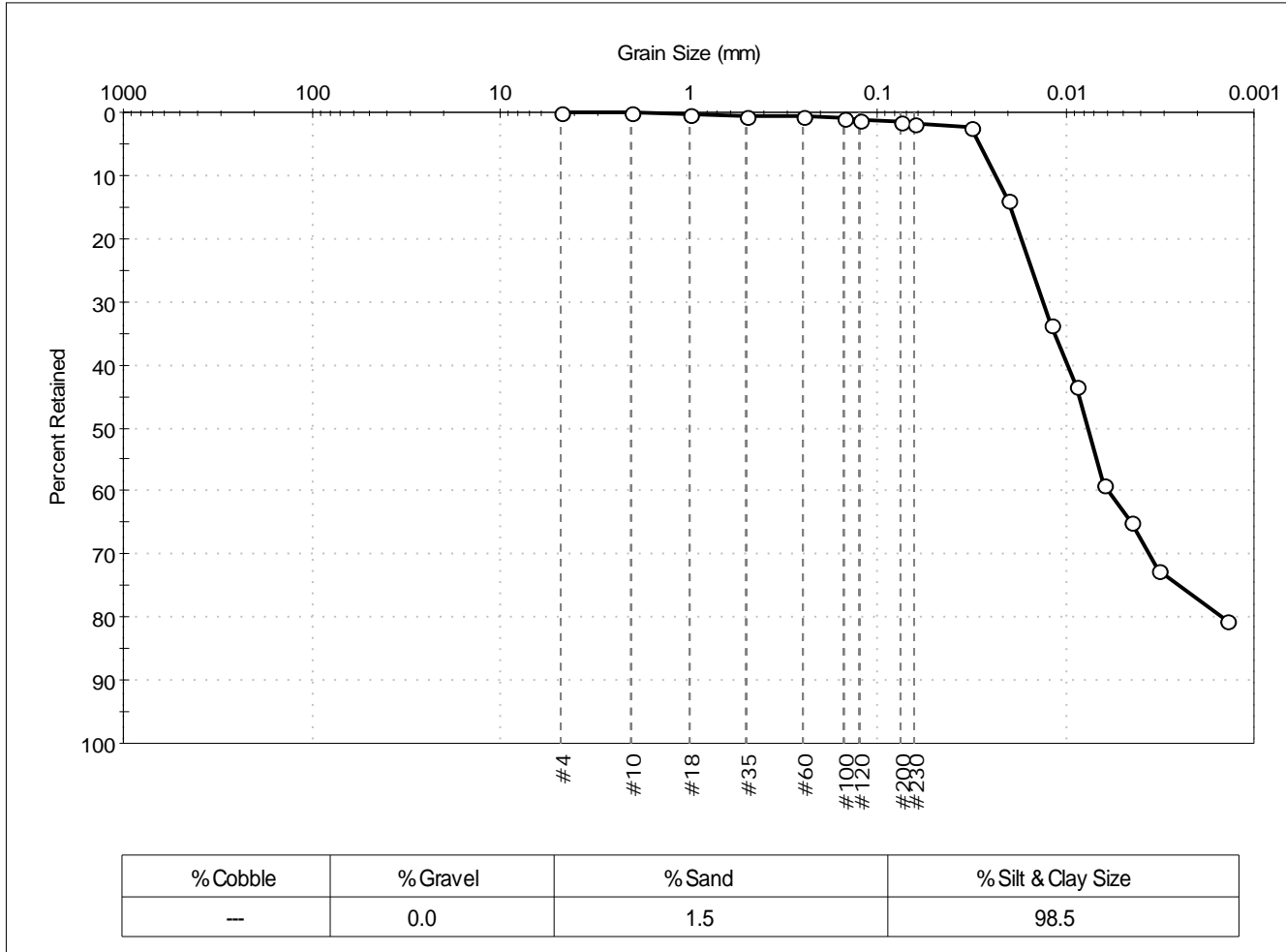
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute              | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 138-14LTM                             | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0222                            | Test Date: 11/12/14         | Depth: ---                | Test Id: 310220        |
| Test Comment: ---                                |                             |                           |                        |
| Sample Description: Wet, dark grayish brown silt |                             |                           |                        |
| Sample Comment: ---                              |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 2            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 2            |               |          |
| ---        | 0.0203             | 14           |               |          |
| ---        | 0.0120             | 34           |               |          |
| ---        | 0.0087             | 43           |               |          |
| ---        | 0.0063             | 59           |               |          |
| ---        | 0.0045             | 65           |               |          |
| ---        | 0.0032             | 73           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0198 mm | D <sub>30</sub> = 0.0036 mm |
| D <sub>60</sub> = 0.0097 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0076 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

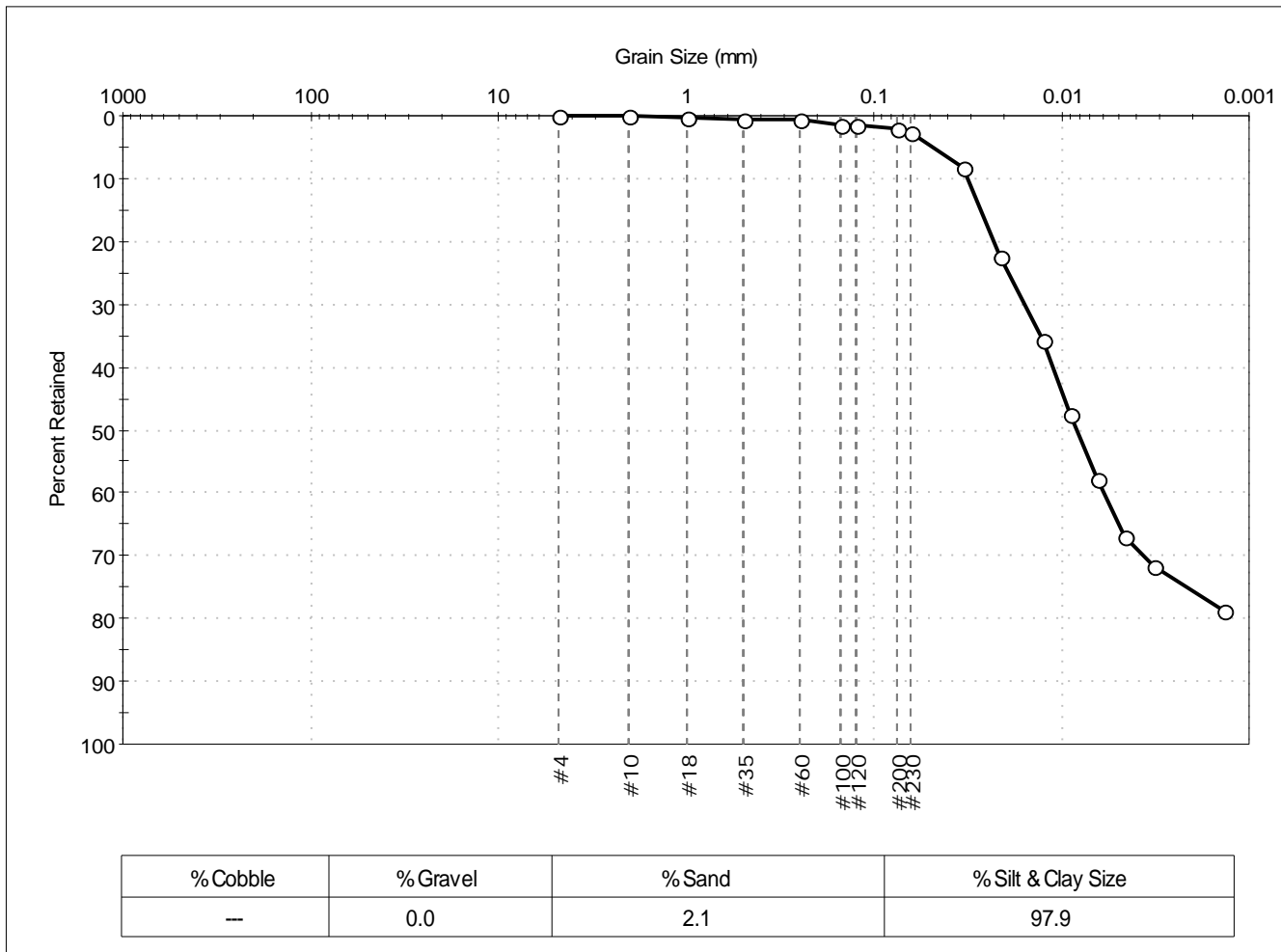
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 138-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0223               | Test Date: 11/18/14         | Test Id: 310221                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 2            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0330             | 8            |               |          |
| ---        | 0.0211             | 22           |               |          |
| ---        | 0.0125             | 36           |               |          |
| ---        | 0.0090             | 48           |               |          |
| ---        | 0.0064             | 58           |               |          |
| ---        | 0.0046             | 67           |               |          |
| ---        | 0.0033             | 72           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0267 mm | D <sub>30</sub> = 0.0037 mm |
| D <sub>60</sub> = 0.0111 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0083 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

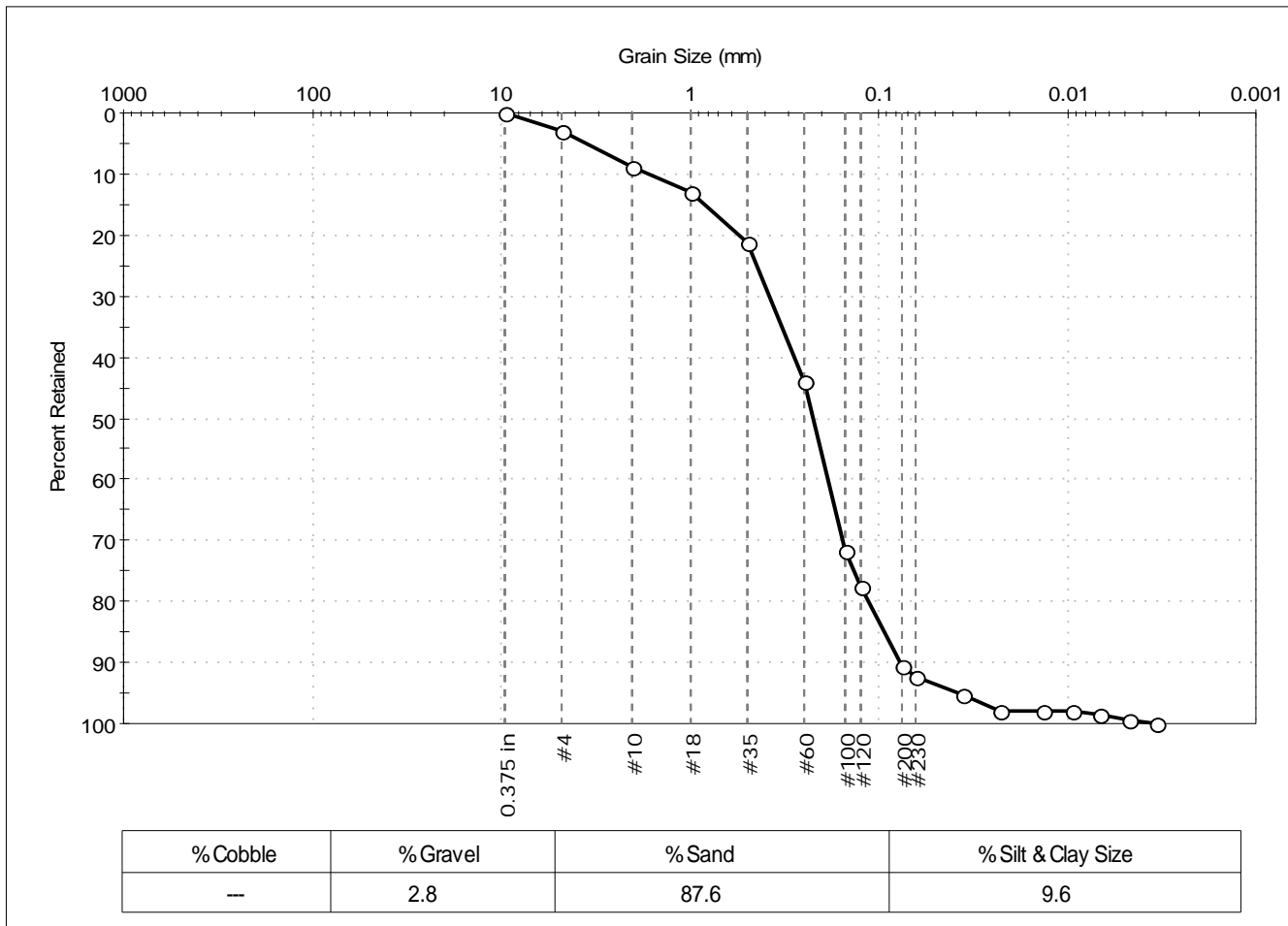
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                     |              |            |
|---------------------|-------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute         |              |            |
| Project:            | New Bedford Harbor                  |              |            |
| Location:           | New Bedford, MA                     | Project No:  | GTX-302366 |
| Boring ID:          | 126-14LTM                           | Sample Type: | bag        |
| Sample ID:          | NBH14-0224                          | Test Date:   | 11/17/14   |
| Depth:              | ---                                 | Test Id:     | 310222     |
| Test Comment:       | ---                                 |              |            |
| Sample Description: | Wet, dark olive gray sand with silt |              |            |
| Sample Comment:     | ---                                 |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 44           |               |          |
| #100       | 0.15               | 72           |               |          |
| #120       | 0.12               | 78           |               |          |
| #200       | 0.075              | 90.4         |               |          |
| #230       | 0.063              | 92           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0361             | 95           |               |          |
| ---        | 0.0230             | 98           |               |          |
| ---        | 0.0133             | 98           |               |          |
| ---        | 0.0094             | 98           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0034             | 100          |               |          |
| ---        | 0.0015             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.8472 mm | D <sub>30</sub> = 0.1545 mm |
| D <sub>60</sub> = 0.2824 mm | D <sub>15</sub> = 0.0932 mm |
| D <sub>50</sub> = 0.2236 mm | D <sub>10</sub> = 0.0763 mm |
| C <sub>u</sub> = 3.701      | C <sub>c</sub> = 1.108      |

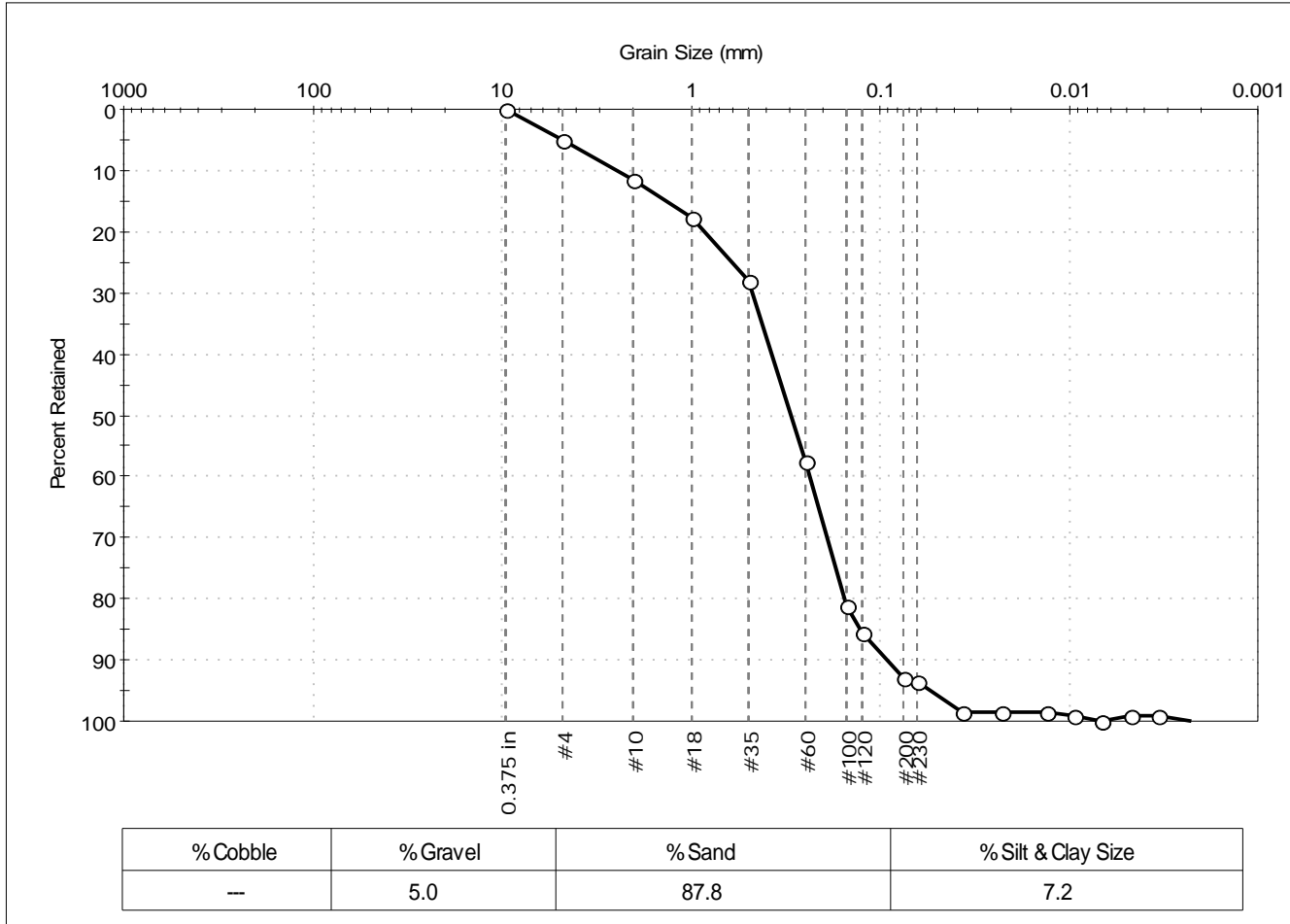
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                 | Project No: GTX-302366 |
| Boring ID: 126-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0225               | Test Date: 11/12/14         | Test Id: 310223   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray sand with silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 11           |               |          |
| #18        | 1.00               | 18           |               |          |
| #35        | 0.50               | 28           |               |          |
| #60        | 0.25               | 57           |               |          |
| #100       | 0.15               | 81           |               |          |
| #120       | 0.12               | 85           |               |          |
| #200       | 0.075              | 92.8         |               |          |
| #230       | 0.063              | 94           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0366             | 99           |               |          |
| ---        | 0.0228             | 99           |               |          |
| ---        | 0.0133             | 99           |               |          |
| ---        | 0.0095             | 99           |               |          |
| ---        | 0.0067             | 100          |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0015             | 101          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.3342 mm | D <sub>30</sub> = 0.1908 mm |
| D <sub>60</sub> = 0.3768 mm | D <sub>15</sub> = 0.1273 mm |
| D <sub>50</sub> = 0.2979 mm | D <sub>10</sub> = 0.0910 mm |
| C <sub>u</sub> = 4.141      | C <sub>c</sub> = 1.062      |

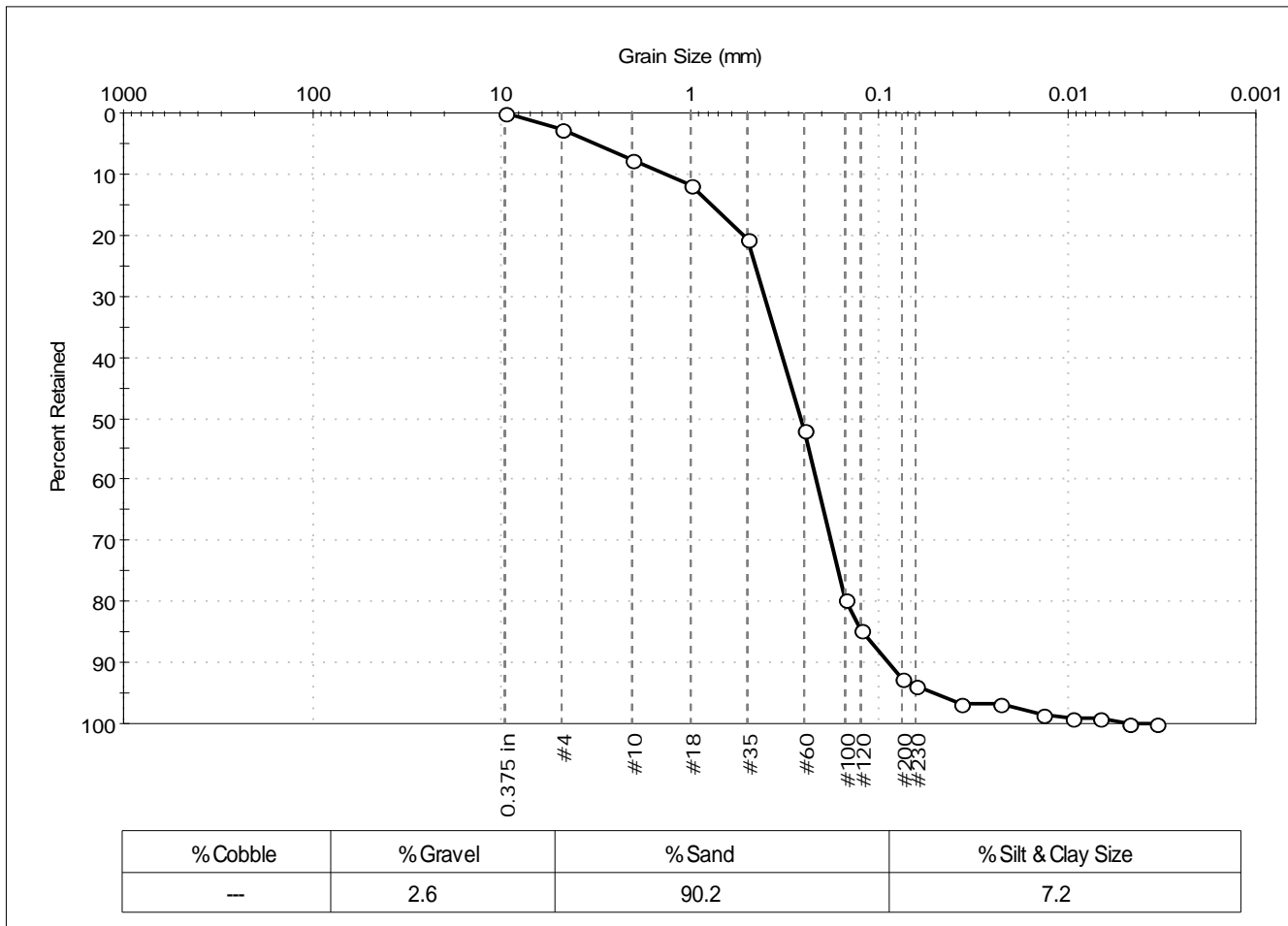
| <u>Classification</u>                               |     |
|---|-----|
| ASTM  | N/A |
| AASHTO Stone Fragments, Gravel and Sand (A-1-b (1)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                       |              |            |
|---------------------|---------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute           |              |            |
| Project:            | New Bedford Harbor                    |              |            |
| Location:           | New Bedford, MA                       | Project No:  | GTX-302366 |
| Boring ID:          | 126-14LTM                             | Sample Type: | bag        |
| Sample ID:          | NBH14-0226                            | Test Date:   | 11/14/14   |
| Depth:              | ---                                   | Test Id:     | 310224     |
| Test Comment:       | ---                                   |              |            |
| Sample Description: | Moist, dark olive gray sand with silt |              |            |
| Sample Comment:     | ---                                   |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 52           |               |          |
| #100       | 0.15               | 80           |               |          |
| #120       | 0.12               | 85           |               |          |
| #200       | 0.075              | 92.8         |               |          |
| #230       | 0.063              | 94           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0364             | 97           |               |          |
| ---        | 0.0230             | 97           |               |          |
| ---        | 0.0134             | 98           |               |          |
| ---        | 0.0095             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0048             | 100          |               |          |
| ---        | 0.0034             | 100          |               |          |
| ---        | 0.0015             | 101          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7797 mm | D <sub>30</sub> = 0.1790 mm |
| D <sub>60</sub> = 0.3261 mm | D <sub>15</sub> = 0.1222 mm |
| D <sub>50</sub> = 0.2612 mm | D <sub>10</sub> = 0.0892 mm |
| C <sub>u</sub> = 3.656      | C <sub>c</sub> = 1.102      |

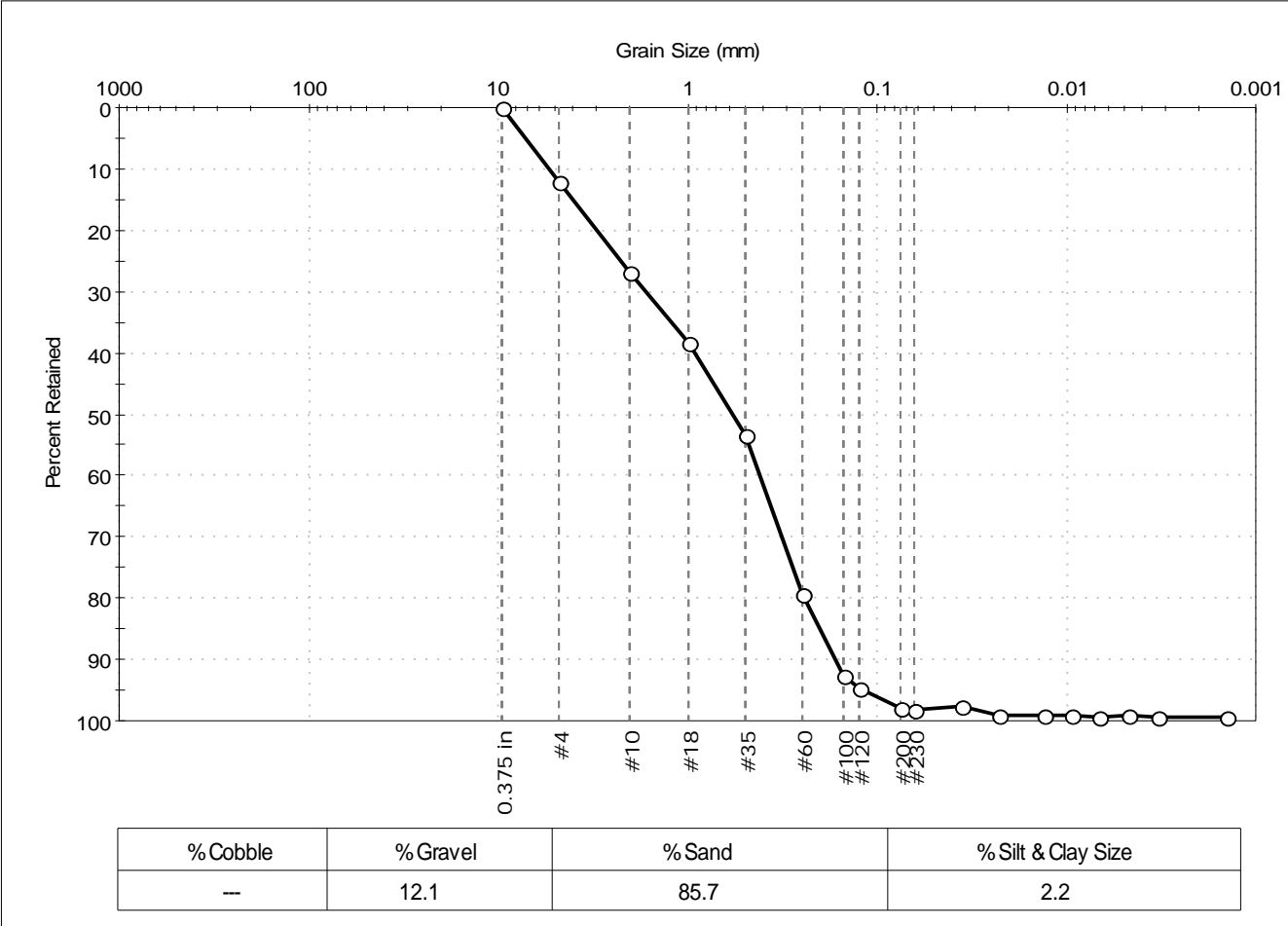
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 126-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0227               | Test Date: 11/17/14         | Test Id: 310225                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 27           |               |          |
| #18        | 1.00               | 38           |               |          |
| #35        | 0.50               | 54           |               |          |
| #60        | 0.25               | 79           |               |          |
| #100       | 0.15               | 93           |               |          |
| #120       | 0.12               | 95           |               |          |
| #200       | 0.075              | 97.8         |               |          |
| #230       | 0.063              | 98           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0360             | 98           |               |          |
| ---        | 0.0230             | 99           |               |          |
| ---        | 0.0133             | 99           |               |          |
| ---        | 0.0094             | 99           |               |          |
| ---        | 0.0067             | 99           |               |          |
| ---        | 0.0047             | 99           |               |          |
| ---        | 0.0033             | 99           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 4.0033 mm | D <sub>30</sub> = 0.3214 mm |
| D <sub>60</sub> = 0.9226 mm | D <sub>15</sub> = 0.2013 mm |
| D <sub>50</sub> = 0.5867 mm | D <sub>10</sub> = 0.1662 mm |
| C <sub>u</sub> = 5.551      | C <sub>c</sub> = 0.674      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | Poorly graded sand (SP)                      |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

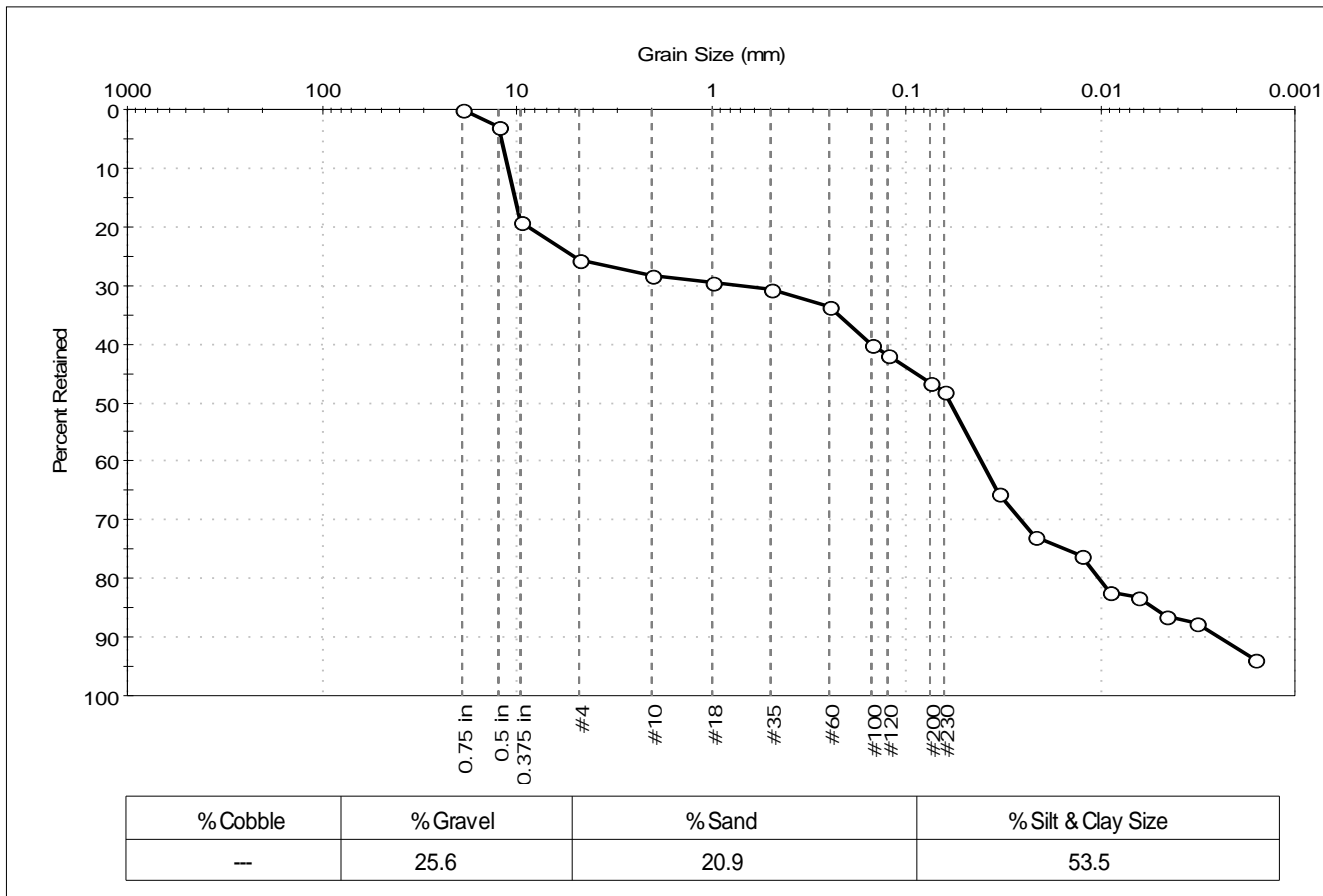
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 108-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0228   | Test Date: 11/17/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310226             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark olive gray gravelly silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 3            |               |          |
| 0.375 in   | 9.50               | 19           |               |          |
| #4         | 4.75               | 26           |               |          |
| #10        | 2.00               | 28           |               |          |
| #18        | 1.00               | 29           |               |          |
| #35        | 0.50               | 31           |               |          |
| #60        | 0.25               | 34           |               |          |
| #100       | 0.15               | 40           |               |          |
| #120       | 0.12               | 42           |               |          |
| #200       | 0.075              | 46           |               |          |
| #230       | 0.063              | 48           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0332             | 66           |               |          |
| ---        | 0.0216             | 73           |               |          |
| ---        | 0.0126             | 76           |               |          |
| ---        | 0.0090             | 82           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0016             | 94           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 10.2068 mm | D <sub>30</sub> = 0.0256 mm |
| D <sub>60</sub> = 0.1514 mm  | D <sub>15</sub> = 0.0053 mm |
| D <sub>50</sub> = 0.0588 mm  | D <sub>10</sub> = 0.0024 mm |
| C <sub>u</sub> = 63.083      | C <sub>c</sub> = 1.804      |

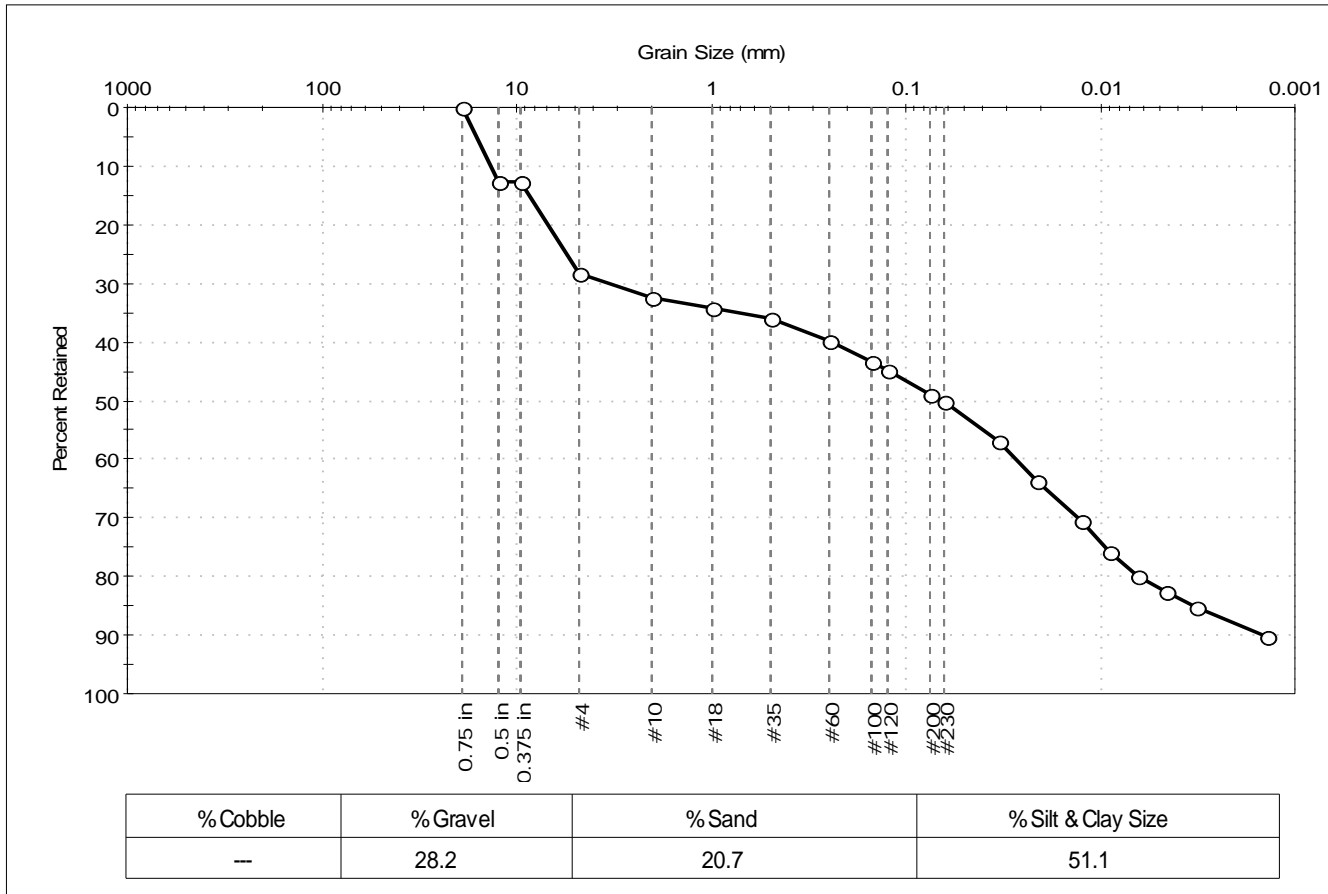
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u> |                          |
|--------------------------------|--------------------------|
| Sand/Gravel Particle Shape :   | ROUNDED                  |
| Sand/Gravel Hardness :         | HARD                     |
| Dispersion Device :            | Apparatus A - Mech Mixer |
| Dispersion Period :            | 1 minute                 |
| Specific Gravity :             | 2.65                     |
| Separation of Sample :         | #230 Sieve               |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                               | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 108-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0229   | Test Date: 11/18/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310227             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Moist, very dark gray gravelly silt with sand |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 13           |               |          |
| 0.375 in   | 9.50               | 13           |               |          |
| #4         | 4.75               | 28           |               |          |
| #10        | 2.00               | 32           |               |          |
| #18        | 1.00               | 34           |               |          |
| #35        | 0.50               | 36           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 43           |               |          |
| #120       | 0.12               | 45           |               |          |
| #200       | 0.075              | 49           |               |          |
| #230       | 0.063              | 50           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0332             | 57           |               |          |
| ---        | 0.0214             | 64           |               |          |
| ---        | 0.0126             | 70           |               |          |
| ---        | 0.0090             | 76           |               |          |
| ---        | 0.0064             | 80           |               |          |
| ---        | 0.0046             | 83           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0014             | 90           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 8.5312 mm | D <sub>30</sub> = 0.0130 mm |
| D <sub>60</sub> = 0.2417 mm | D <sub>15</sub> = 0.0033 mm |
| D <sub>50</sub> = 0.0652 mm | D <sub>10</sub> = 0.0014 mm |
| C <sub>u</sub> = 172.643    | C <sub>c</sub> = 0.499      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

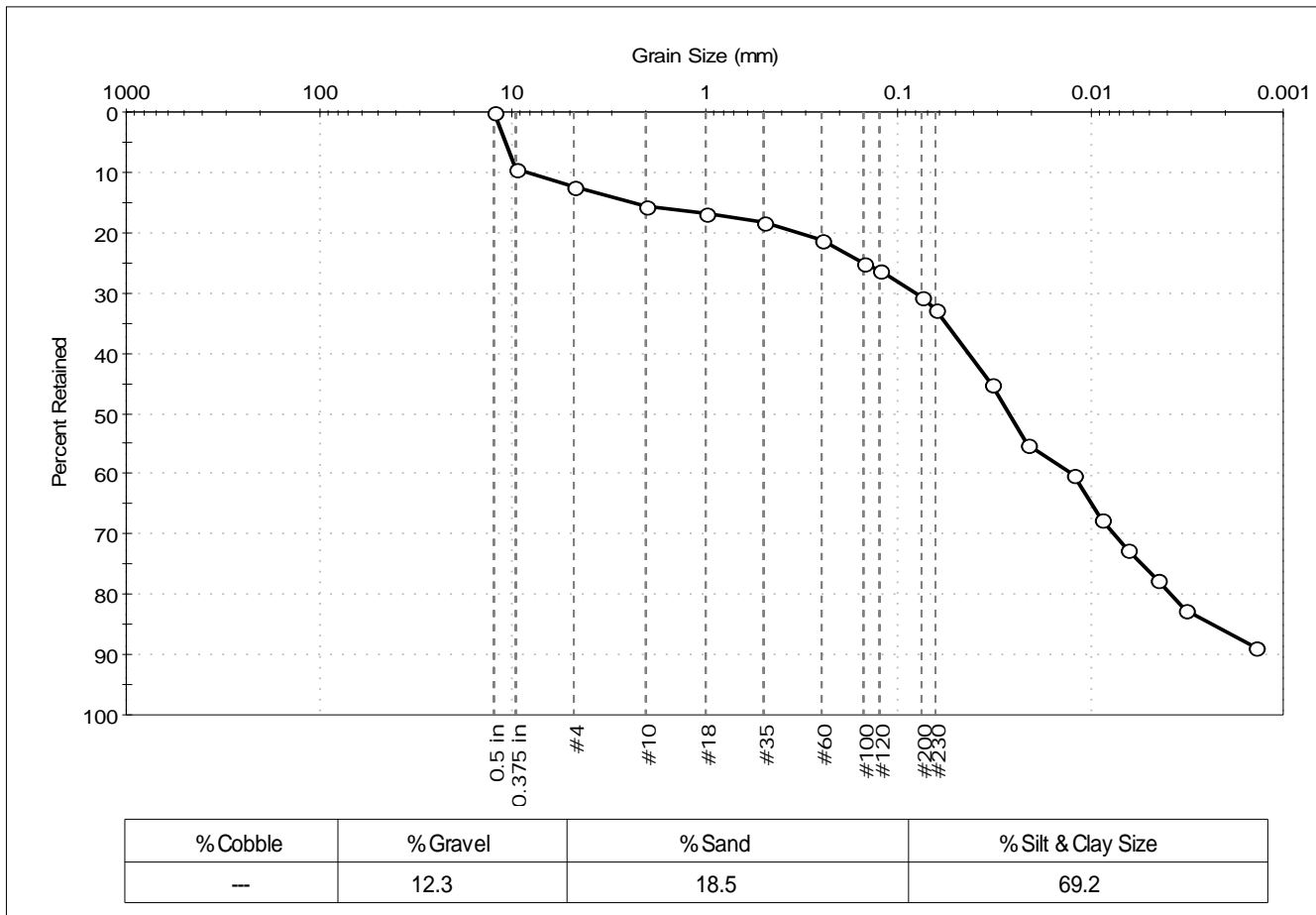
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                        | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 108-14LTM                                       | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0230                                      | Test Date: 11/17/14         | Test Id: 310228           |                        |
| Depth: ---   |                             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Moist, very dark olive gray snady silt |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 10           |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 16           |               |          |
| #18        | 1.00               | 17           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 21           |               |          |
| #100       | 0.15               | 25           |               |          |
| #120       | 0.12               | 26           |               |          |
| #200       | 0.075              | 31           |               |          |
| #230       | 0.063              | 33           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 45           |               |          |
| ---        | 0.0211             | 55           |               |          |
| ---        | 0.0123             | 60           |               |          |
| ---        | 0.0089             | 68           |               |          |
| ---        | 0.0064             | 73           |               |          |
| ---        | 0.0045             | 78           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 2.3725 mm | D <sub>30</sub> = 0.0076 mm |
| D <sub>60</sub> = 0.0427 mm | D <sub>15</sub> = 0.0023 mm |
| D <sub>50</sub> = 0.0263 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

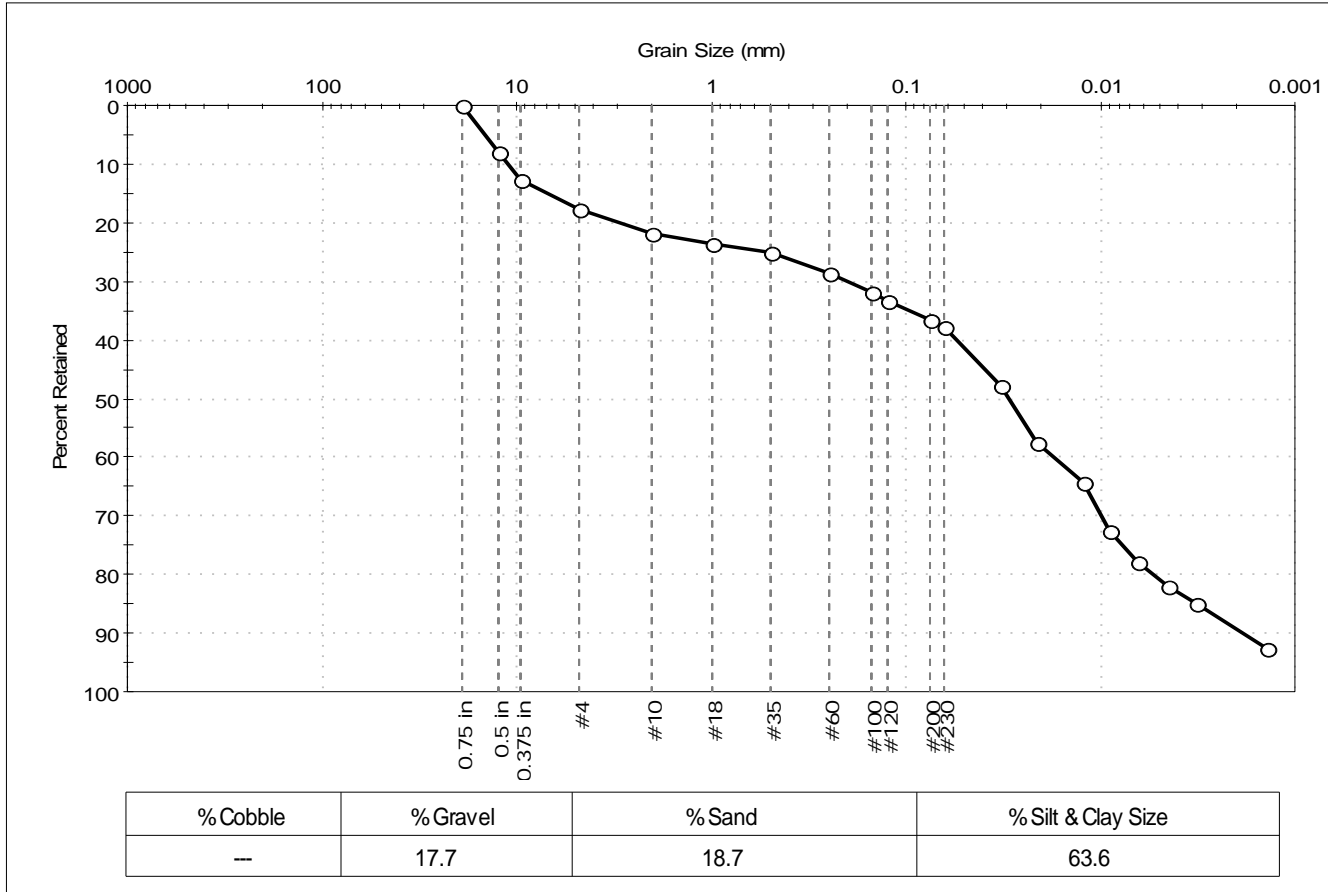
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                            | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 108-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0231  | Test Date: 11/18/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310229             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Wet, very dark gray sandy silt with gravel |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 8            |               |          |
| 0.375 in   | 9.50               | 13           |               |          |
| #4         | 4.75               | 18           |               |          |
| #10        | 2.00               | 22           |               |          |
| #18        | 1.00               | 24           |               |          |
| #35        | 0.50               | 25           |               |          |
| #60        | 0.25               | 29           |               |          |
| #100       | 0.15               | 32           |               |          |
| #120       | 0.12               | 33           |               |          |
| #200       | 0.075              | 36           |               |          |
| #230       | 0.063              | 38           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0327             | 48           |               |          |
| ---        | 0.0212             | 57           |               |          |
| ---        | 0.0123             | 64           |               |          |
| ---        | 0.0089             | 73           |               |          |
| ---        | 0.0064             | 78           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 6.8533 mm | D <sub>30</sub> = 0.0099 mm |
| D <sub>60</sub> = 0.0546 mm | D <sub>15</sub> = 0.0032 mm |
| D <sub>50</sub> = 0.0296 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 28.737     | C <sub>c</sub> = 0.945      |

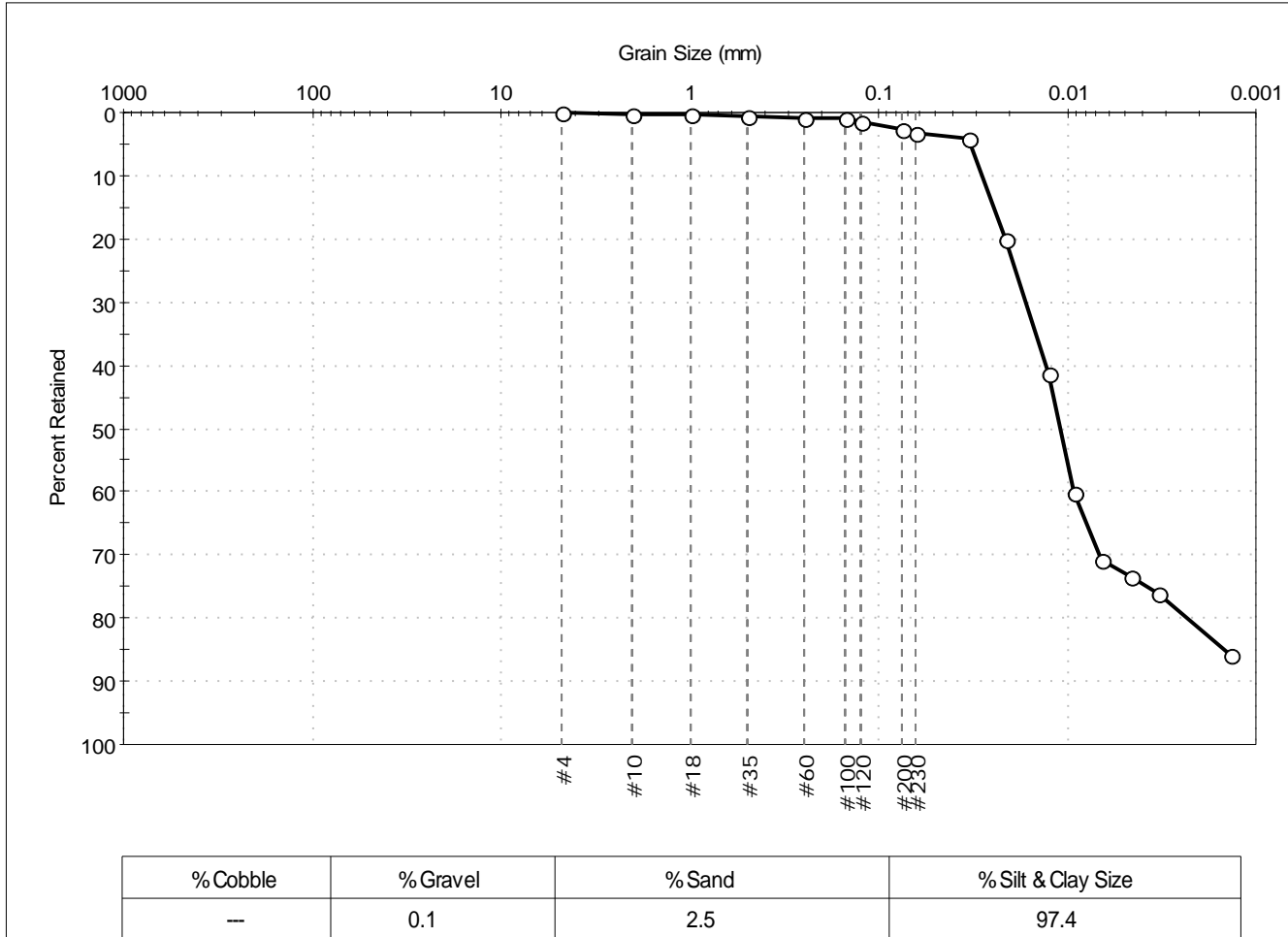
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute           | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 231-14LTM                          | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0235                         | Test Date: 11/12/14         | Test Id: 310193           |                        |
| Depth: ---                                    |                             |                           |                        |
| Test Comment: ---                             |                             |                           |                        |
| Sample Description: Wet, dark olive gray silt |                             |                           |                        |
| Sample Comment: ---                           |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0331             | 4            |               |          |
| ---        | 0.0214             | 20           |               |          |
| ---        | 0.0126             | 41           |               |          |
| ---        | 0.0091             | 60           |               |          |
| ---        | 0.0065             | 71           |               |          |
| ---        | 0.0047             | 73           |               |          |
| ---        | 0.0033             | 76           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0246 mm | D <sub>30</sub> = 0.0067 mm |
| D <sub>60</sub> = 0.0131 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0109 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

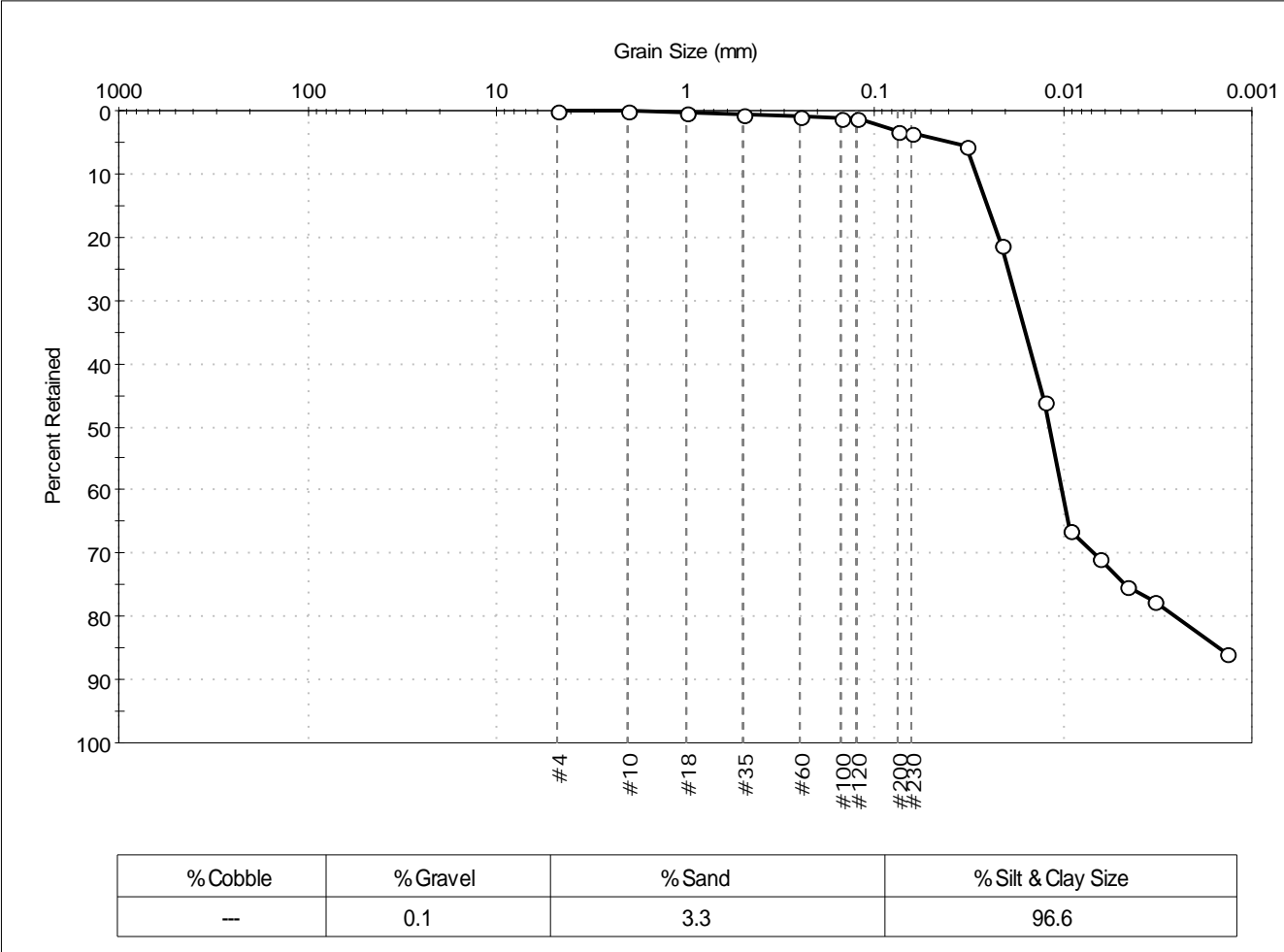
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 231-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0236                  | Test Date:   | 11/12/14   |
| Depth:              | ---                         | Test Id:     | 310194     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 1            |               |          |
| #120       | 0.12               | 1            |               |          |
| #200       | 0.075              | 3            |               |          |
| #230       | 0.063              | 3            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 6            |               |          |
| ---        | 0.0210             | 21           |               |          |
| ---        | 0.0126             | 46           |               |          |
| ---        | 0.0091             | 66           |               |          |
| ---        | 0.0065             | 71           |               |          |
| ---        | 0.0046             | 75           |               |          |
| ---        | 0.0033             | 78           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0250 mm | D <sub>30</sub> = 0.0069 mm |
| D <sub>60</sub> = 0.0142 mm | D <sub>15</sub> = 0.0015 mm |
| D <sub>50</sub> = 0.0118 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

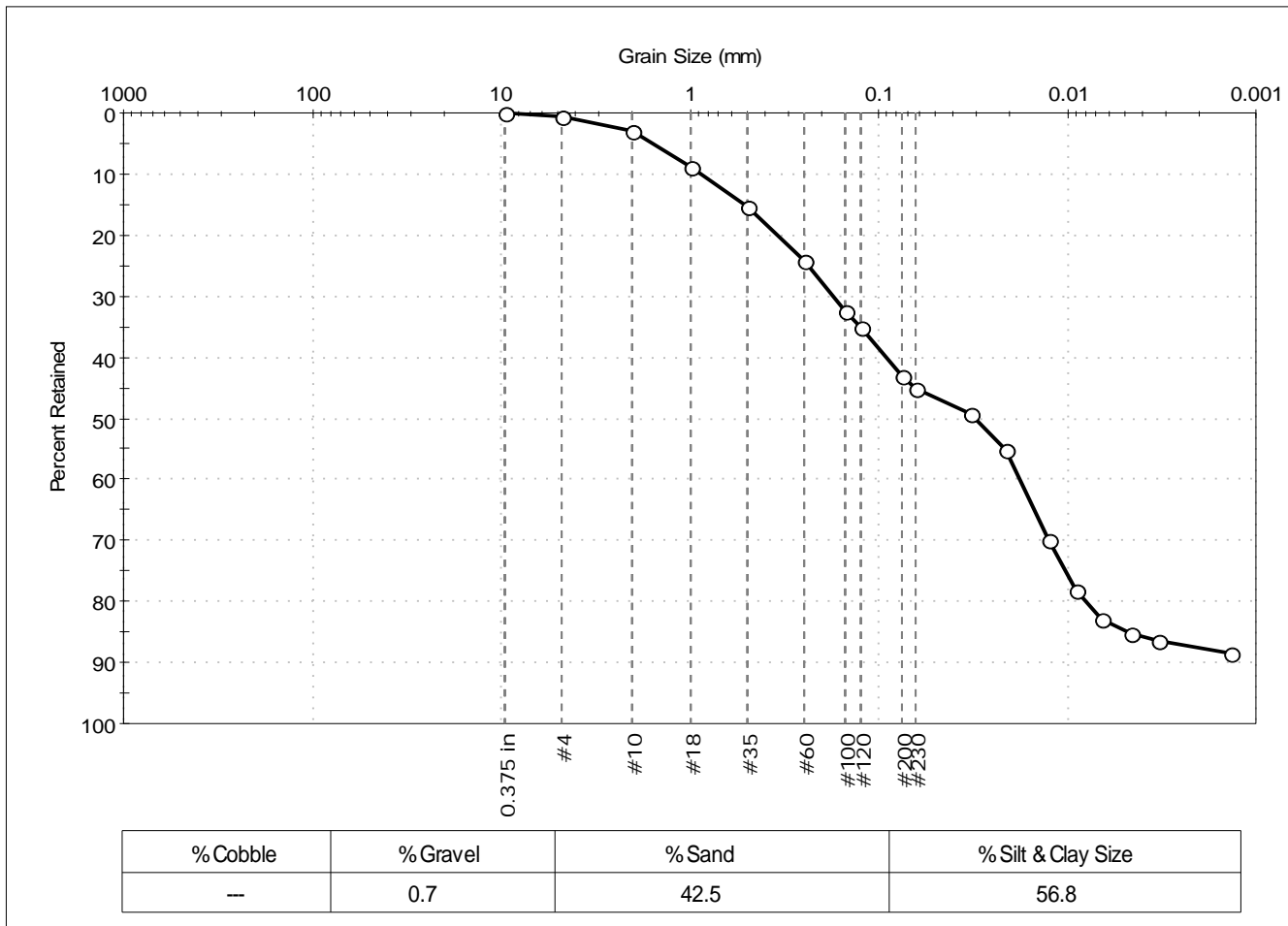
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                         | Project No: GTX-302366 |
| Project: New Bedford Harbor                                 |                        |
| Location: New Bedford, MA                                   |                        |
| Boring ID: 222-14LTM  | Sample Type: bag       |
| Sample ID: NBH14-0237                                       | Test Date: 11/18/14    |
| Depth: ---  | Test Id: 310459        |
| Test Comment: ---   | Tested By: jbr         |
| Sample Description: Wet, very dark grayish brown sandy silt | Checked By: jdt        |
| Sample Comment: ---   |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 15           |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 33           |               |          |
| #120       | 0.12               | 35           |               |          |
| #200       | 0.075              | 43           |               |          |
| #230       | 0.063              | 45           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 49           |               |          |
| ---        | 0.0210             | 55           |               |          |
| ---        | 0.0126             | 70           |               |          |
| ---        | 0.0091             | 78           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5248 mm | D <sub>30</sub> = 0.0126 mm |
| D <sub>60</sub> = 0.0914 mm | D <sub>15</sub> = 0.0047 mm |
| D <sub>50</sub> = 0.0309 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

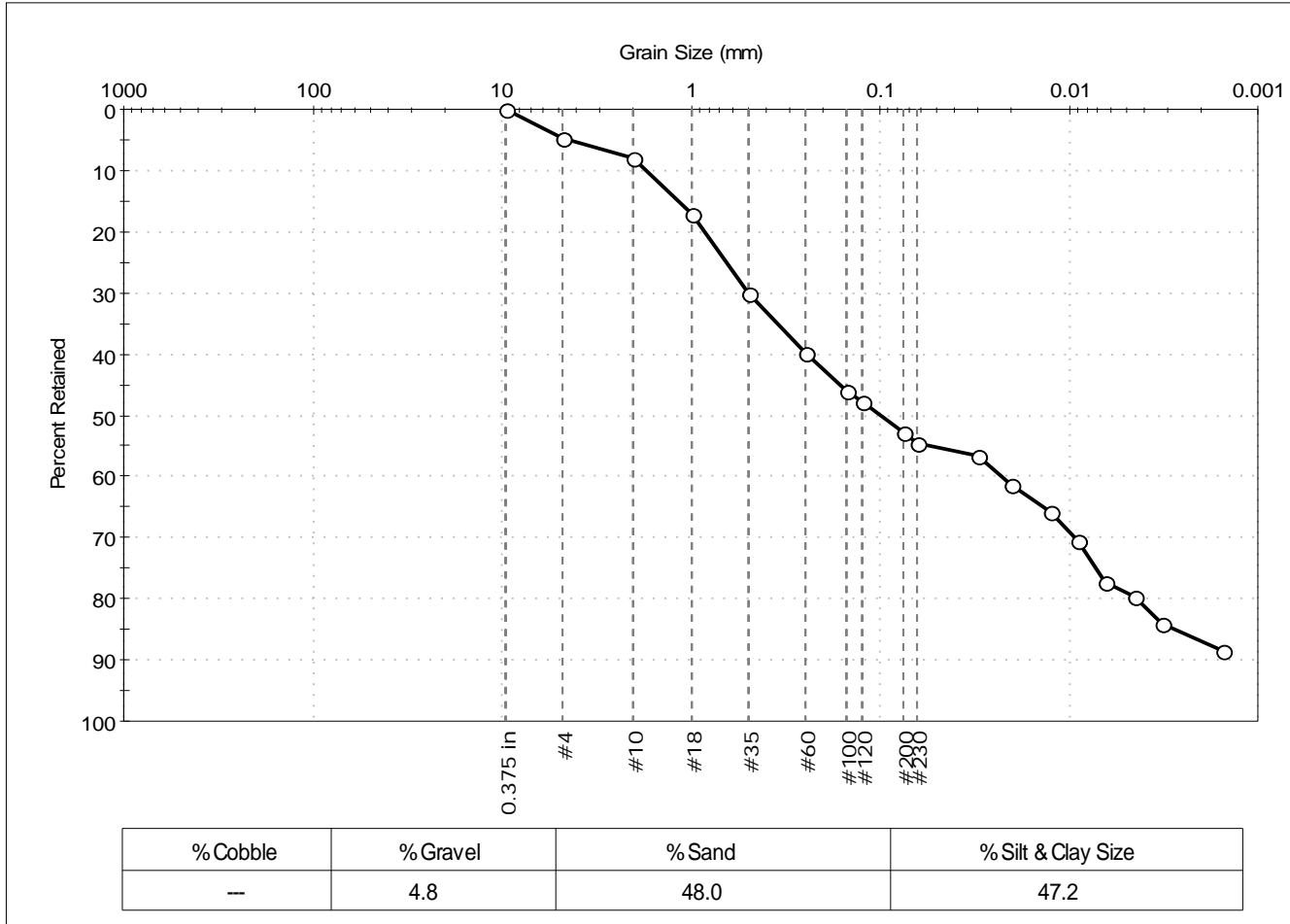
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 222-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0238                  | Test Date:   | 11/03/14   |
| Depth:              | ---                         | Test Id:     | 310542     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark gray silty sand   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 17           |               |          |
| #35        | 0.50               | 30           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 46           |               |          |
| #120       | 0.12               | 48           |               |          |
| #200       | 0.075              | 53           |               |          |
| #230       | 0.063              | 55           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0304             | 57           |               |          |
| ---        | 0.0204             | 61           |               |          |
| ---        | 0.0124             | 66           |               |          |
| ---        | 0.0089             | 70           |               |          |
| ---        | 0.0064             | 77           |               |          |
| ---        | 0.0046             | 80           |               |          |
| ---        | 0.0032             | 84           |               |          |
| ---        | 0.0015             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 1.1746 mm | D <sub>30</sub> = 0.0091 mm |
| D <sub>60</sub> = 0.2493 mm | D <sub>15</sub> = 0.0027 mm |
| D <sub>50</sub> = 0.0990 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

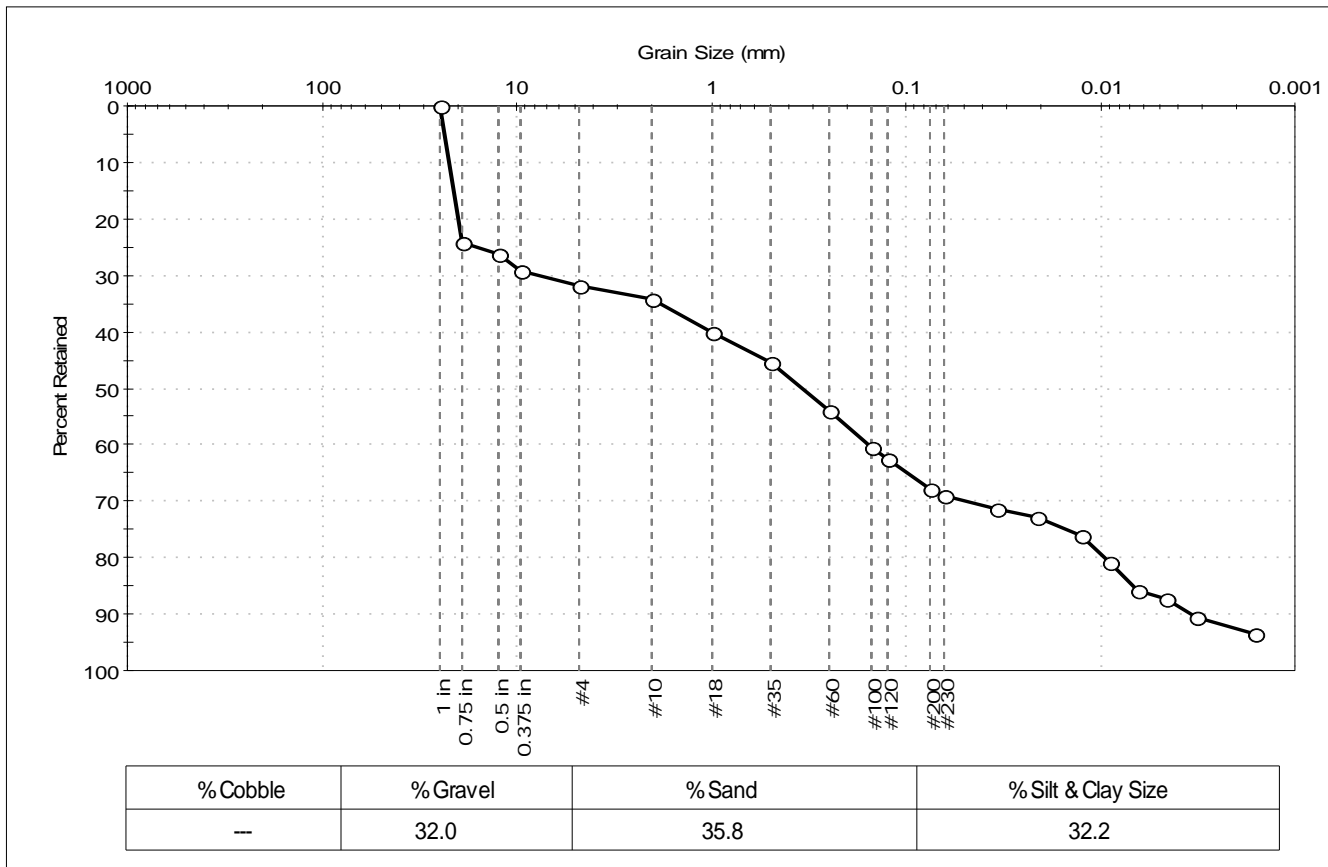
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 222-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0239  
 Test Date: 11/03/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310543  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silty sand with gravel  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 24           |               |          |
| 0.5 in     | 12.50              | 26           |               |          |
| 0.375 in   | 9.50               | 29           |               |          |
| #4         | 4.75               | 32           |               |          |
| #10        | 2.00               | 34           |               |          |
| #18        | 1.00               | 40           |               |          |
| #35        | 0.50               | 45           |               |          |
| #60        | 0.25               | 54           |               |          |
| #100       | 0.15               | 60           |               |          |
| #120       | 0.12               | 62           |               |          |
| #200       | 0.075              | 68           |               |          |
| #230       | 0.063              | 69           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0340             | 71           |               |          |
| ---        | 0.0213             | 73           |               |          |
| ---        | 0.0124             | 76           |               |          |
| ---        | 0.0089             | 81           |               |          |
| ---        | 0.0064             | 86           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0032             | 90           |               |          |
| ---        | 0.0016             | 94           |               |          |

**Coefficients**

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 21.0691 mm | D <sub>30</sub> = 0.0483 mm |
| D <sub>60</sub> = 1.0145 mm  | D <sub>15</sub> = 0.0068 mm |
| D <sub>50</sub> = 0.3454 mm  | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 298.382     | C <sub>c</sub> = 0.676      |

**Classification**

**ASTM**    N/A  
**AASHTO**    Silty Gravel and Sand (A-2-4 (0))

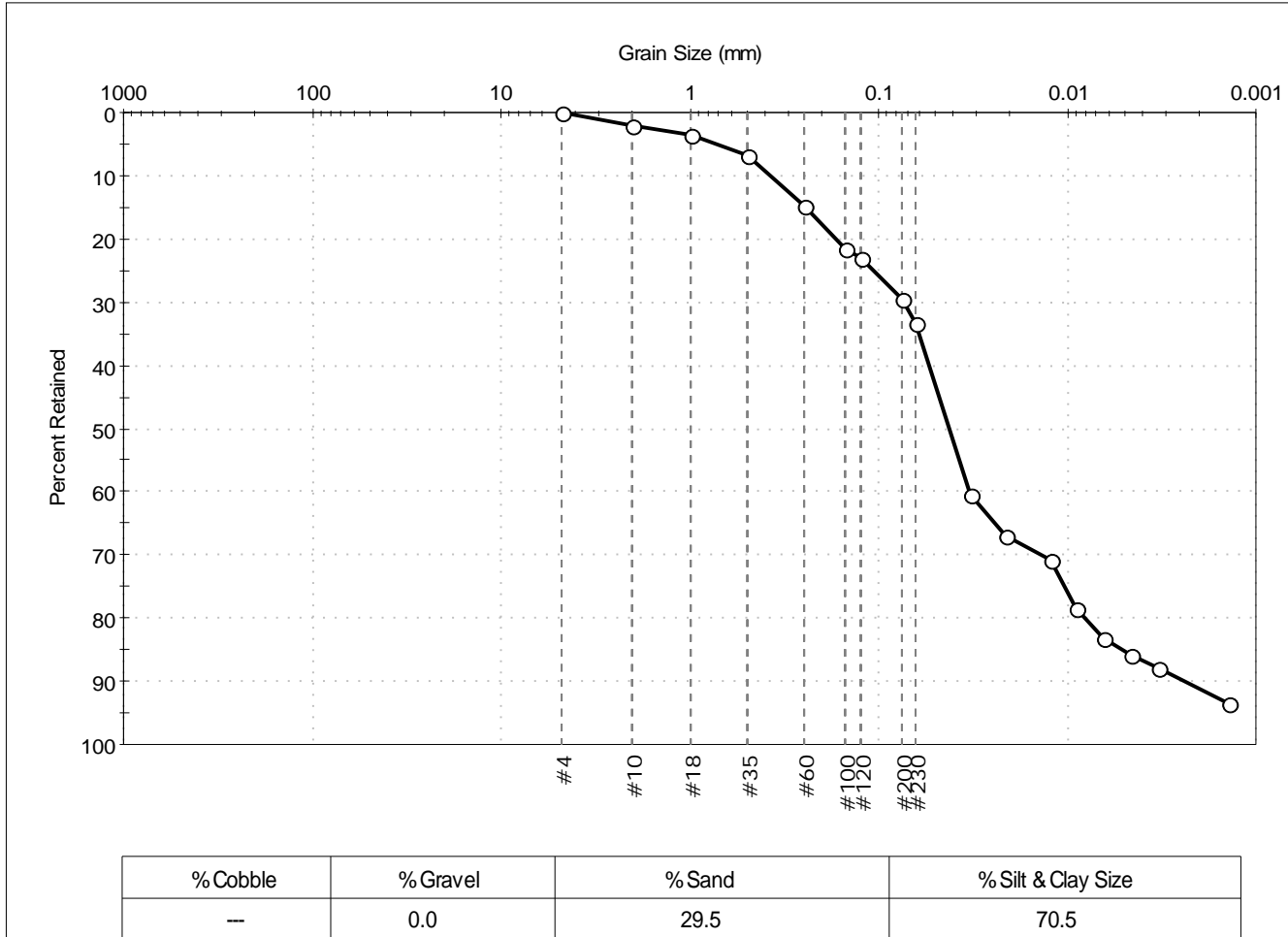
**Sample/Test Description**

Sand/Gravel Particle Shape : ANGULAR  
 Sand/Gravel Hardness : HARD  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                           | Project No: GTX-302366 |
| Boring ID: 222-14LTM                | Sample Type: bag            | Tested By: jbr                                      | Checked By: jdt        |
| Sample ID: NBH14-0240               | Test Date: 10/30/14         | Test Id: 310544                                     |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive brown silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 23           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 33           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 60           |               |          |
| ---        | 0.0212             | 67           |               |          |
| ---        | 0.0124             | 71           |               |          |
| ---        | 0.0090             | 78           |               |          |
| ---        | 0.0064             | 83           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 88           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2446 mm | D <sub>30</sub> = 0.0139 mm |
| D <sub>60</sub> = 0.0536 mm | D <sub>15</sub> = 0.0051 mm |
| D <sub>50</sub> = 0.0420 mm | D <sub>10</sub> = 0.0023 mm |
| C <sub>u</sub> = 23.304     | C <sub>c</sub> = 1.567      |

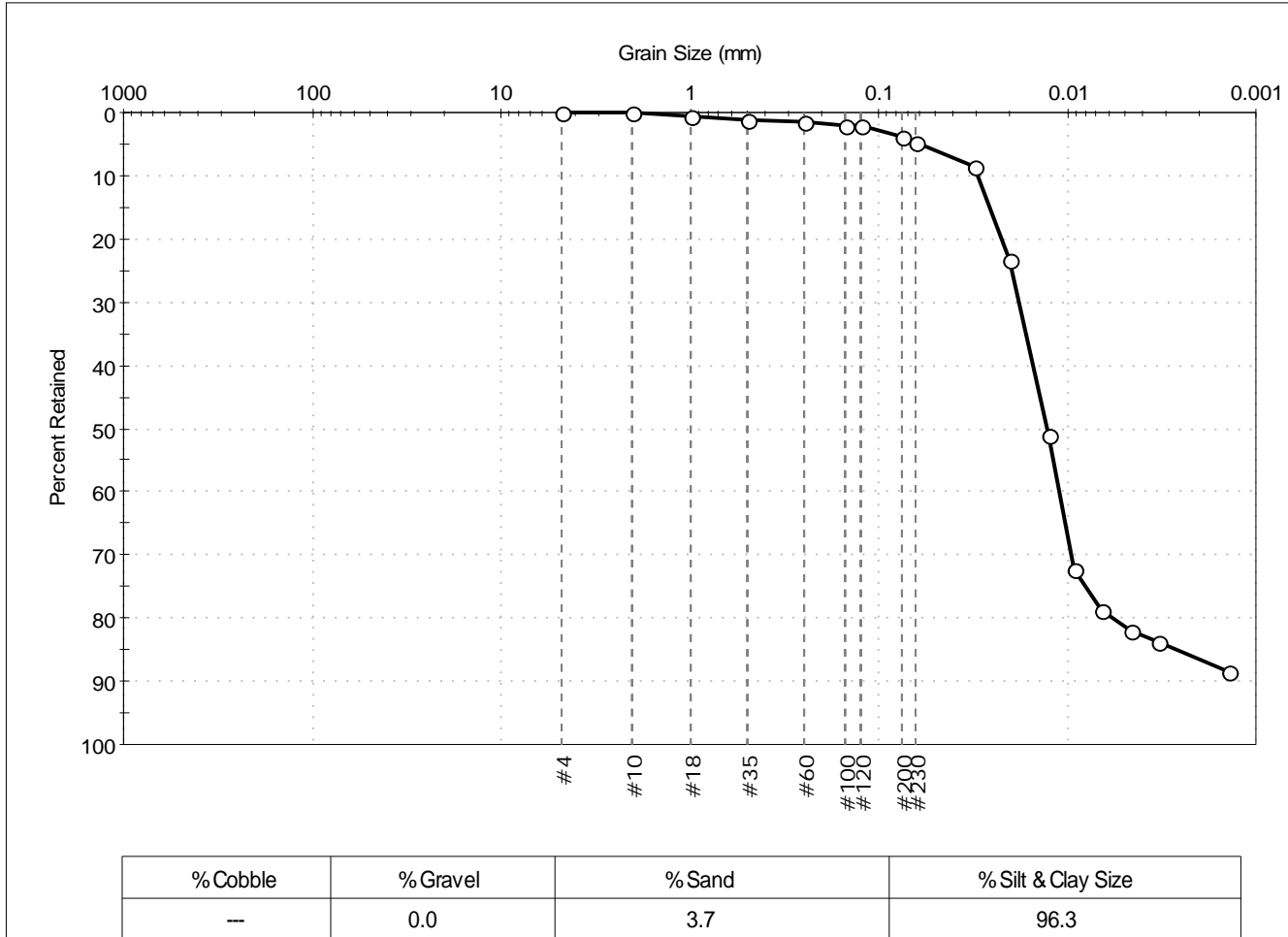
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 224-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0241                  | Test Date:   | 11/17/14   |
| Depth:              | ---                         | Test Id:     | 310460     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Moist, very dark gray silt  |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0311             | 9            |               |          |
| ---        | 0.0203             | 23           |               |          |
| ---        | 0.0124             | 51           |               |          |
| ---        | 0.0091             | 72           |               |          |
| ---        | 0.0065             | 79           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0258 mm | D <sub>30</sub> = 0.0094 mm |
| D <sub>60</sub> = 0.0151 mm | D <sub>15</sub> = 0.0026 mm |
| D <sub>50</sub> = 0.0126 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

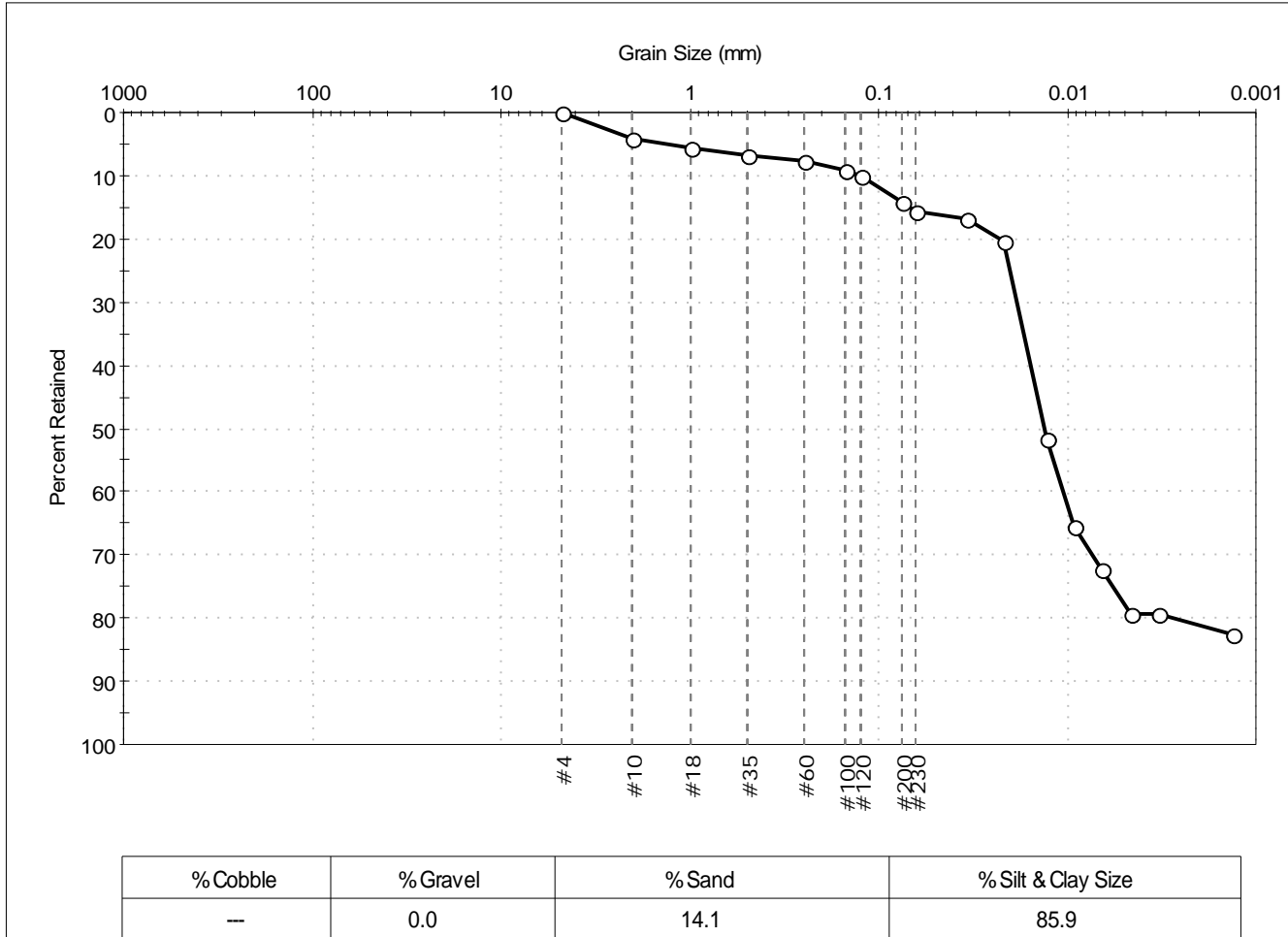
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 224-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0242               | Test Date: 10/27/14         | Test Id: 310461                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 8            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 14           |               |          |
| #230       | 0.063              | 16           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0342             | 17           |               |          |
| ---        | 0.0217             | 20           |               |          |
| ---        | 0.0128             | 51           |               |          |
| ---        | 0.0092             | 65           |               |          |
| ---        | 0.0065             | 72           |               |          |
| ---        | 0.0047             | 79           |               |          |
| ---        | 0.0033             | 79           |               |          |
| ---        | 0.0013             | 83           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0677 mm | D <sub>30</sub> = 0.0073 mm |
| D <sub>60</sub> = 0.0156 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0132 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

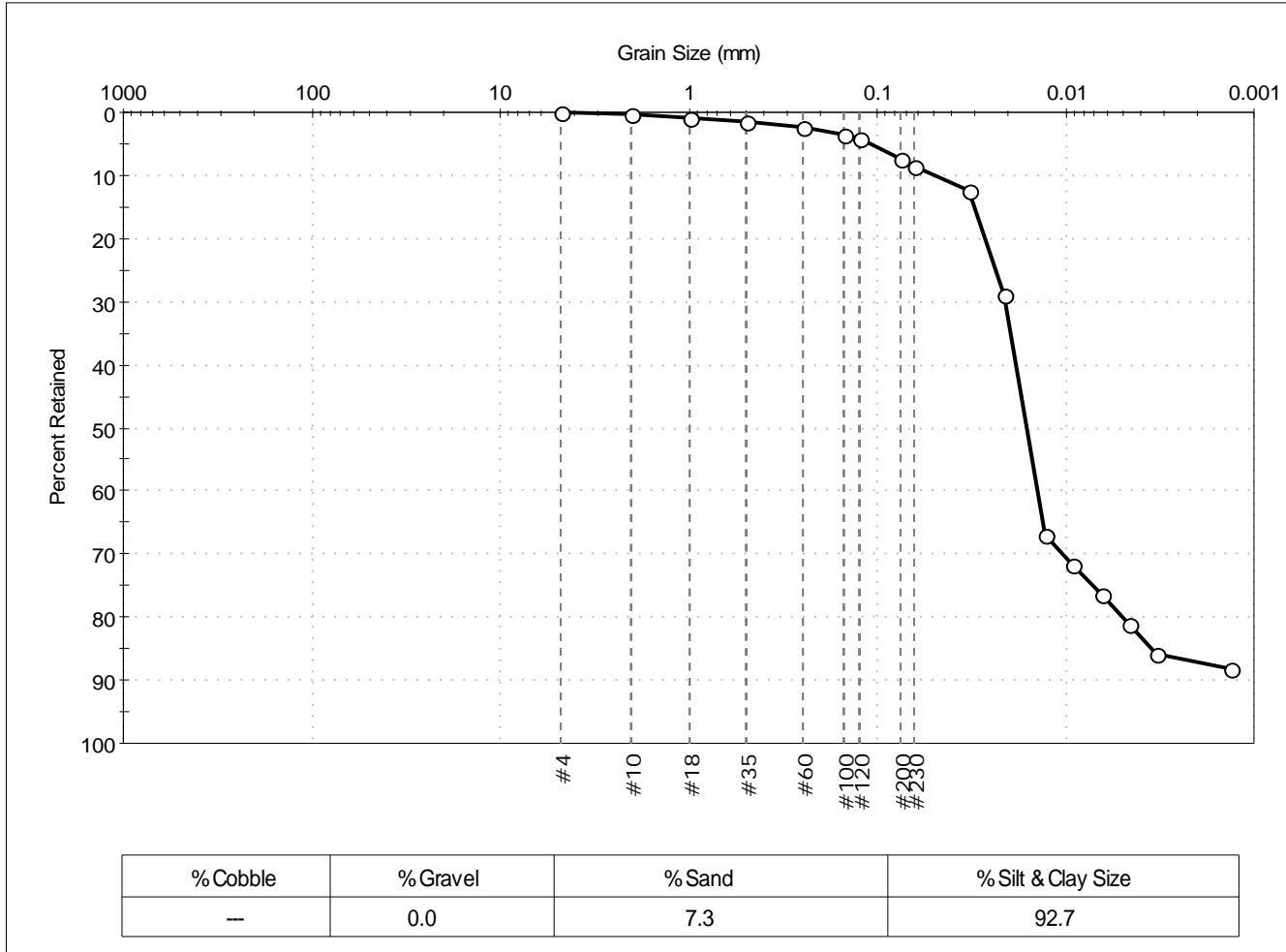
| Sample/Test Description      |                          |
|------------------------------|--------------------------|
| Sand/Gravel Particle Shape : | ---                      |
| Sand/Gravel Hardness :       | ---                      |
| Dispersion Device :          | Apparatus A - Mech Mixer |
| Dispersion Period :          | 1 minute                 |
| Specific Gravity :           | 2.65                     |
| Separation of Sample:        | #230 Sieve               |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 224-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0242DUP            | Test Date: 10/27/14         | Test Id: 310462                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 4            |               |          |
| #200       | 0.075              | 7            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 12           |               |          |
| ---        | 0.0212             | 29           |               |          |
| ---        | 0.0128             | 67           |               |          |
| ---        | 0.0091             | 72           |               |          |
| ---        | 0.0065             | 76           |               |          |
| ---        | 0.0046             | 81           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0013             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0306 mm | D <sub>30</sub> = 0.0102 mm |
| D <sub>60</sub> = 0.0183 mm | D <sub>15</sub> = 0.0035 mm |
| D <sub>50</sub> = 0.0160 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

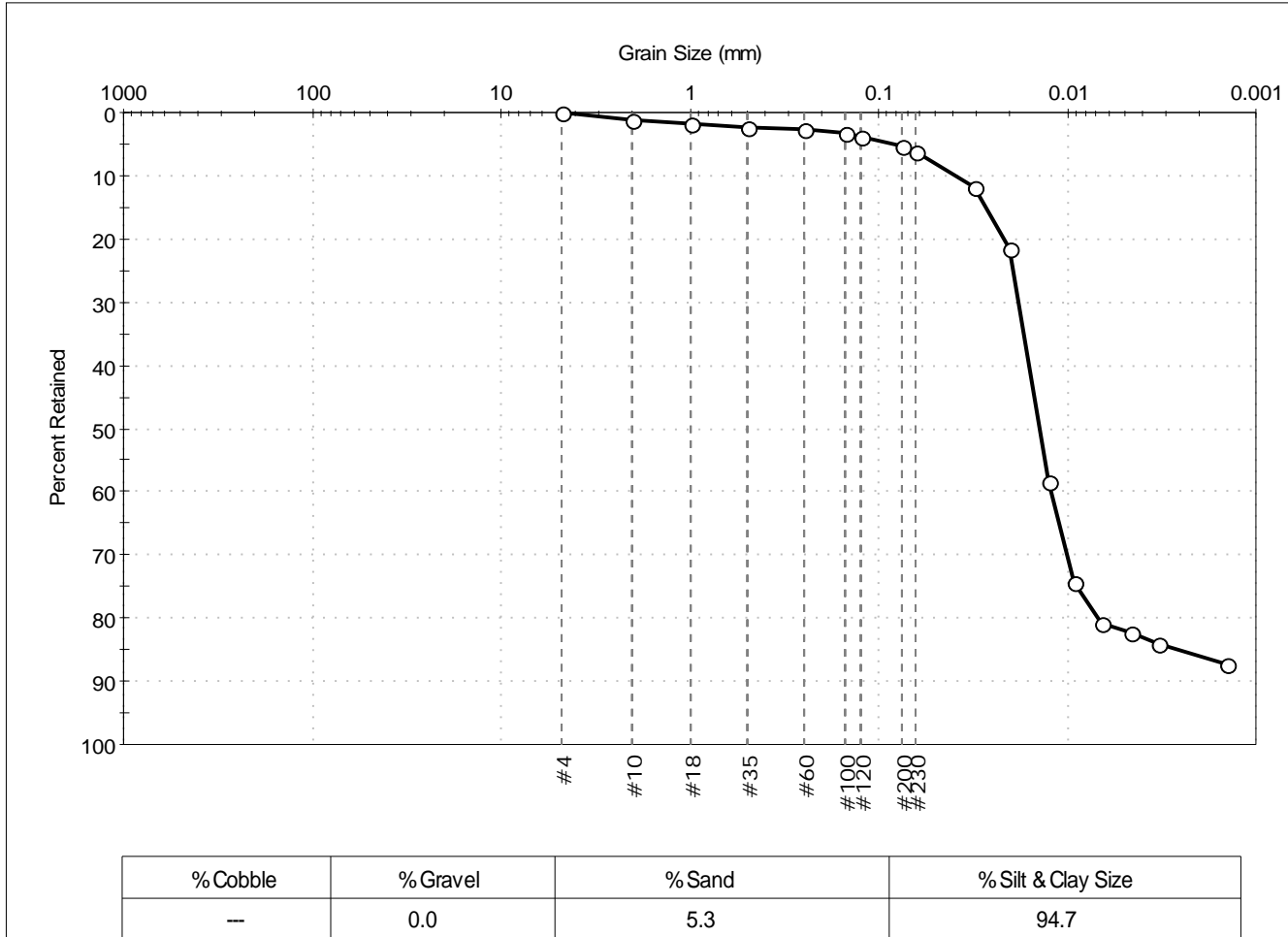
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                             | Project No: GTX-302366 |
| Boring ID: 224-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0243               | Test Date: 11/17/14         | Test Id: 310469                                       |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark grayish brown silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 4            |               |          |
| #200       | 0.075              | 5            |               |          |
| #230       | 0.063              | 6            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0311             | 12           |               |          |
| ---        | 0.0202             | 21           |               |          |
| ---        | 0.0126             | 58           |               |          |
| ---        | 0.0091             | 74           |               |          |
| ---        | 0.0065             | 81           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 87           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0270 mm | D <sub>30</sub> = 0.0099 mm |
| D <sub>60</sub> = 0.0159 mm | D <sub>15</sub> = 0.0025 mm |
| D <sub>50</sub> = 0.0140 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

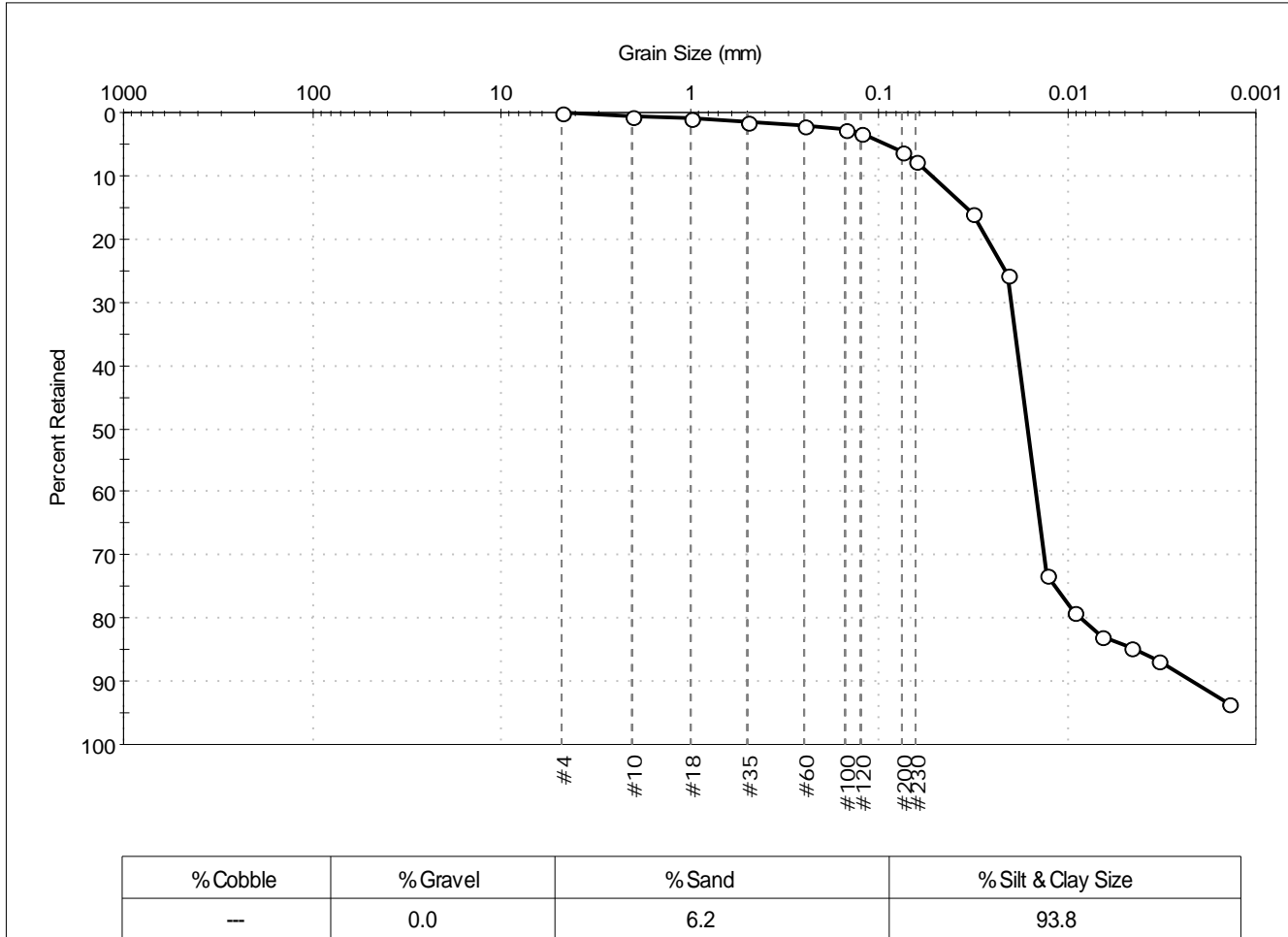
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description    |                            |
|----------------------------|----------------------------|
| Sand/Gravel Particle Shape | : ---                      |
| Sand/Gravel Hardness       | : ---                      |
| Dispersion Device          | : Apparatus A - Mech Mixer |
| Dispersion Period          | : 1 minute                 |
| Specific Gravity           | : 2.65                     |
| Separation of Sample       | : #230 Sieve               |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 224-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0244               | Test Date: 11/17/14         | Test Id: 310463   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, very dark grayish brown silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 8            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 16           |               |          |
| ---        | 0.0205             | 26           |               |          |
| ---        | 0.0129             | 73           |               |          |
| ---        | 0.0092             | 79           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 87           |               |          |
| ---        | 0.0014             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0342 mm | D <sub>30</sub> = 0.0133 mm |
| D <sub>60</sub> = 0.0178 mm | D <sub>15</sub> = 0.0044 mm |
| D <sub>50</sub> = 0.0162 mm | D <sub>10</sub> = 0.0022 mm |
| C <sub>u</sub> = 8.091      | C <sub>c</sub> = 4.517      |

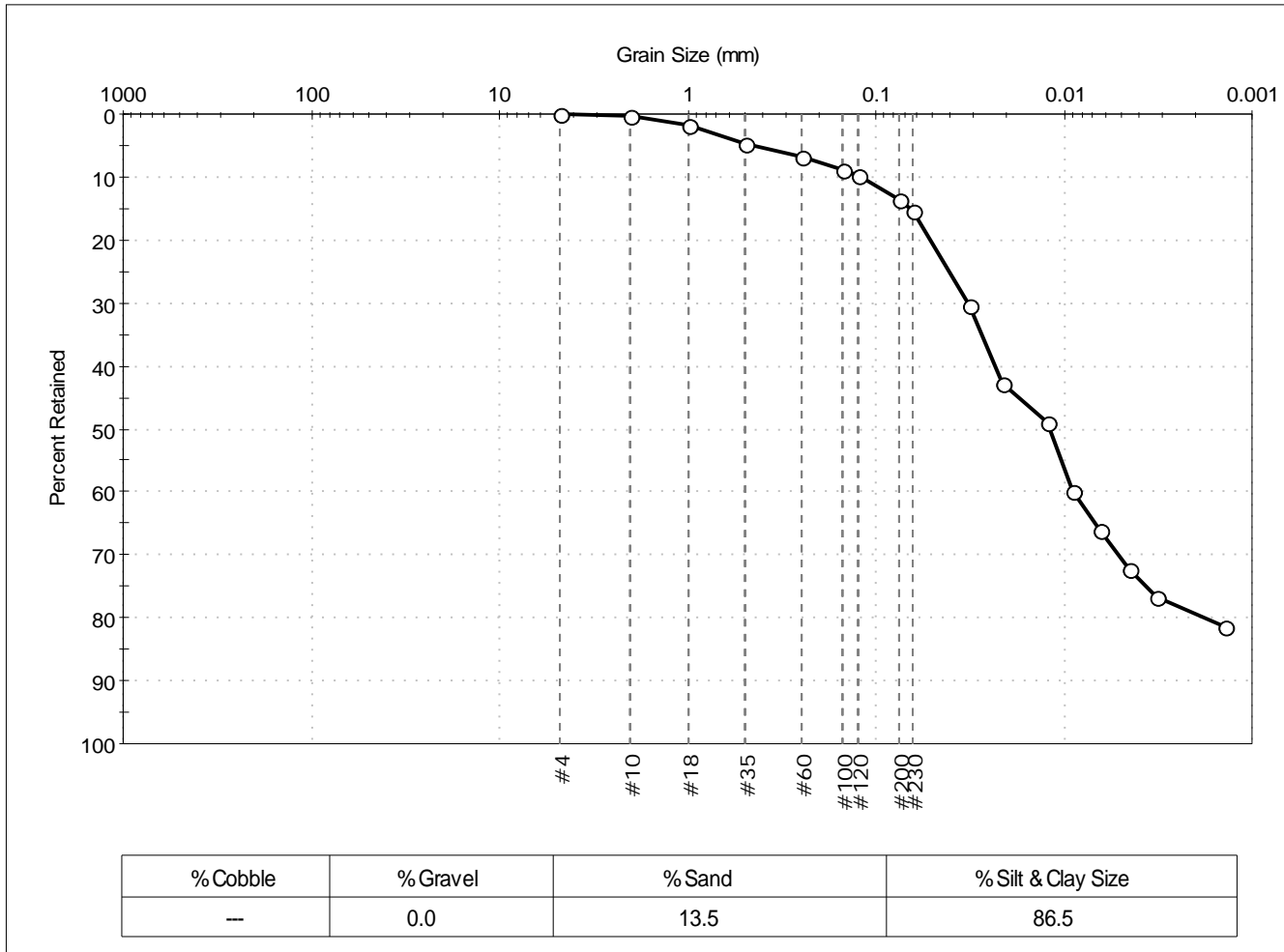
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 128-14LTM                                    | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0245                                   | Test Date: 11/17/14         | Test Id: 310464           |                        |
| Depth: ---  | Test Comment: ---           |                           |                        |
| Sample Description: Moist, very dark grayish brown silt | Sample Comment: ---         |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 14           |               |          |
| #230       | 0.063              | 15           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 30           |               |          |
| ---        | 0.0210             | 43           |               |          |
| ---        | 0.0123             | 49           |               |          |
| ---        | 0.0089             | 60           |               |          |
| ---        | 0.0064             | 66           |               |          |
| ---        | 0.0045             | 72           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0014             | 81           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0651 mm | D <sub>30</sub> = 0.0051 mm |
| D <sub>60</sub> = 0.0230 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0119 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

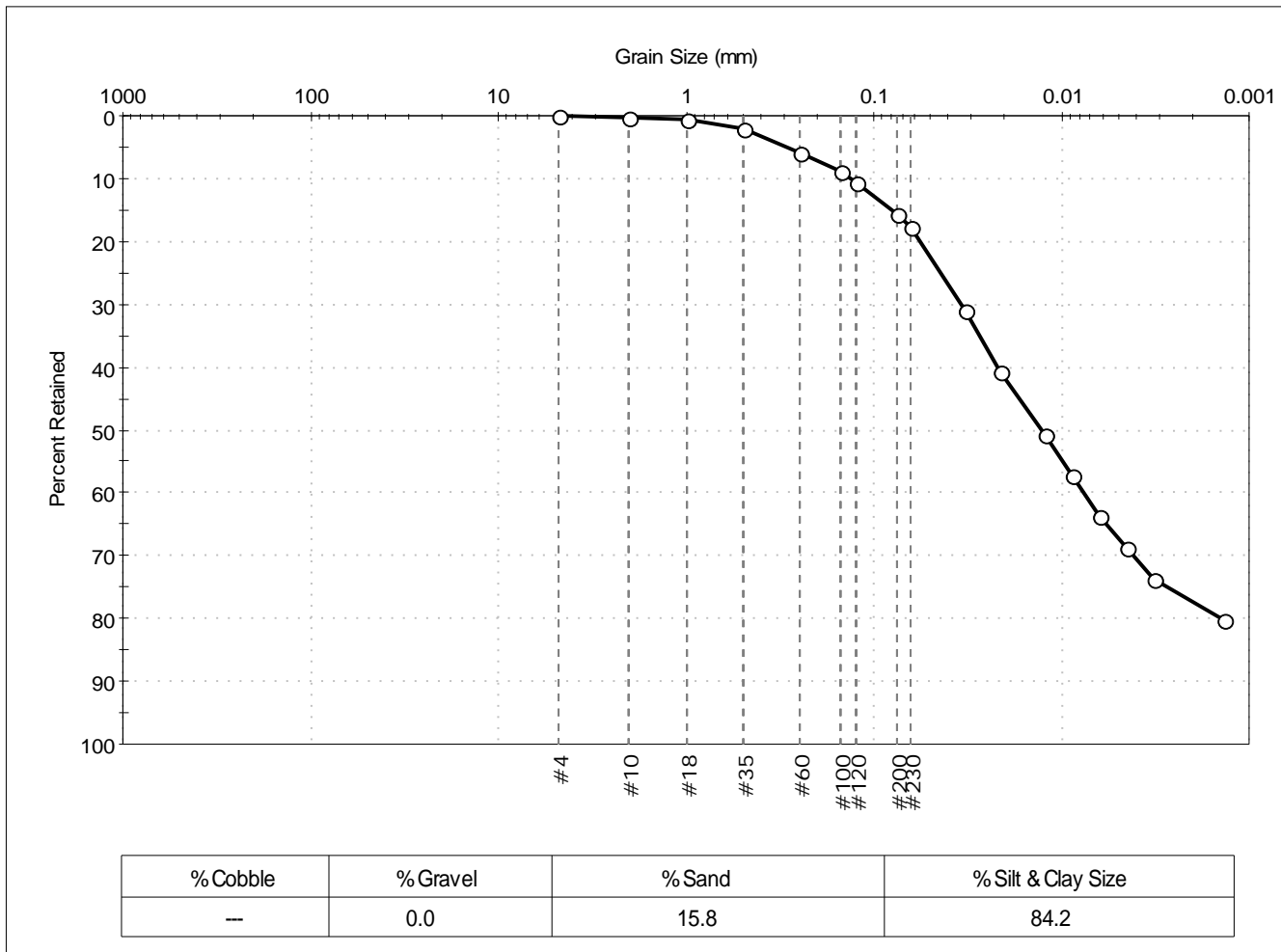
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                    |              |            |
|---------------------|------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute        |              |            |
| Project:            | New Bedford Harbor                 |              |            |
| Location:           | New Bedford, MA                    | Project No:  | GTX-302366 |
| Boring ID:          | 128-14LTM                          | Sample Type: | bag        |
| Sample ID:          | NBH14-0246                         | Test Date:   | 10/27/14   |
| Depth:              | ---                                | Test Id:     | 310465     |
| Test Comment:       | ---                                |              |            |
| Sample Description: | Wet, very dark gray silt with sand |              |            |
| Sample Comment:     | ---                                |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 16           |               |          |
| #230       | 0.063              | 18           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0325             | 31           |               |          |
| ---        | 0.0210             | 41           |               |          |
| ---        | 0.0123             | 51           |               |          |
| ---        | 0.0088             | 57           |               |          |
| ---        | 0.0063             | 64           |               |          |
| ---        | 0.0045             | 69           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0014             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0809 mm | D <sub>30</sub> = 0.0041 mm |
| D <sub>60</sub> = 0.0218 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0128 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

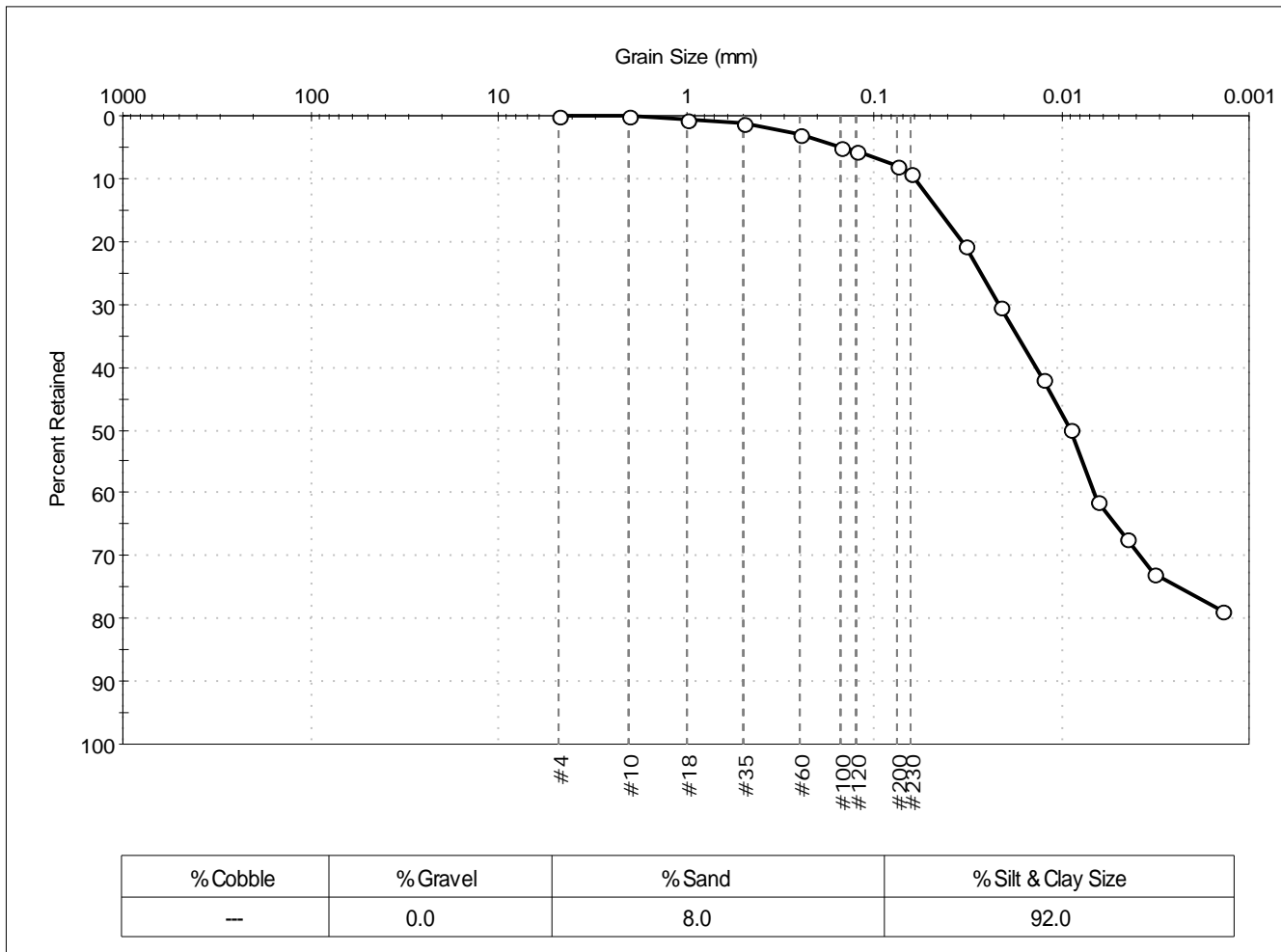
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 128-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0247  
 Test Date: 10/29/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310466  
 Test Comment: ---  
 Sample Description: Wet, very dark gray silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 5            |               |          |
| #120       | 0.12               | 6            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 21           |               |          |
| ---        | 0.0211             | 30           |               |          |
| ---        | 0.0124             | 42           |               |          |
| ---        | 0.0089             | 50           |               |          |
| ---        | 0.0064             | 61           |               |          |
| ---        | 0.0045             | 67           |               |          |
| ---        | 0.0032             | 73           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0453 mm | D <sub>30</sub> = 0.0038 mm |
| D <sub>60</sub> = 0.0136 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0088 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

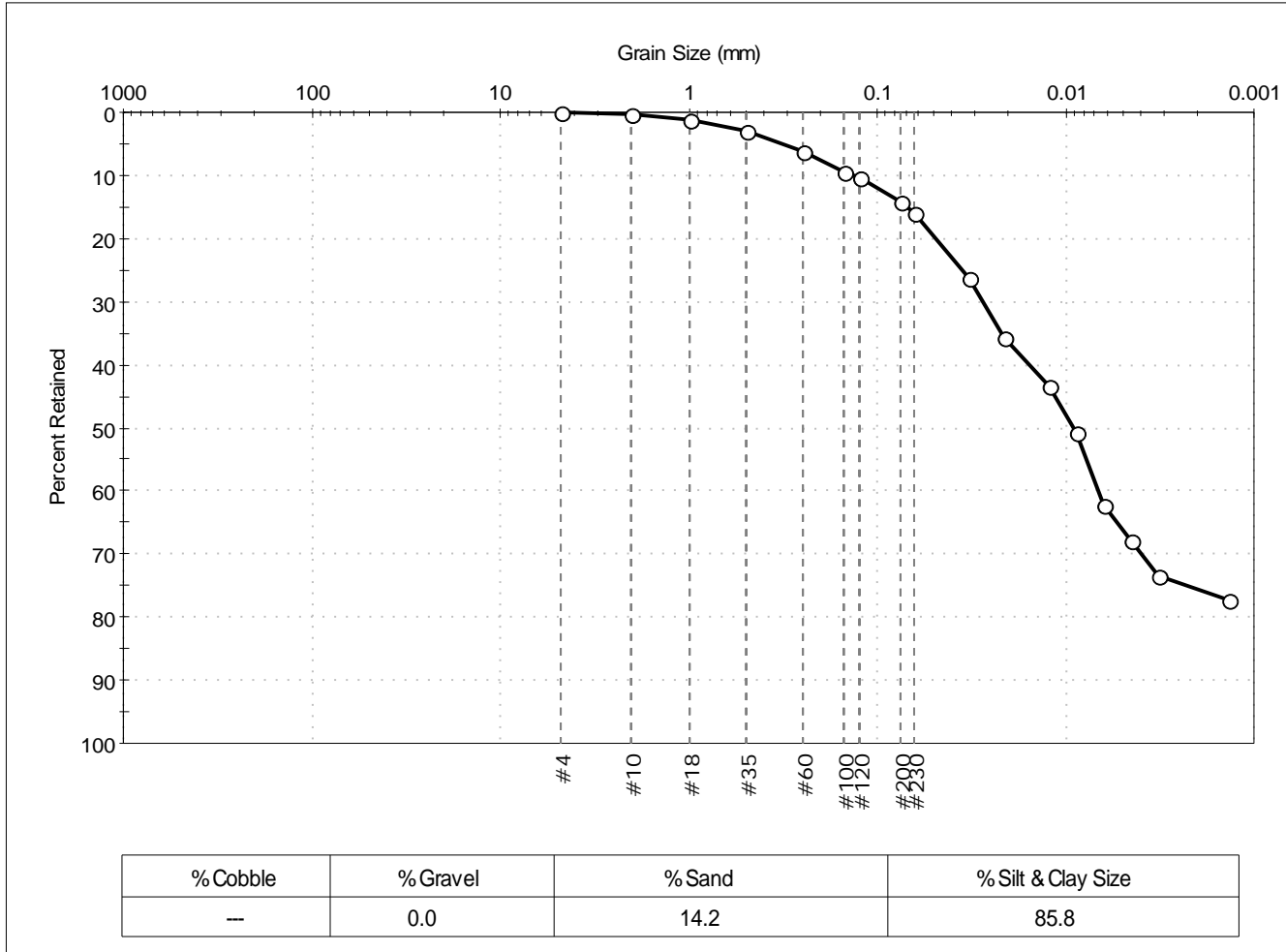
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 128-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0248               | Test Date: 10/24/14         | Test Id: 310467                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 14           |               |          |
| #230       | 0.063              | 16           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 26           |               |          |
| ---        | 0.0211             | 36           |               |          |
| ---        | 0.0123             | 43           |               |          |
| ---        | 0.0088             | 51           |               |          |
| ---        | 0.0063             | 62           |               |          |
| ---        | 0.0045             | 68           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0014             | 77           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0689 mm | D <sub>30</sub> = 0.0040 mm |
| D <sub>60</sub> = 0.0156 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0092 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

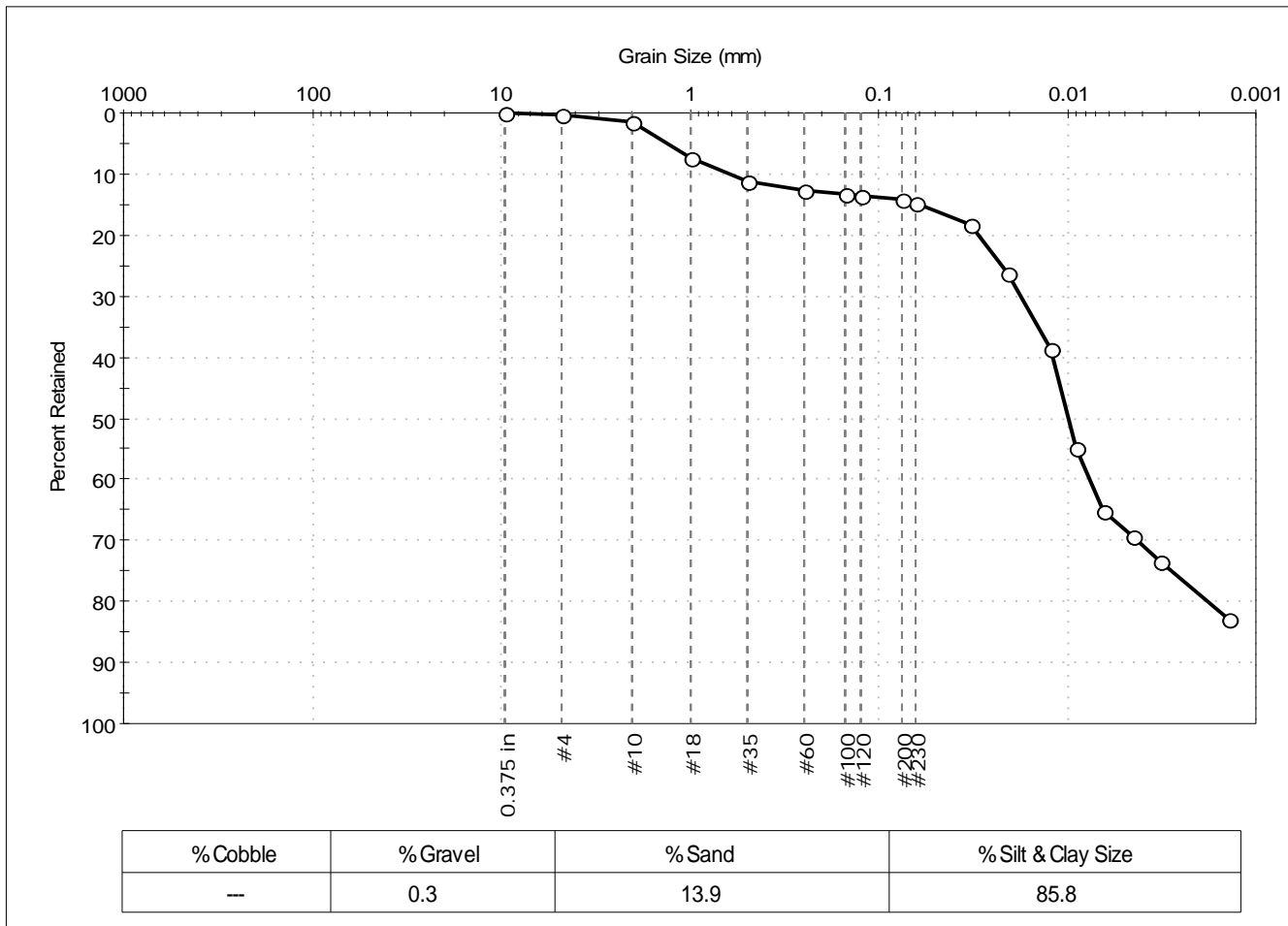
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                     | Project No: GTX-302366 |
| Project: New Bedford Harbor                             |                        |
| Location: New Bedford, MA                               |                        |
| Boring ID: 123-14LTM                                    | Sample Type: bag       |
| Sample ID: NBH14-0249                                   | Test Date: 11/17/14    |
| Depth: ---  | Test Id: 310468        |
| Test Comment: ---                                       | Tested By: jbr         |
| Sample Description: Moist, very dark grayish brown silt | Checked By: jdt        |
| Sample Comment: ---                                     |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 13           |               |          |
| #120       | 0.12               | 14           |               |          |
| #200       | 0.075              | 14           |               |          |
| #230       | 0.063              | 15           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0324             | 18           |               |          |
| ---        | 0.0208             | 26           |               |          |
| ---        | 0.0122             | 39           |               |          |
| ---        | 0.0089             | 55           |               |          |
| ---        | 0.0064             | 65           |               |          |
| ---        | 0.0045             | 69           |               |          |
| ---        | 0.0032             | 73           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0587 mm | D <sub>30</sub> = 0.0043 mm |
| D <sub>60</sub> = 0.0119 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0098 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

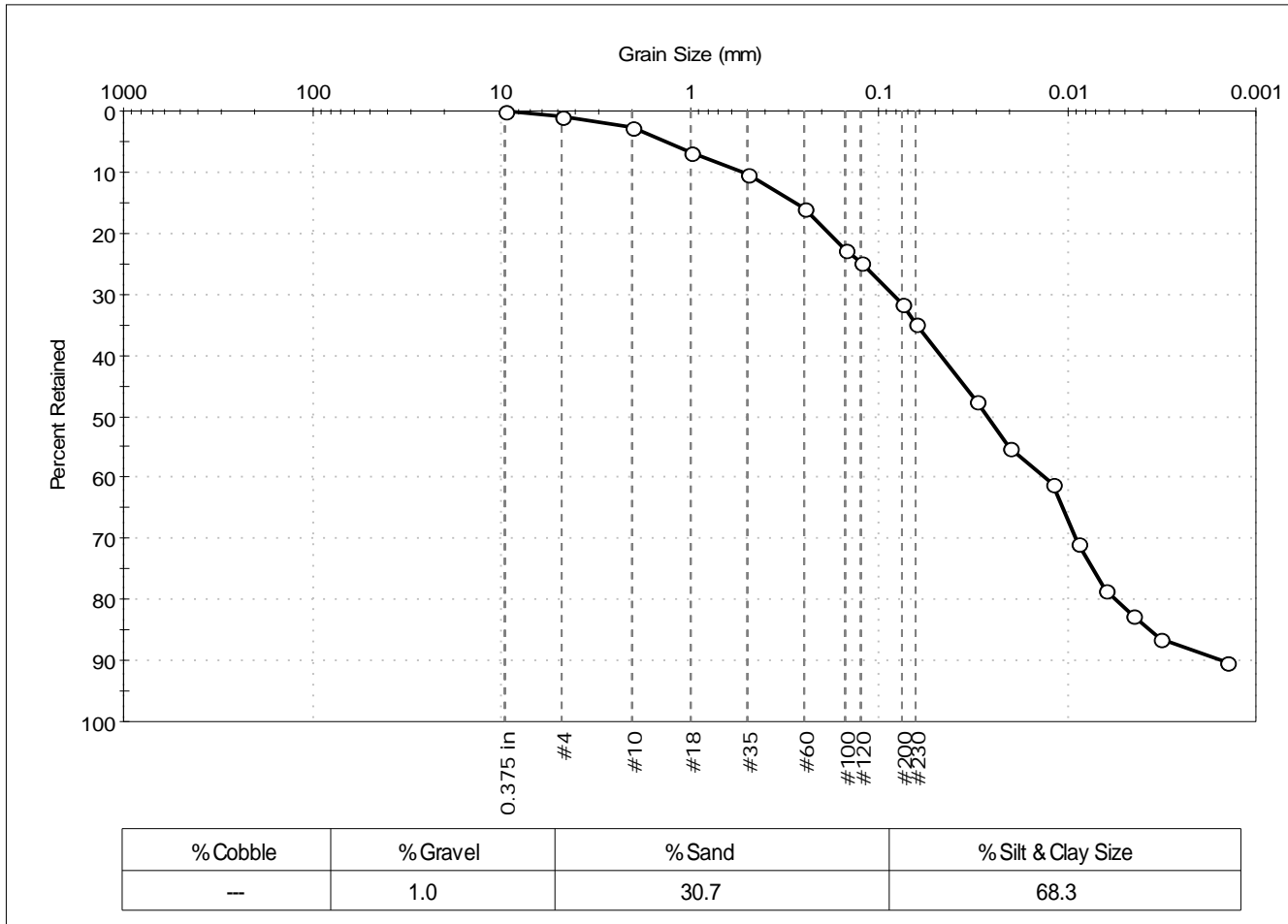
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 211-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0325                               | Test Date: 11/03/14    |
| Depth: ---  | Test Id: 310539        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Wet, dark olive gray sandy silt | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 23           |               |          |
| #120       | 0.12               | 25           |               |          |
| #200       | 0.075              | 32           |               |          |
| #230       | 0.063              | 35           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0303             | 47           |               |          |
| ---        | 0.0204             | 55           |               |          |
| ---        | 0.0120             | 61           |               |          |
| ---        | 0.0088             | 71           |               |          |
| ---        | 0.0063             | 79           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 86           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2809 mm | D <sub>30</sub> = 0.0090 mm |
| D <sub>60</sub> = 0.0468 mm | D <sub>15</sub> = 0.0036 mm |
| D <sub>50</sub> = 0.0266 mm | D <sub>10</sub> = 0.0015 mm |
| C <sub>u</sub> = 31.200     | C <sub>c</sub> = 1.154      |

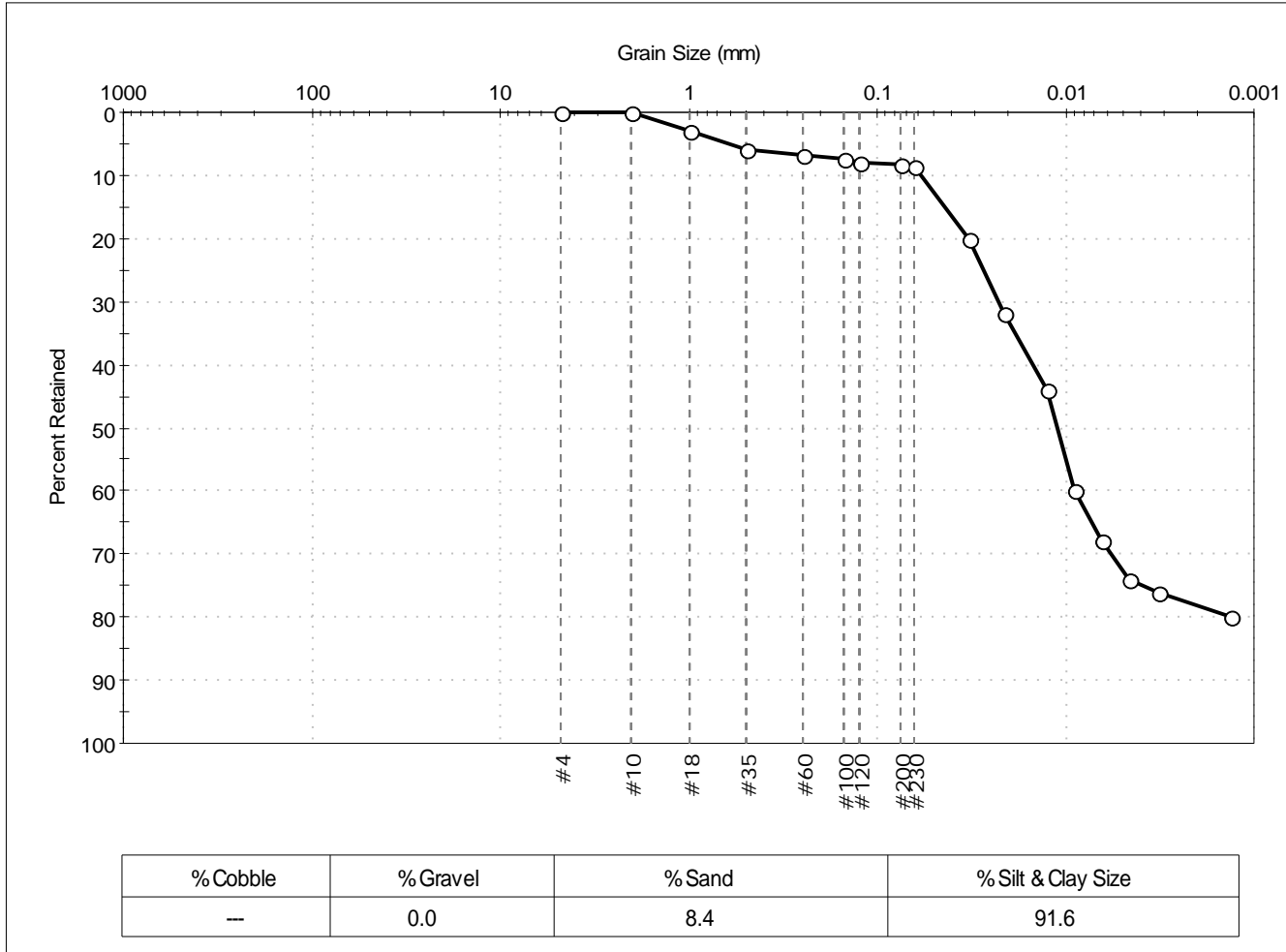
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                   | Project No: GTX-302366 |
| Boring ID: 123-14LTM                | Sample Type: bag            | Tested By: jbr                              | Checked By: jdt        |
| Sample ID: NBH14-0250               | Test Date: 10/24/14         | Test Id: 310470                             |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very drk gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0329             | 20           |               |          |
| ---        | 0.0211             | 32           |               |          |
| ---        | 0.0124             | 44           |               |          |
| ---        | 0.0090             | 60           |               |          |
| ---        | 0.0064             | 68           |               |          |
| ---        | 0.0046             | 74           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0013             | 80           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0438 mm | D <sub>30</sub> = 0.0057 mm |
| D <sub>60</sub> = 0.0148 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0110 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

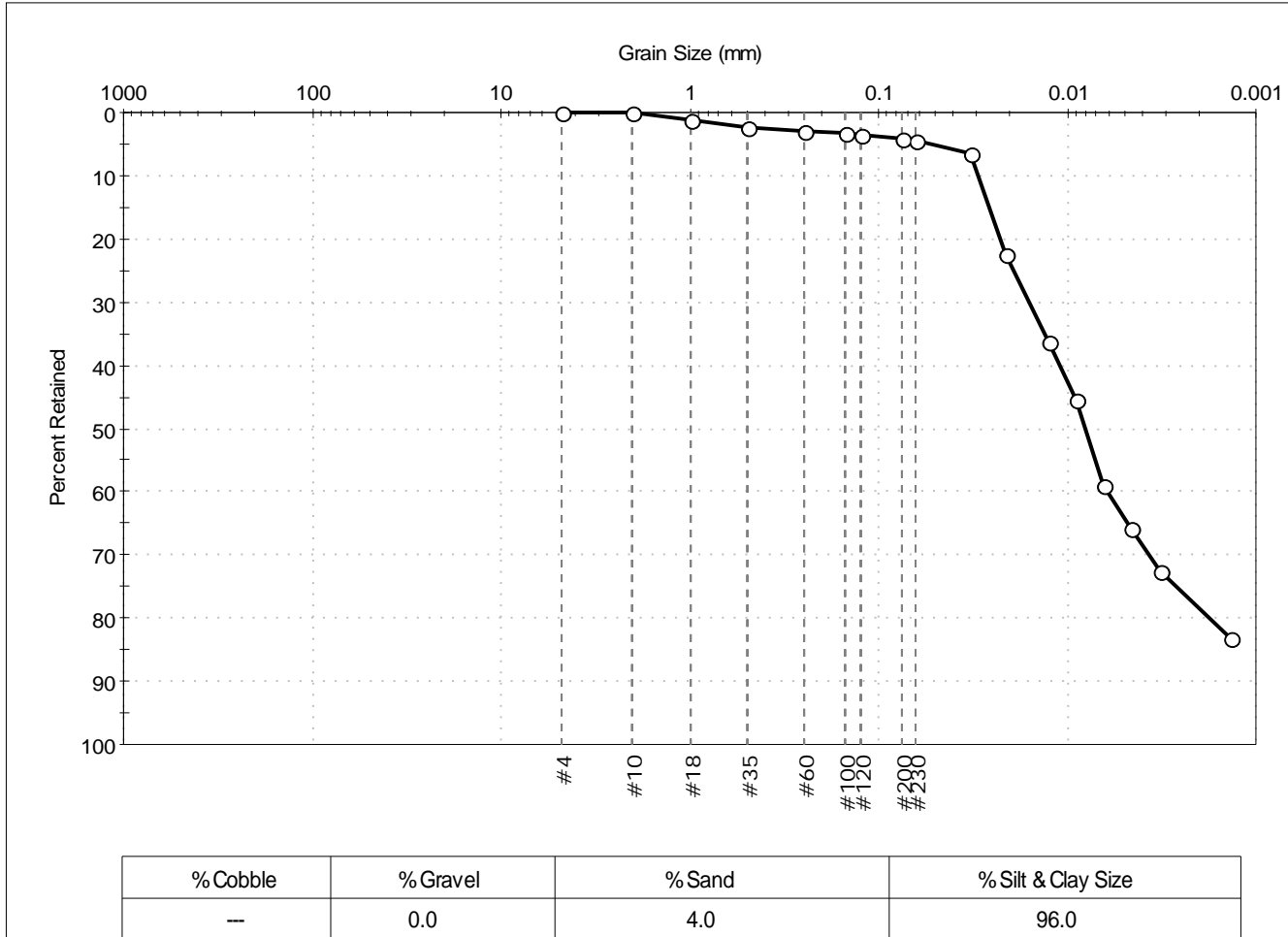
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute            | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 123-14LTM                           | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0251                          | Test Date: 11/12/14         | Checked By: jdt           |                        |
| Depth: ---                                     | Test Id: 310471             |                           |                        |
| Test Comment: ---                              |                             |                           |                        |
| Sample Description: Moist, very dark gray silt |                             |                           |                        |
| Sample Comment: ---                            |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 3            |               |          |
| #120       | 0.12               | 3            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 7            |               |          |
| ---        | 0.0211             | 23           |               |          |
| ---        | 0.0124             | 36           |               |          |
| ---        | 0.0089             | 45           |               |          |
| ---        | 0.0064             | 59           |               |          |
| ---        | 0.0046             | 66           |               |          |
| ---        | 0.0032             | 73           |               |          |
| ---        | 0.0014             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0259 mm | D <sub>30</sub> = 0.0037 mm |
| D <sub>60</sub> = 0.0108 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0079 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

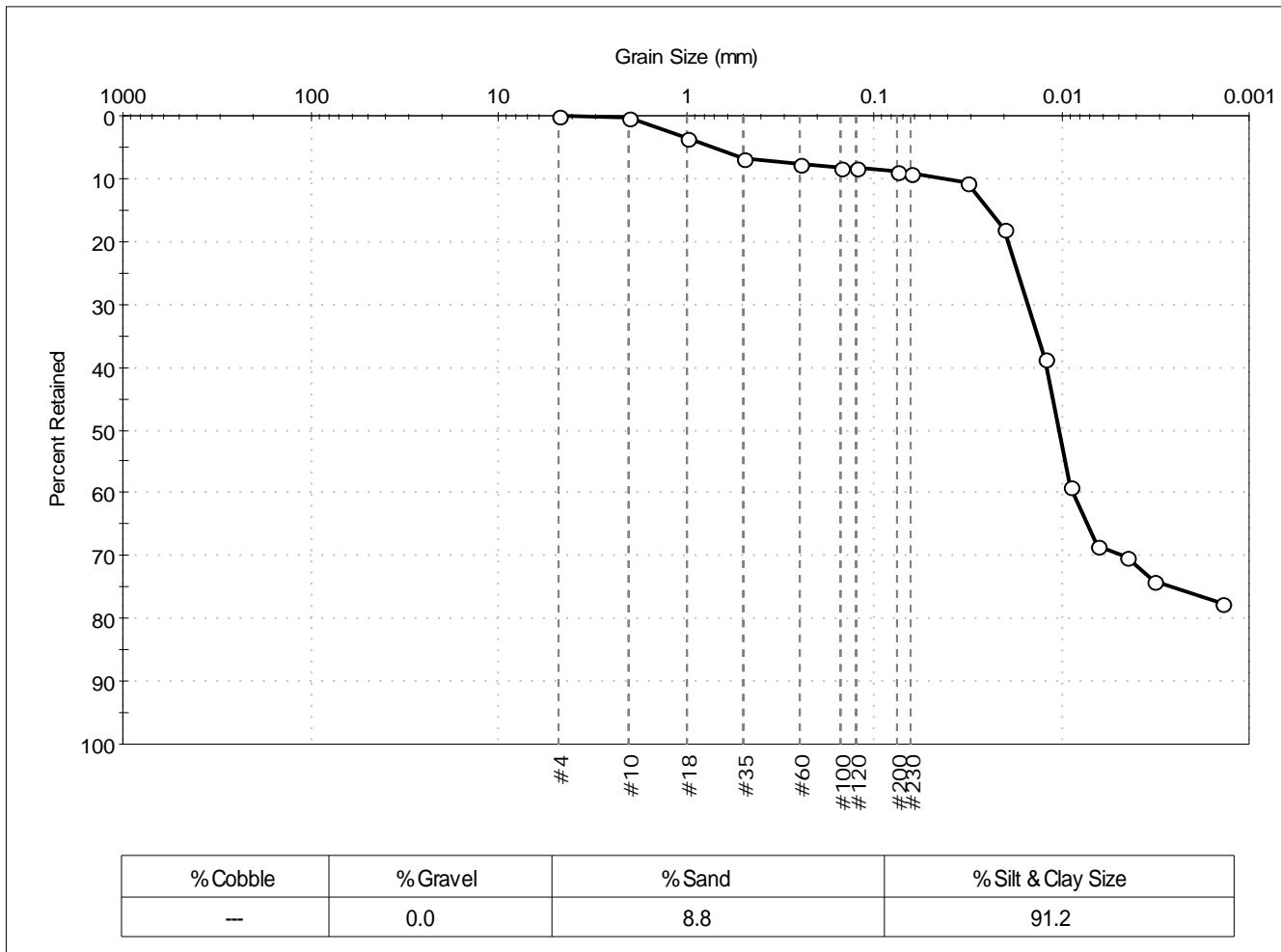
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 123-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0252               | Test Date: 10/30/14         | Test Id: 310472                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 8            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 9            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 11           |               |          |
| ---        | 0.0203             | 18           |               |          |
| ---        | 0.0121             | 39           |               |          |
| ---        | 0.0089             | 59           |               |          |
| ---        | 0.0064             | 68           |               |          |
| ---        | 0.0045             | 70           |               |          |
| ---        | 0.0032             | 74           |               |          |
| ---        | 0.0014             | 78           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0243 mm | D <sub>30</sub> = 0.0047 mm |
| D <sub>60</sub> = 0.0119 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0102 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

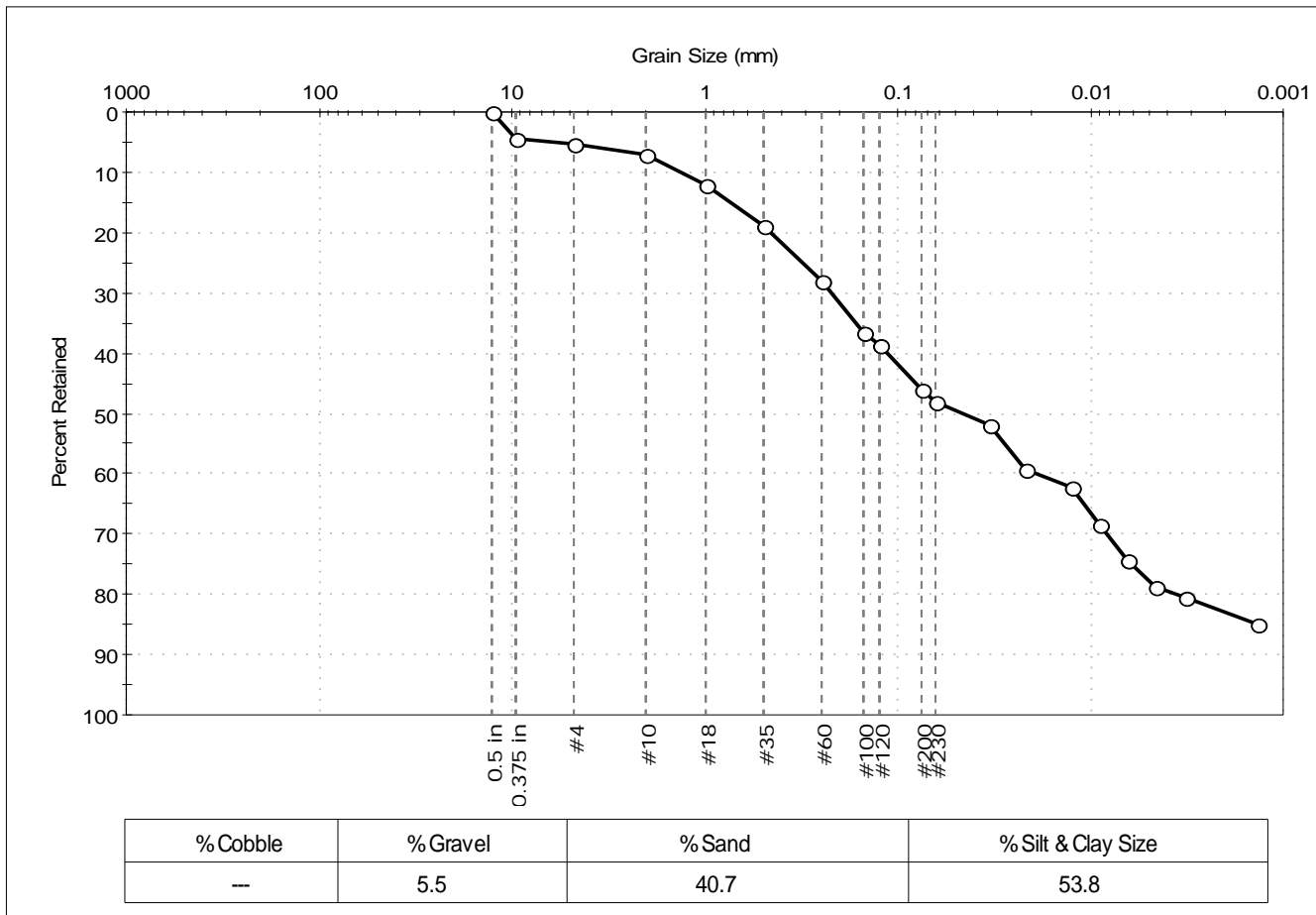
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 121-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0253                     | Test Date:   | 10/24/14   |
| Depth:              | ---                            | Test Id:     | 310473     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray sandy silt |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.70              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 28           |               |          |
| #100       | 0.15               | 37           |               |          |
| #120       | 0.12               | 39           |               |          |
| #200       | 0.075              | 46           |               |          |
| #230       | 0.063              | 48           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 52           |               |          |
| ---        | 0.0216             | 59           |               |          |
| ---        | 0.0125             | 62           |               |          |
| ---        | 0.0090             | 68           |               |          |
| ---        | 0.0064             | 74           |               |          |
| ---        | 0.0046             | 79           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0014             | 85           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7420 mm | D <sub>30</sub> = 0.0082 mm |
| D <sub>60</sub> = 0.1144 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0453 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

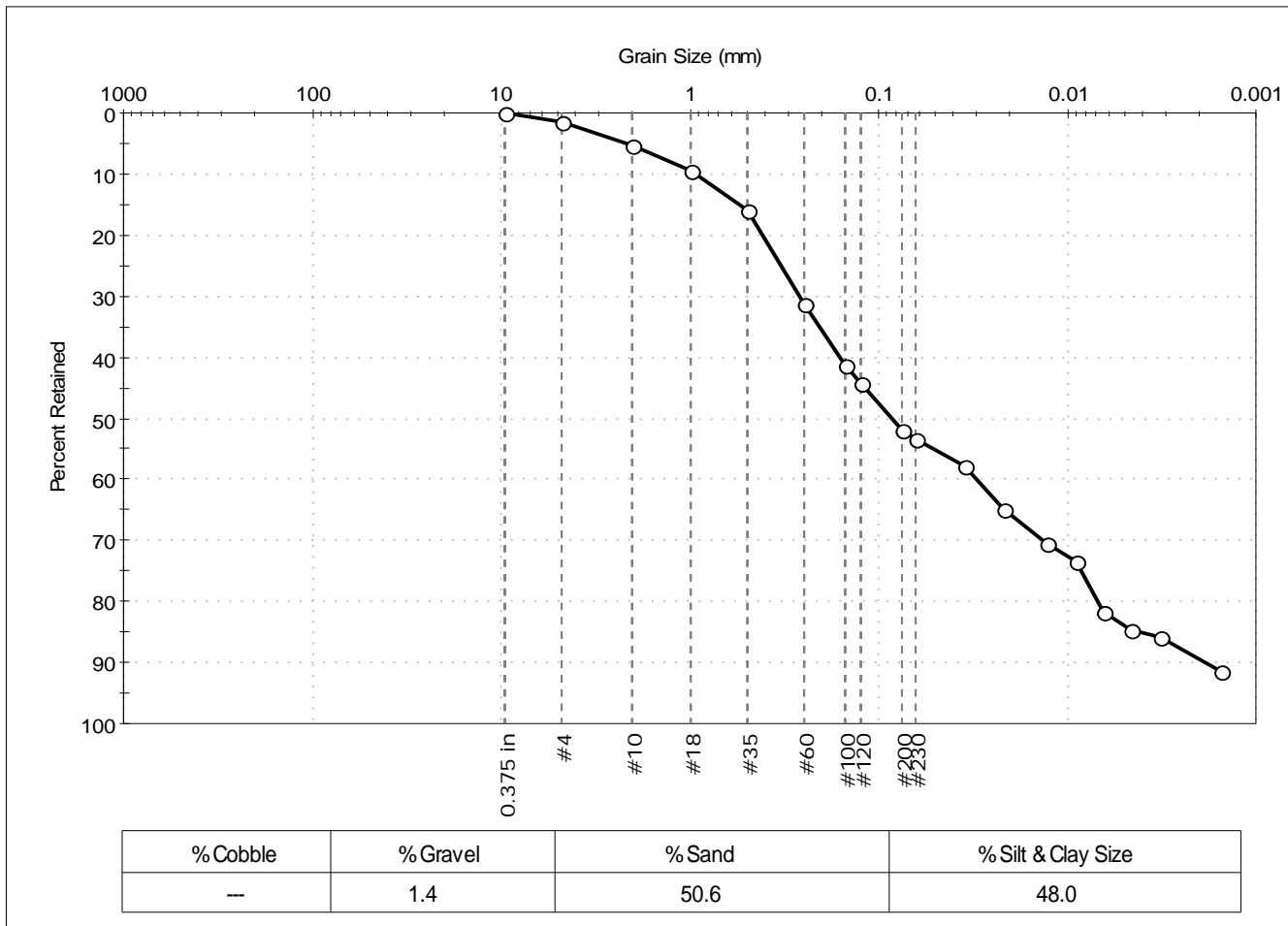
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 121-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0254                               | Test Date: 11/03/14    |
| Depth: ---  | Test Id: 310474        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Wet, dark olive gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 31           |               |          |
| #100       | 0.15               | 41           |               |          |
| #120       | 0.12               | 44           |               |          |
| #200       | 0.075              | 52           |               |          |
| #230       | 0.063              | 53           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0349             | 58           |               |          |
| ---        | 0.0218             | 65           |               |          |
| ---        | 0.0127             | 71           |               |          |
| ---        | 0.0090             | 73           |               |          |
| ---        | 0.0065             | 82           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0032             | 86           |               |          |
| ---        | 0.0015             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5466 mm | D <sub>30</sub> = 0.0134 mm |
| D <sub>60</sub> = 0.1611 mm | D <sub>15</sub> = 0.0041 mm |
| D <sub>50</sub> = 0.0854 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 84.789     | C <sub>c</sub> = 0.587      |

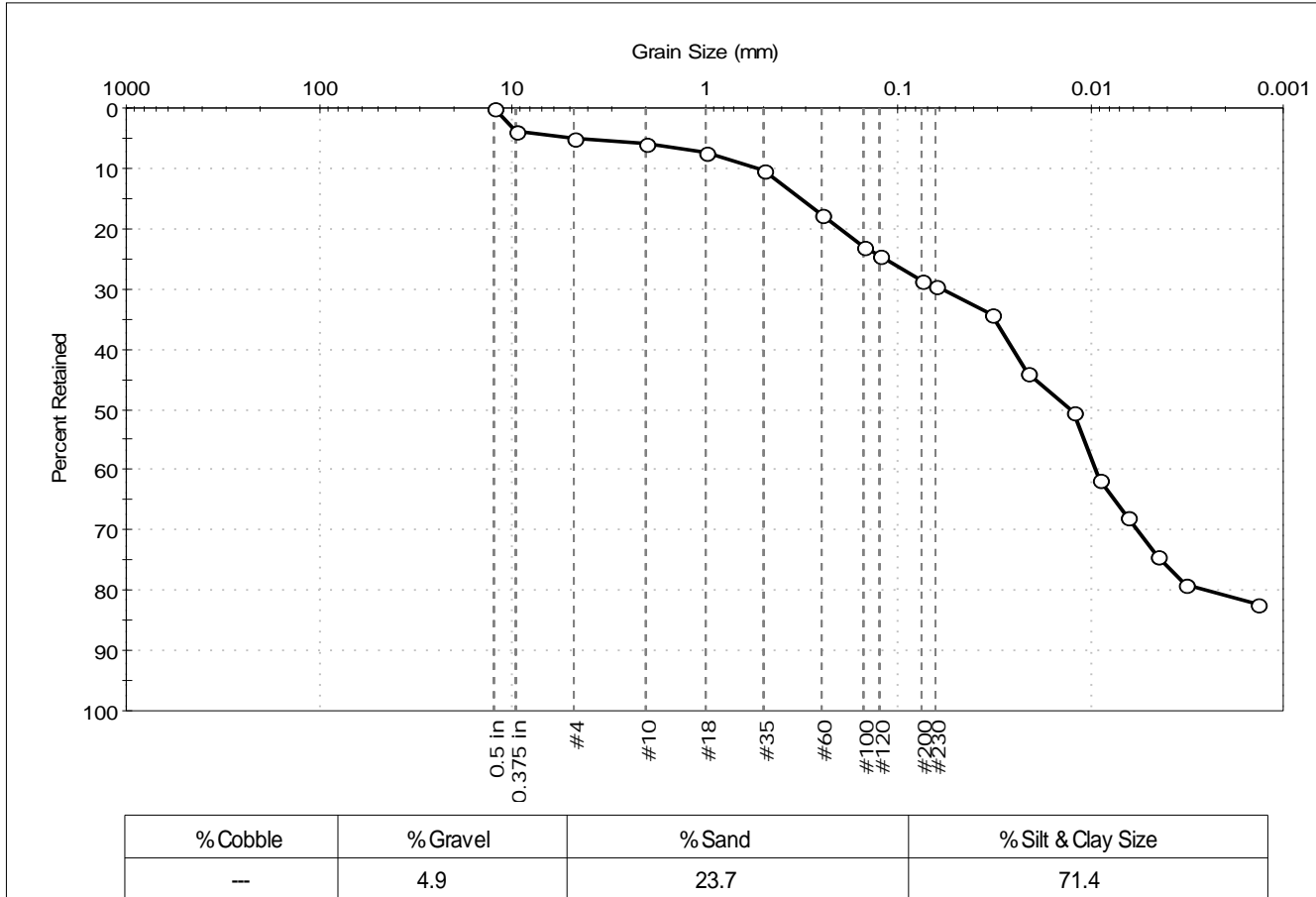
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 121-14LTM                                    | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0255                                   | Test Date: 10/29/14         | Depth: ---                | Test Id: 310475        |
| Test Comment: ---                                       |                             |                           |                        |
| Sample Description: Wet, dark olive gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                     |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 4            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 23           |               |          |
| #120       | 0.12               | 24           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 29           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 34           |               |          |
| ---        | 0.0210             | 44           |               |          |
| ---        | 0.0124             | 50           |               |          |
| ---        | 0.0089             | 62           |               |          |
| ---        | 0.0064             | 68           |               |          |
| ---        | 0.0045             | 74           |               |          |
| ---        | 0.0032             | 79           |               |          |
| ---        | 0.0014             | 82           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3232 mm | D <sub>30</sub> = 0.0057 mm |
| D <sub>60</sub> = 0.0252 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0127 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

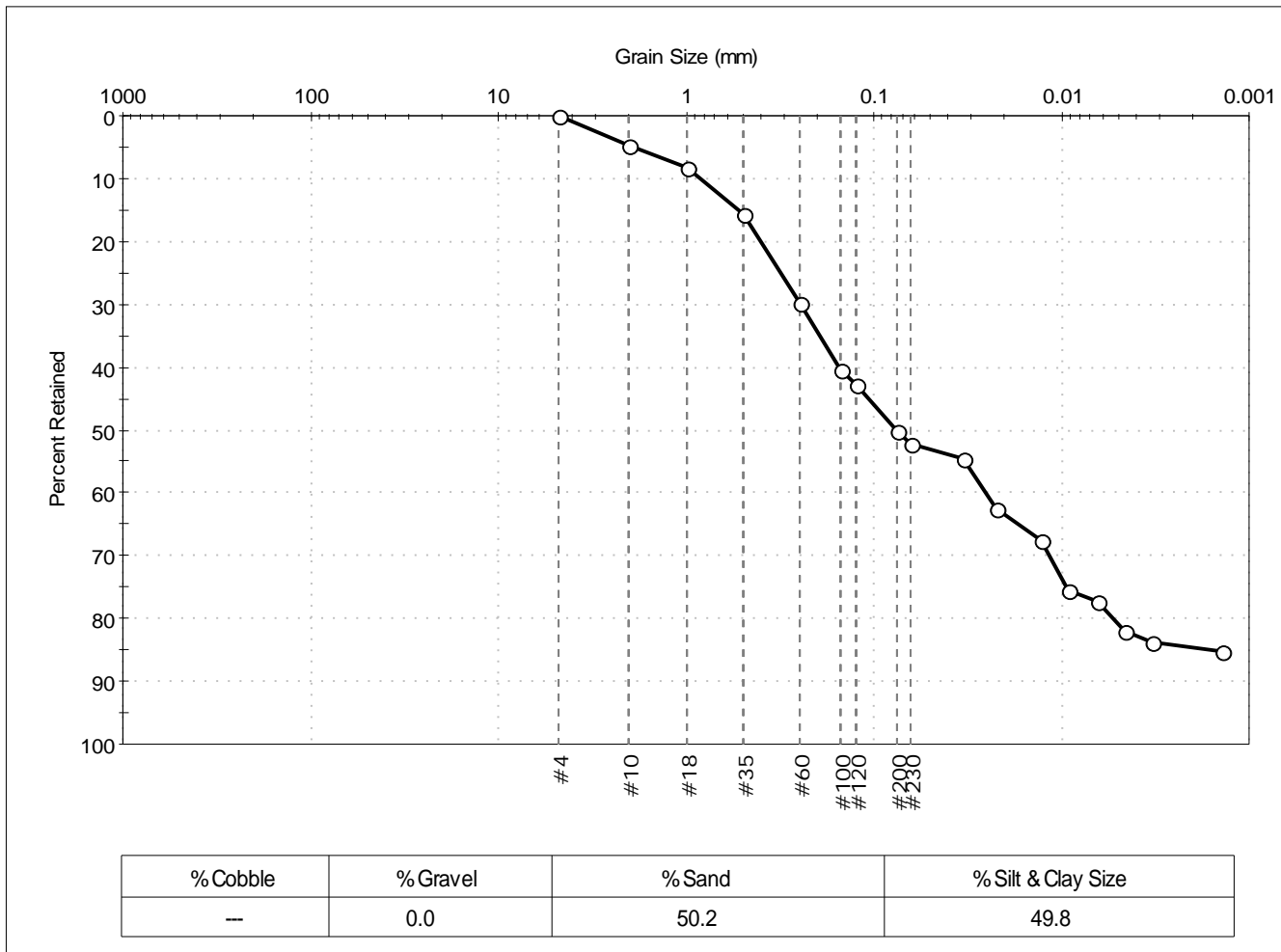
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 121-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0256               | Test Date: 10/24/14         | Test Id: 310476                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 16           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 40           |               |          |
| #120       | 0.12               | 43           |               |          |
| #200       | 0.075              | 50           |               |          |
| #230       | 0.063              | 52           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 54           |               |          |
| ---        | 0.0220             | 63           |               |          |
| ---        | 0.0127             | 67           |               |          |
| ---        | 0.0091             | 76           |               |          |
| ---        | 0.0065             | 77           |               |          |
| ---        | 0.0046             | 82           |               |          |
| ---        | 0.0033             | 84           |               |          |
| ---        | 0.0014             | 85           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.5251 mm | D <sub>30</sub> = 0.0115 mm |
| D <sub>60</sub> = 0.1524 mm | D <sub>15</sub> = 0.0017 mm |
| D <sub>50</sub> = 0.0760 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

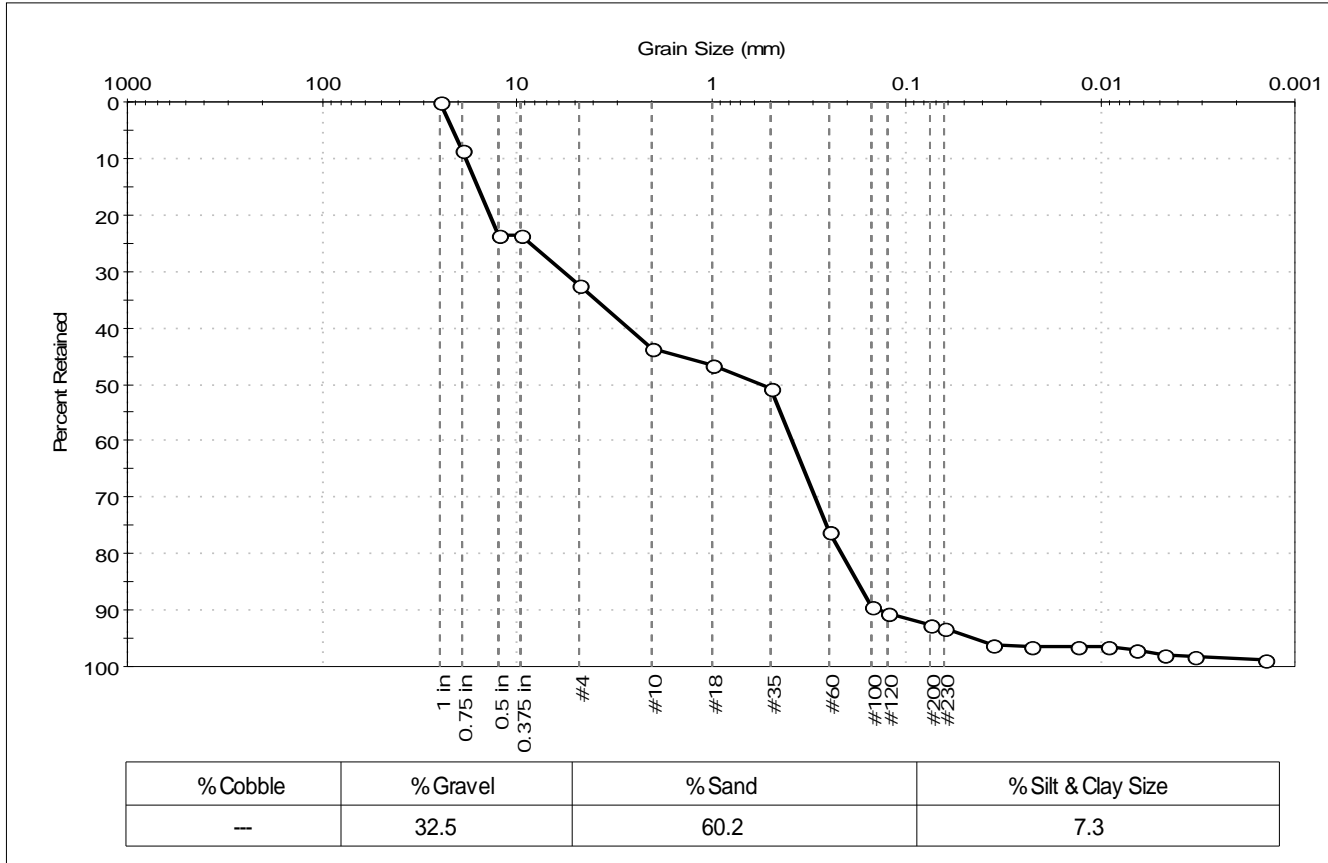
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute                      |              |            |
| Project:            | New Bedford Harbor                               |              |            |
| Location:           | New Bedford, MA                                  | Project No:  | GTX-302366 |
| Boring ID:          | 218-14LTM  | Sample Type: | bag        |
| Sample ID:          | NBH14-0257                                       | Test Date:   | 11/06/14   |
| Depth:              | ---  | Checked By:  | jdt        |
|                     |  | Test Id:     | 310477     |
| Test Comment:       | ---  |              |            |
| Sample Description: | Moist, dark olive gray sand with silt and gravel |              |            |
| Sample Comment:     | ---  |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 9            |               |          |
| 0.5 in     | 12.50              | 24           |               |          |
| 0.375 in   | 9.50               | 24           |               |          |
| #4         | 4.75               | 33           |               |          |
| #10        | 2.00               | 44           |               |          |
| #18        | 1.00               | 47           |               |          |
| #35        | 0.50               | 51           |               |          |
| #60        | 0.25               | 76           |               |          |
| #100       | 0.15               | 89           |               |          |
| #120       | 0.12               | 91           |               |          |
| #200       | 0.075              | 92.7         |               |          |
| #230       | 0.063              | 93           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0359             | 96           |               |          |
| ---        | 0.0228             | 97           |               |          |
| ---        | 0.0131             | 97           |               |          |
| ---        | 0.0093             | 97           |               |          |
| ---        | 0.0066             | 97           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 15.8982 mm | D <sub>30</sub> = 0.2946 mm |
| D <sub>60</sub> = 2.6572 mm  | D <sub>15</sub> = 0.1773 mm |
| D <sub>50</sub> = 0.5650 mm  | D <sub>10</sub> = 0.1369 mm |
| C <sub>u</sub> = 19.410      | C <sub>c</sub> = 0.239      |

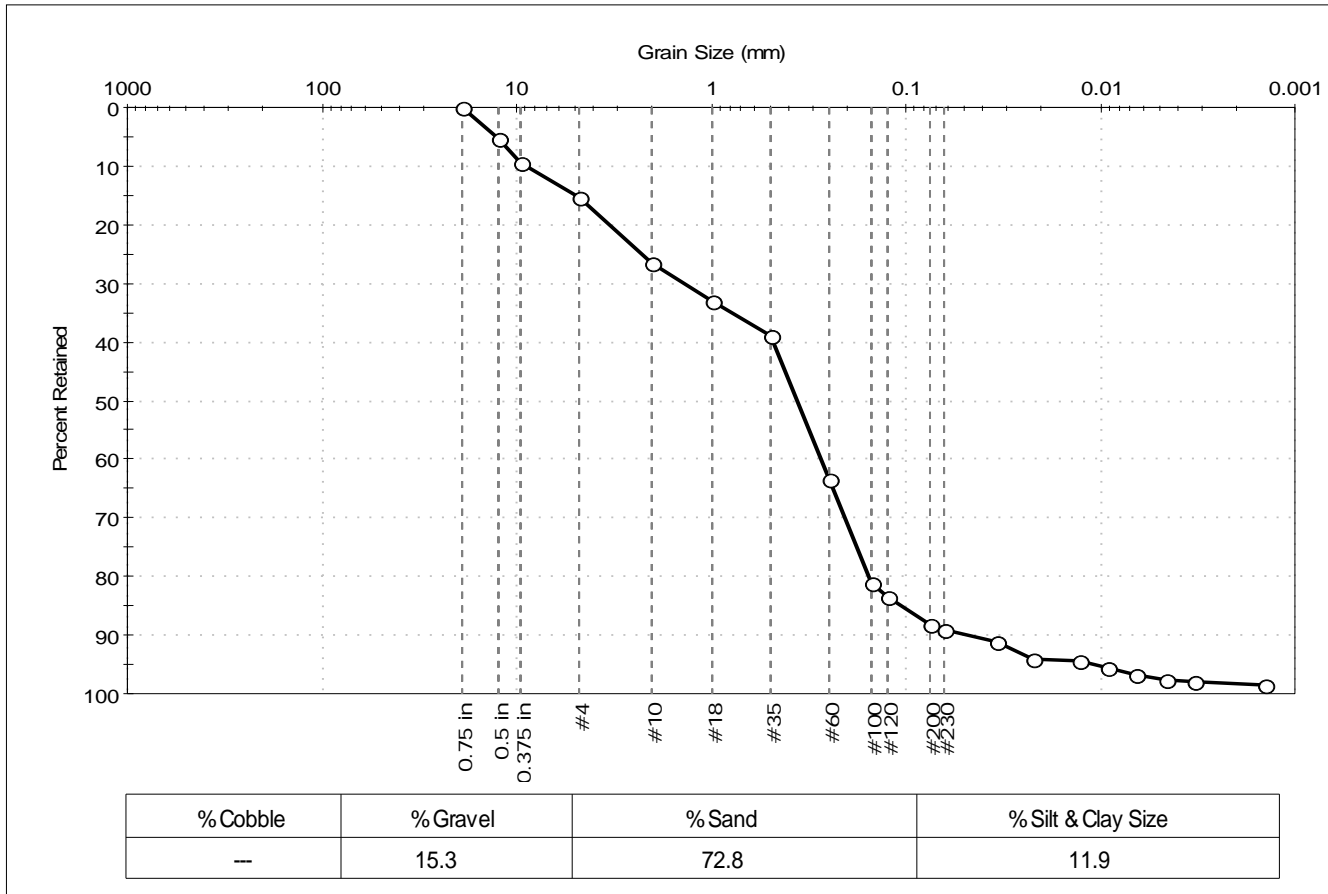
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ROUNDED         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                                      | Project No: GTX-302366 |
| Boring ID: 218-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0258               | Test Date: 10/30/14         | Test Id: 310478  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive brown sand with silt and gravel | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 9            |               |          |
| #4         | 4.75               | 15           |               |          |
| #10        | 2.00               | 27           |               |          |
| #18        | 1.00               | 33           |               |          |
| #35        | 0.50               | 39           |               |          |
| #60        | 0.25               | 63           |               |          |
| #100       | 0.15               | 81           |               |          |
| #120       | 0.12               | 83           |               |          |
| #200       | 0.075              | 88           |               |          |
| #230       | 0.063              | 89           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0344             | 91           |               |          |
| ---        | 0.0222             | 94           |               |          |
| ---        | 0.0129             | 94           |               |          |
| ---        | 0.0092             | 96           |               |          |
| ---        | 0.0065             | 97           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0014             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 4.9584 mm | D <sub>30</sub> = 0.2069 mm |
| D <sub>60</sub> = 0.4867 mm | D <sub>15</sub> = 0.1049 mm |
| D <sub>50</sub> = 0.3664 mm | D <sub>10</sub> = 0.0479 mm |
| C <sub>u</sub> = 10.161     | C <sub>c</sub> = 1.836      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

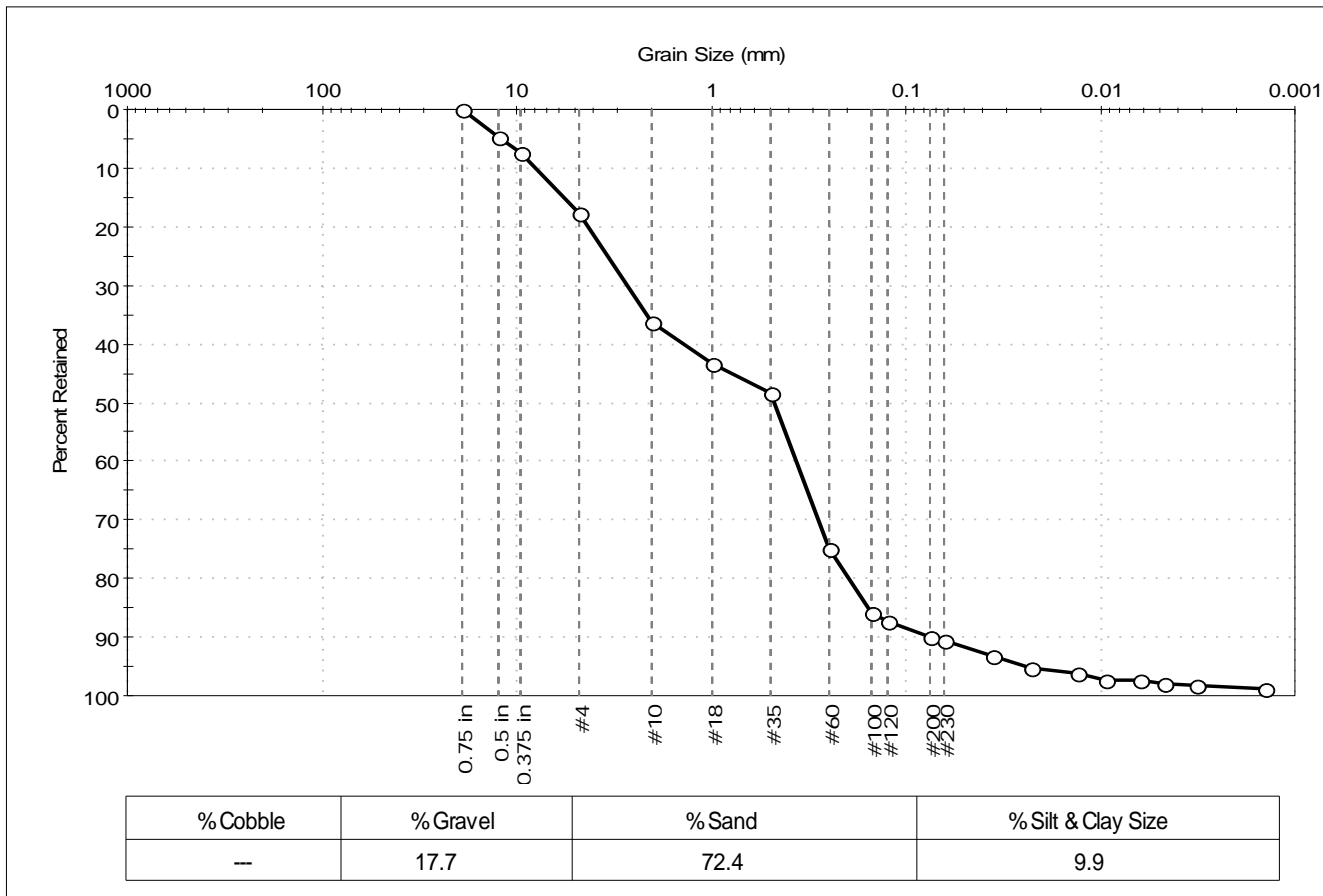
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 218-14LTM   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0259  | Test Date: 11/05/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310479             |                           |                        |
| Test Comment: ---  |                             |                           |                        |
| Sample Description: Wet, dark olive gray sand with silt and gravel |                             |                           |                        |
| Sample Comment: ---  |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 5            |               |          |
| 0.375 in   | 9.50               | 7            |               |          |
| #4         | 4.75               | 18           |               |          |
| #10        | 2.00               | 36           |               |          |
| #18        | 1.00               | 43           |               |          |
| #35        | 0.50               | 48           |               |          |
| #60        | 0.25               | 75           |               |          |
| #100       | 0.15               | 86           |               |          |
| #120       | 0.12               | 87           |               |          |
| #200       | 0.075              | 90.1         |               |          |
| #230       | 0.063              | 91           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0358             | 93           |               |          |
| ---        | 0.0226             | 95           |               |          |
| ---        | 0.0132             | 96           |               |          |
| ---        | 0.0094             | 97           |               |          |
| ---        | 0.0063             | 97           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0014             | 99           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 5.7011 mm | D <sub>30</sub> = 0.2839 mm |
| D <sub>60</sub> = 1.3991 mm | D <sub>15</sub> = 0.1564 mm |
| D <sub>50</sub> = 0.4793 mm | D <sub>10</sub> = 0.0762 mm |
| C <sub>u</sub> = 18.361     | C <sub>c</sub> = 0.756      |

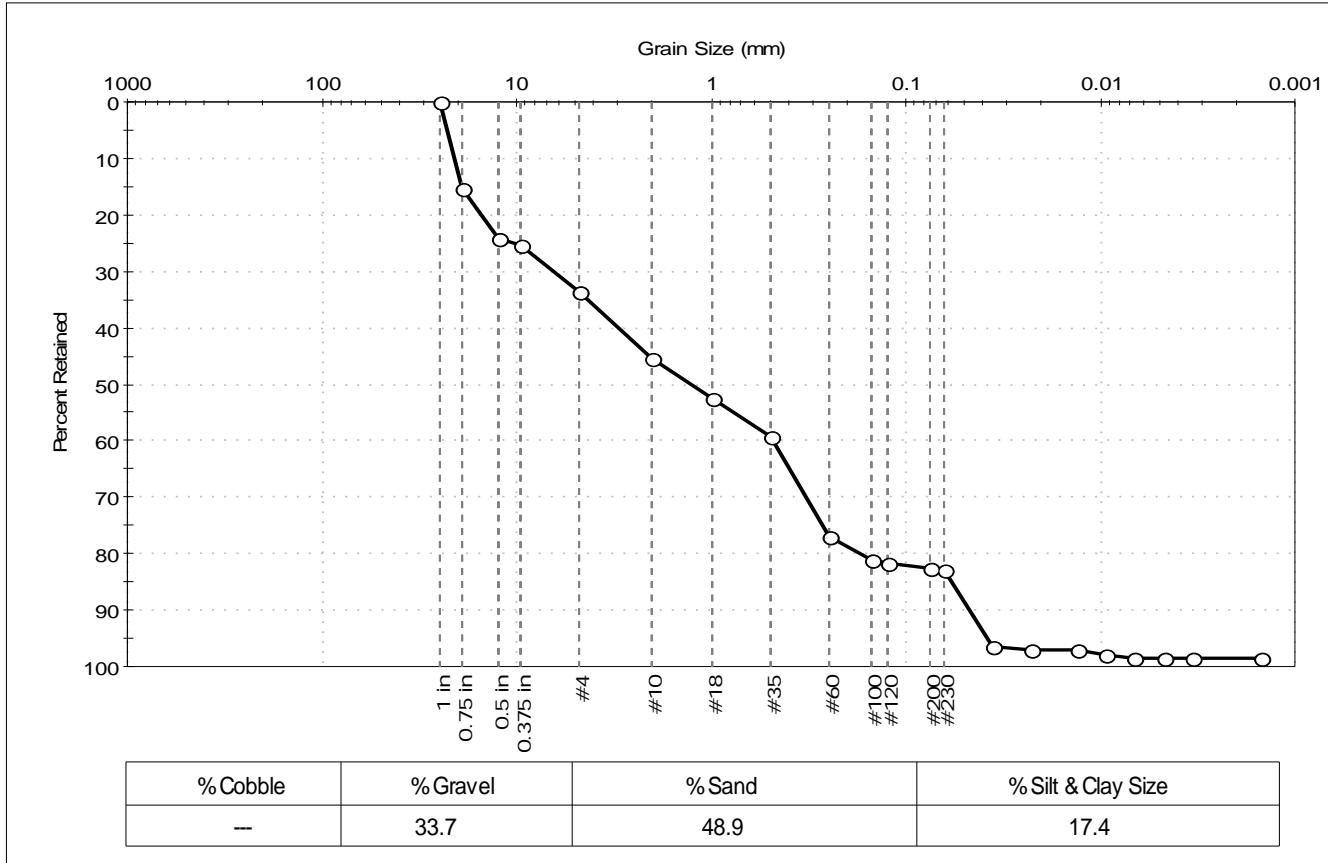
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                   | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 218-14LTM                                  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0260                                 | Test Date: 11/18/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310480             |                           |                        |
| Test Comment: ---                                     |                             |                           |                        |
| Sample Description: Wet, black silty sand with gravel |                             |                           |                        |
| Sample Comment: ---                                   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 15           |               |          |
| 0.5 in     | 12.50              | 24           |               |          |
| 0.375 in   | 9.50               | 25           |               |          |
| #4         | 4.75               | 34           |               |          |
| #10        | 2.00               | 46           |               |          |
| #18        | 1.00               | 53           |               |          |
| #35        | 0.50               | 59           |               |          |
| #60        | 0.25               | 77           |               |          |
| #100       | 0.15               | 81           |               |          |
| #120       | 0.12               | 82           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0356             | 96           |               |          |
| ---        | 0.0229             | 97           |               |          |
| ---        | 0.0132             | 97           |               |          |
| ---        | 0.0094             | 98           |               |          |
| ---        | 0.0067             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0034             | 98           |               |          |
| ---        | 0.0015             | 98           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 19.0981 mm | D <sub>30</sub> = 0.3286 mm |
| D <sub>60</sub> = 2.9914 mm  | D <sub>15</sub> = 0.0575 mm |
| D <sub>50</sub> = 1.2909 mm  | D <sub>10</sub> = 0.0467 mm |
| C <sub>u</sub> = 64.056      | C <sub>c</sub> = 0.773      |

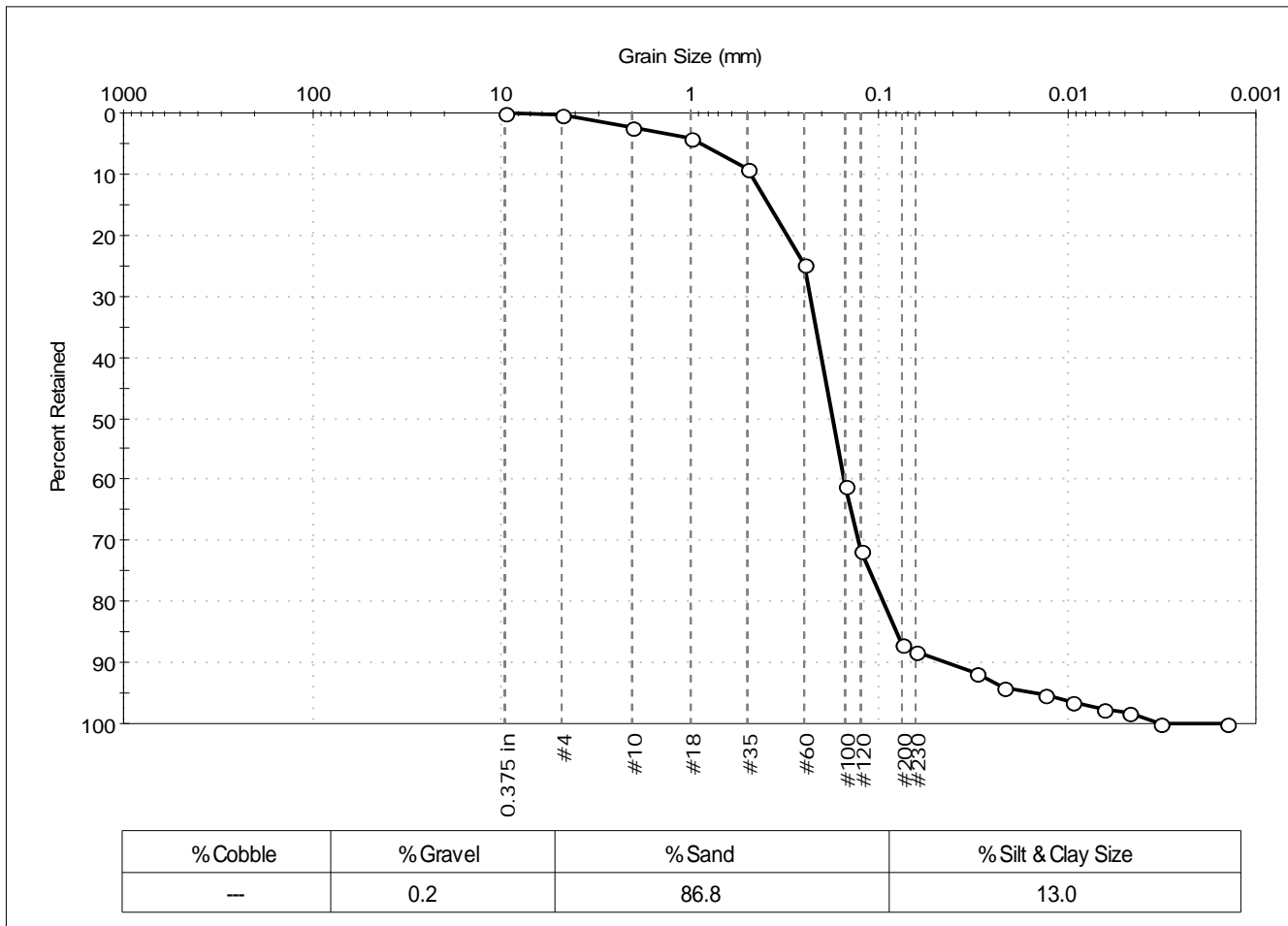
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ROUNDED         |  |
| Sand/Gravel Hardness : HARD                  |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 208-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0261                  | Test Date:   | 11/04/14   |
| Depth:              | ---                         | Test Id:     | 310545     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark gray silty sand   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 61           |               |          |
| #120       | 0.12               | 72           |               |          |
| #200       | 0.075              | 87           |               |          |
| #230       | 0.063              | 88           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0301             | 92           |               |          |
| ---        | 0.0219             | 94           |               |          |
| ---        | 0.0131             | 95           |               |          |
| ---        | 0.0094             | 96           |               |          |
| ---        | 0.0065             | 98           |               |          |
| ---        | 0.0047             | 98           |               |          |
| ---        | 0.0032             | 100          |               |          |
| ---        | 0.0014             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3848 mm | D <sub>30</sub> = 0.1286 mm |
| D <sub>60</sub> = 0.2019 mm | D <sub>15</sub> = 0.0803 mm |
| D <sub>50</sub> = 0.1754 mm | D <sub>10</sub> = 0.0440 mm |
| C <sub>u</sub> = 4.589      | C <sub>c</sub> = 1.862      |

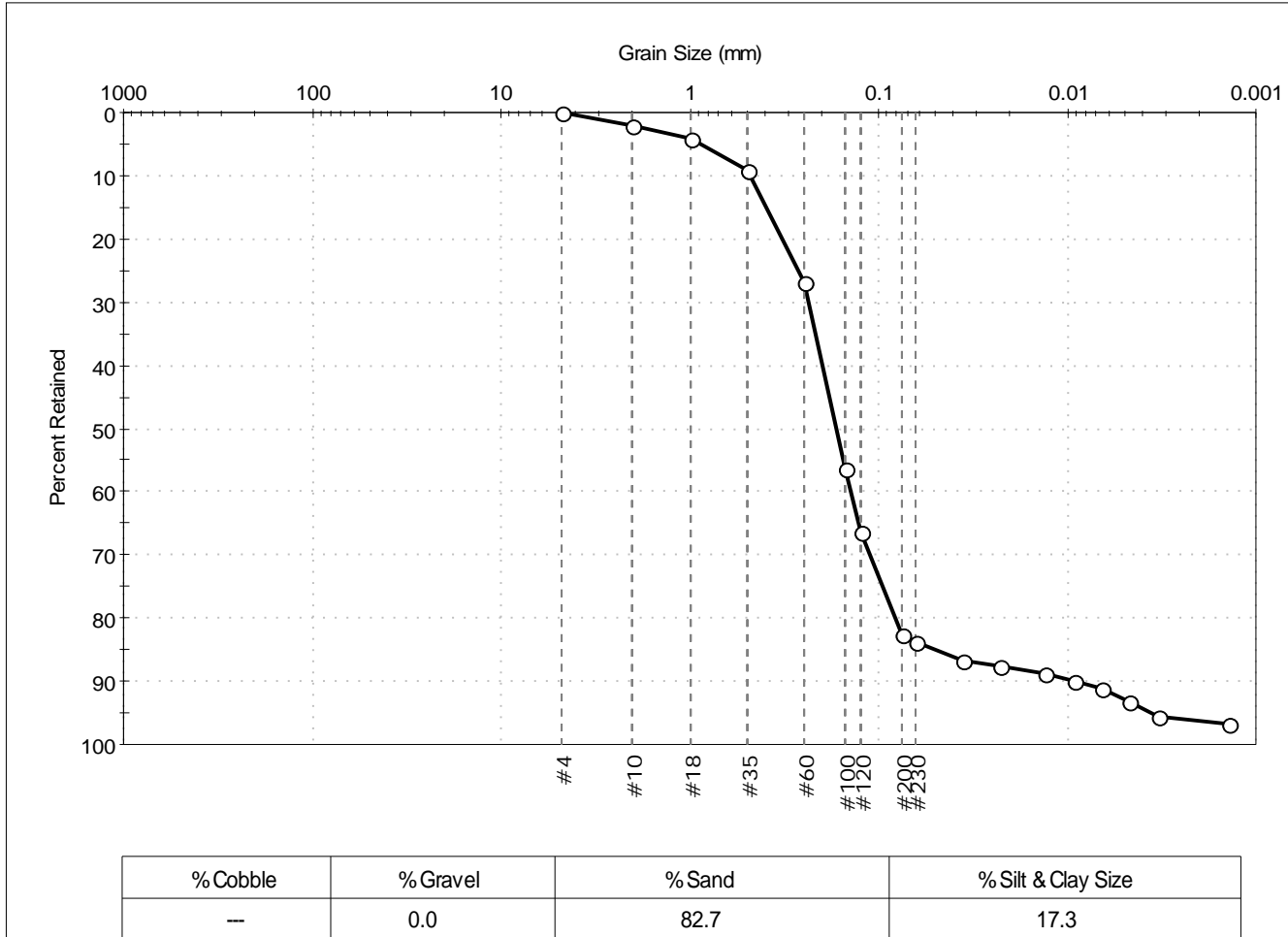
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 208-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0262                     | Test Date:   | 10/23/14   |
| Depth:              | ---                            | Test Id:     | 310482     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 27           |               |          |
| #100       | 0.15               | 56           |               |          |
| #120       | 0.12               | 66           |               |          |
| #200       | 0.075              | 83           |               |          |
| #230       | 0.063              | 84           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0358             | 87           |               |          |
| ---        | 0.0227             | 88           |               |          |
| ---        | 0.0131             | 89           |               |          |
| ---        | 0.0093             | 90           |               |          |
| ---        | 0.0066             | 91           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3978 mm | D <sub>30</sub> = 0.1115 mm |
| D <sub>60</sub> = 0.1991 mm | D <sub>15</sub> = 0.0502 mm |
| D <sub>50</sub> = 0.1676 mm | D <sub>10</sub> = 0.0092 mm |
| C <sub>u</sub> = 21.641     | C <sub>c</sub> = 6.787      |

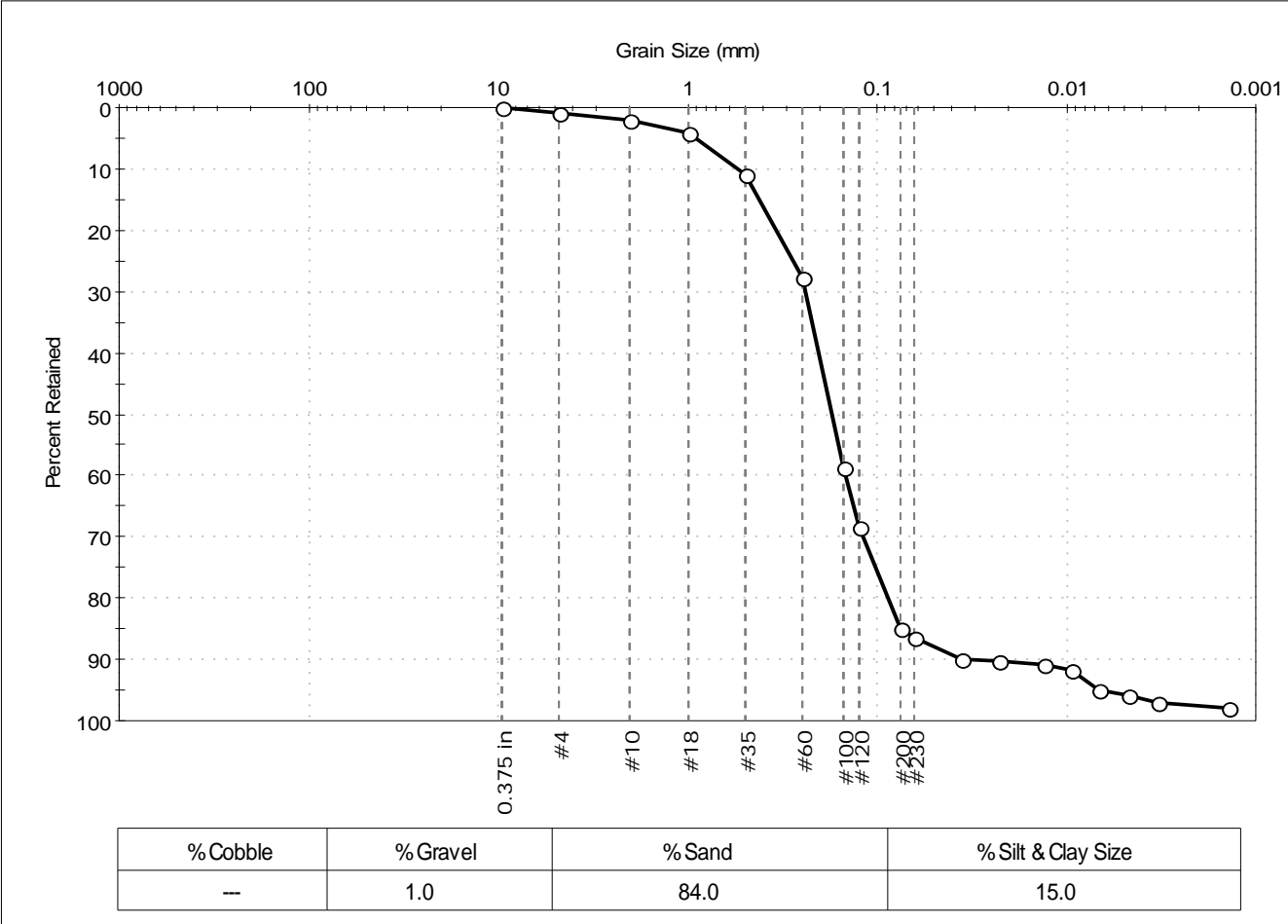
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 208-14LTM                               | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0262DUP                           | Test Date: 10/27/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310483             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet, very dark gray silty sand |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 28           |               |          |
| #100       | 0.15               | 59           |               |          |
| #120       | 0.12               | 69           |               |          |
| #200       | 0.075              | 85           |               |          |
| #230       | 0.063              | 86           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0360             | 90           |               |          |
| ---        | 0.0228             | 90           |               |          |
| ---        | 0.0132             | 91           |               |          |
| ---        | 0.0093             | 92           |               |          |
| ---        | 0.0067             | 95           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 97           |               |          |
| ---        | 0.0014             | 98           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4205 mm | D <sub>30</sub> = 0.1195 mm |
| D <sub>60</sub> = 0.2040 mm | D <sub>15</sub> = 0.0749 mm |
| D <sub>50</sub> = 0.1729 mm | D <sub>10</sub> = 0.0313 mm |
| C <sub>u</sub> = 6.518      | C <sub>c</sub> = 2.236      |

**Classification**

|        |  |
|--------|--|
| ASTM   | N/A  |
| AASHTO | Stone Fragments, Gravel and Sand (A-1-b (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

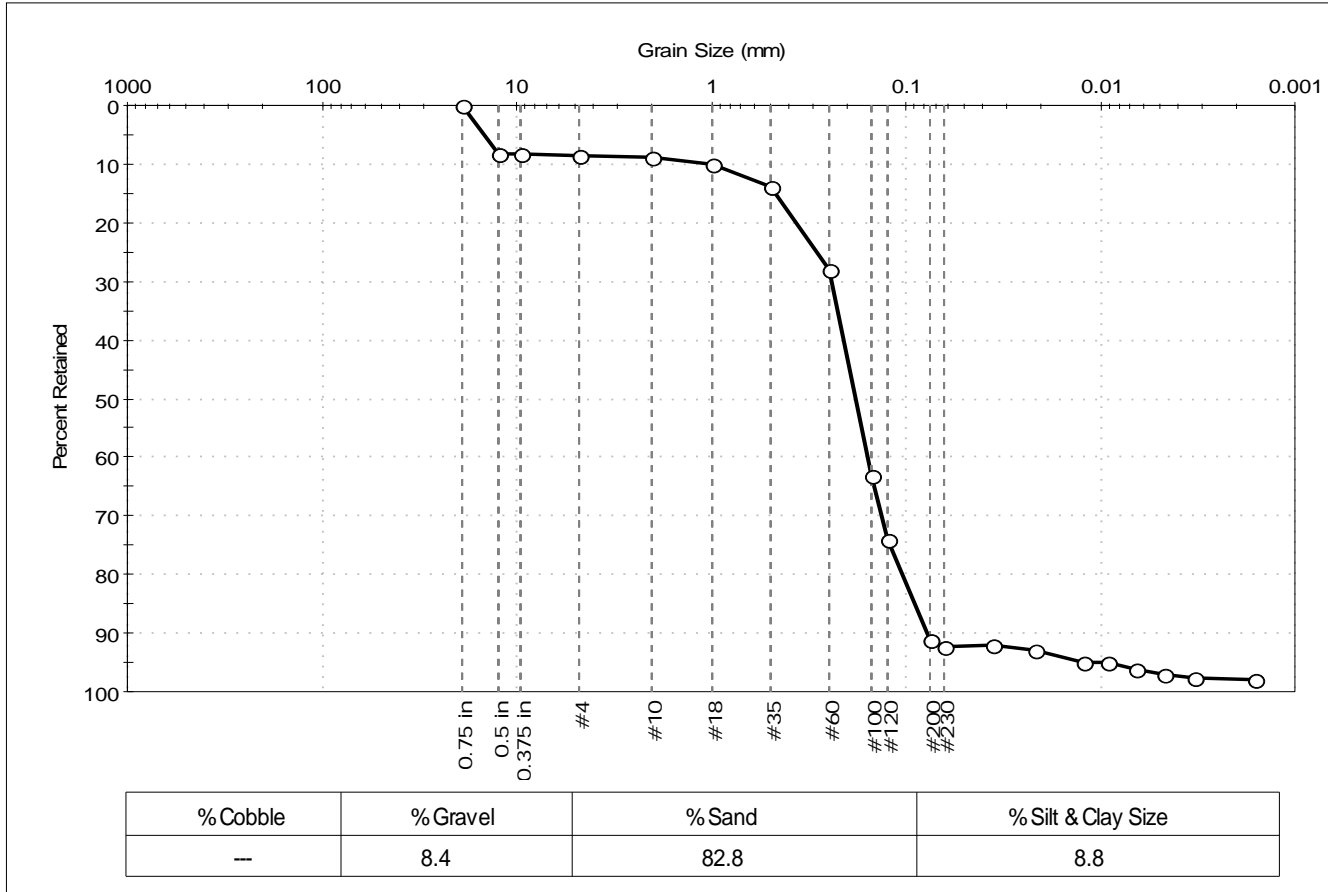
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                               | Project No: GTX-302366 |
| Boring ID: 208-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0263               | Test Date: 11/03/14         | Test Id: 310484   |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray sand with silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 8            |               |          |
| 0.375 in   | 9.50               | 8            |               |          |
| #4         | 4.75               | 8            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 14           |               |          |
| #60        | 0.25               | 28           |               |          |
| #100       | 0.15               | 63           |               |          |
| #120       | 0.12               | 74           |               |          |
| #200       | 0.075              | 91.2         |               |          |
| #230       | 0.063              | 92           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0357             | 92           |               |          |
| ---        | 0.0218             | 93           |               |          |
| ---        | 0.0124             | 95           |               |          |
| ---        | 0.0093             | 95           |               |          |
| ---        | 0.0066             | 96           |               |          |
| ---        | 0.0047             | 97           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0016             | 98           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4713 mm | D <sub>30</sub> = 0.1336 mm |
| D <sub>60</sub> = 0.2100 mm | D <sub>15</sub> = 0.0902 mm |
| D <sub>50</sub> = 0.1815 mm | D <sub>10</sub> = 0.0778 mm |
| C <sub>u</sub> = 2.699      | C <sub>c</sub> = 1.092      |

| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (1)) |

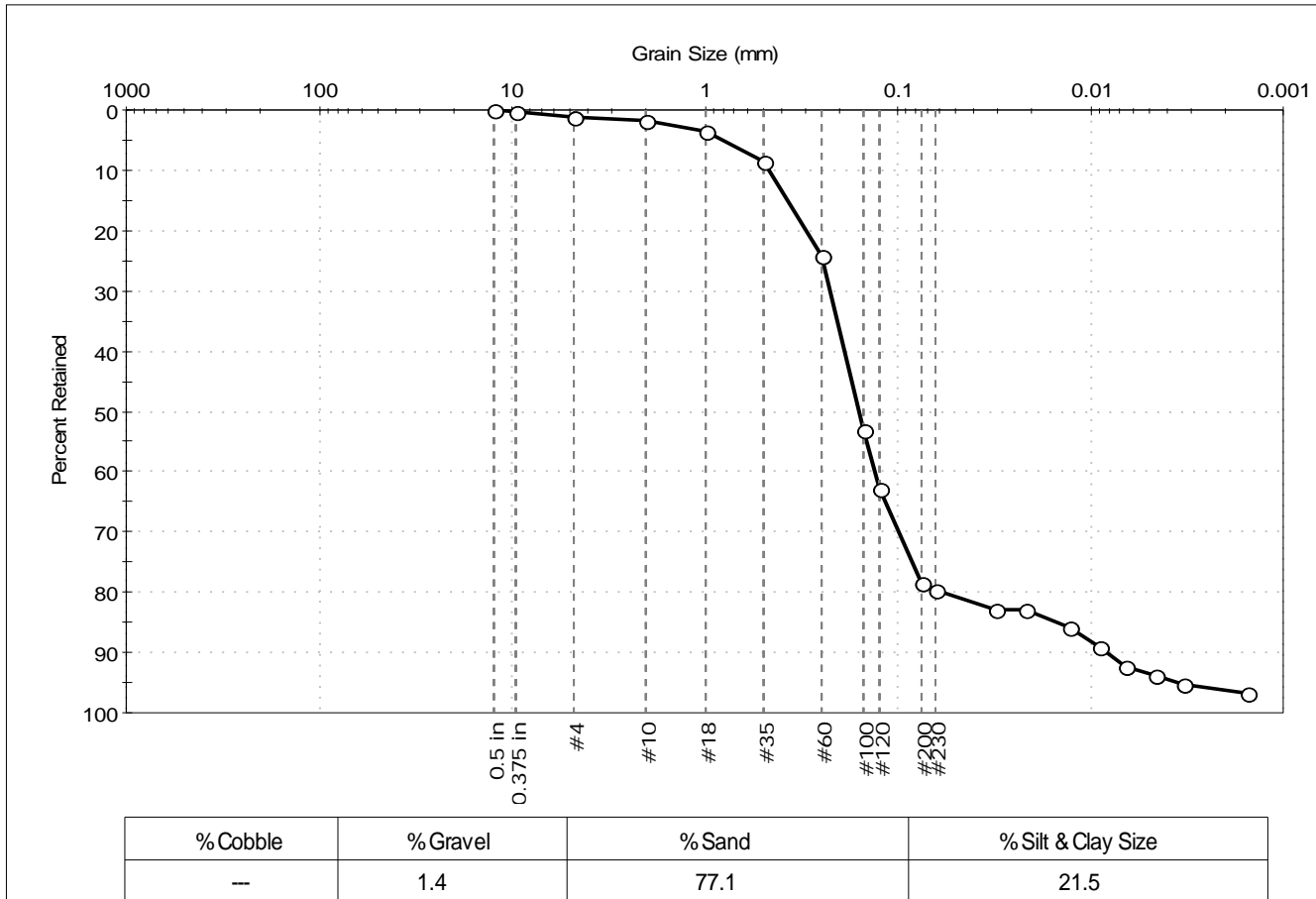
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |  |
| Sand/Gravel Hardness : <b>HARD</b>           |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 208-14LTM                                | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0264                               | Test Date: 11/03/14         | Test Id: 310481           |                        |
| Depth: ---  |                             |                           |                        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray silty sand |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 53           |               |          |
| #120       | 0.12               | 63           |               |          |
| #200       | 0.075              | 78           |               |          |
| #230       | 0.063              | 80           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0308             | 83           |               |          |
| ---        | 0.0218             | 83           |               |          |
| ---        | 0.0128             | 86           |               |          |
| ---        | 0.0091             | 89           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0015             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3752 mm | D <sub>30</sub> = 0.0987 mm |
| D <sub>60</sub> = 0.1892 mm | D <sub>15</sub> = 0.0151 mm |
| D <sub>50</sub> = 0.1584 mm | D <sub>10</sub> = 0.0082 mm |
| C <sub>u</sub> = 23.073     | C <sub>c</sub> = 6.279      |

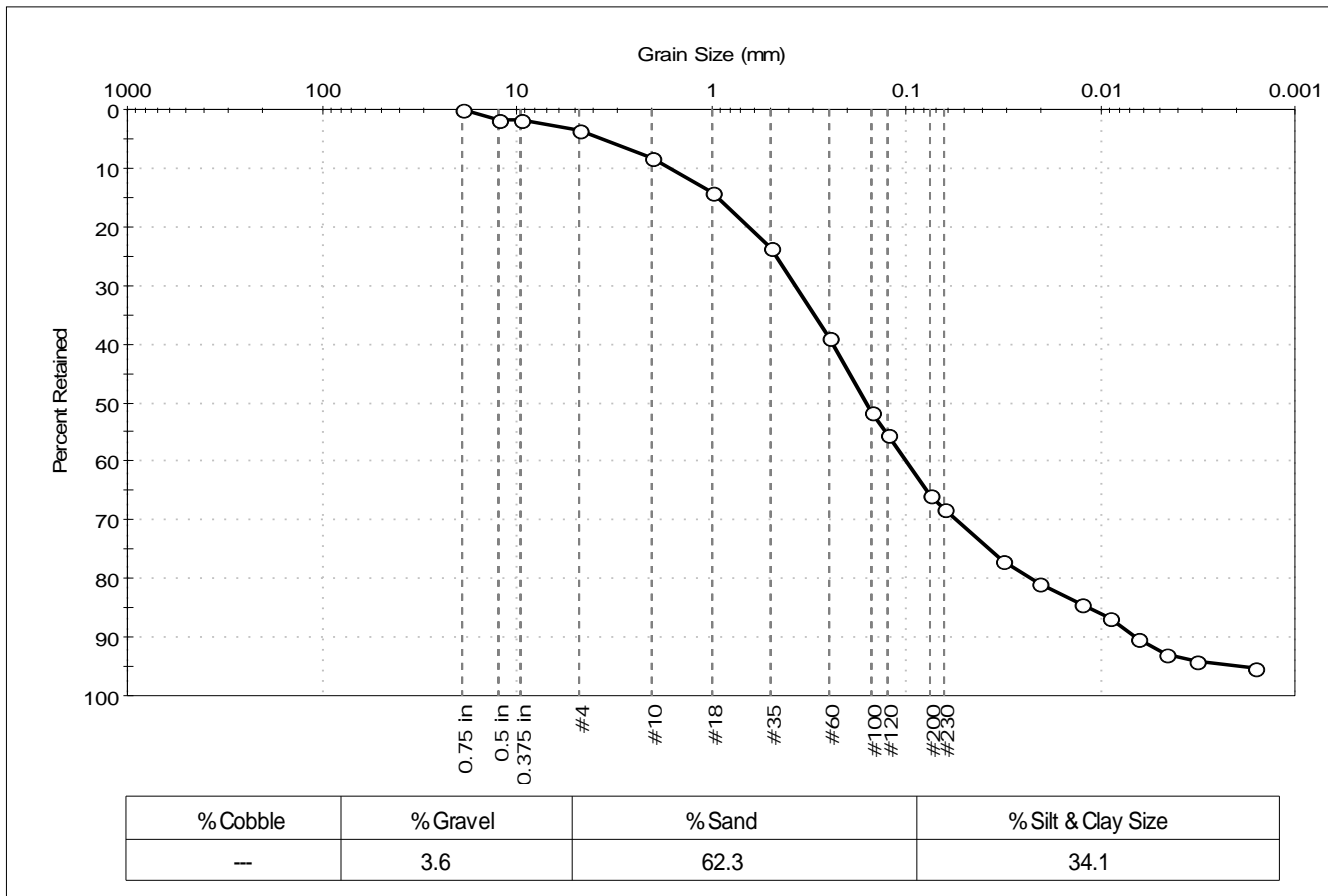
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 207-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0265               | Test Date: 11/03/14         | Test Id: 310485                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 2            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 39           |               |          |
| #100       | 0.15               | 51           |               |          |
| #120       | 0.12               | 55           |               |          |
| #200       | 0.075              | 66           |               |          |
| #230       | 0.063              | 68           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 77           |               |          |
| ---        | 0.0207             | 81           |               |          |
| ---        | 0.0124             | 84           |               |          |
| ---        | 0.0089             | 87           |               |          |
| ---        | 0.0064             | 90           |               |          |
| ---        | 0.0046             | 93           |               |          |
| ---        | 0.0032             | 94           |               |          |
| ---        | 0.0016             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.9439 mm | D <sub>30</sub> = 0.0543 mm |
| D <sub>60</sub> = 0.2398 mm | D <sub>15</sub> = 0.0114 mm |
| D <sub>50</sub> = 0.1594 mm | D <sub>10</sub> = 0.0066 mm |
| C <sub>u</sub> = 36.333     | C <sub>c</sub> = 1.863      |

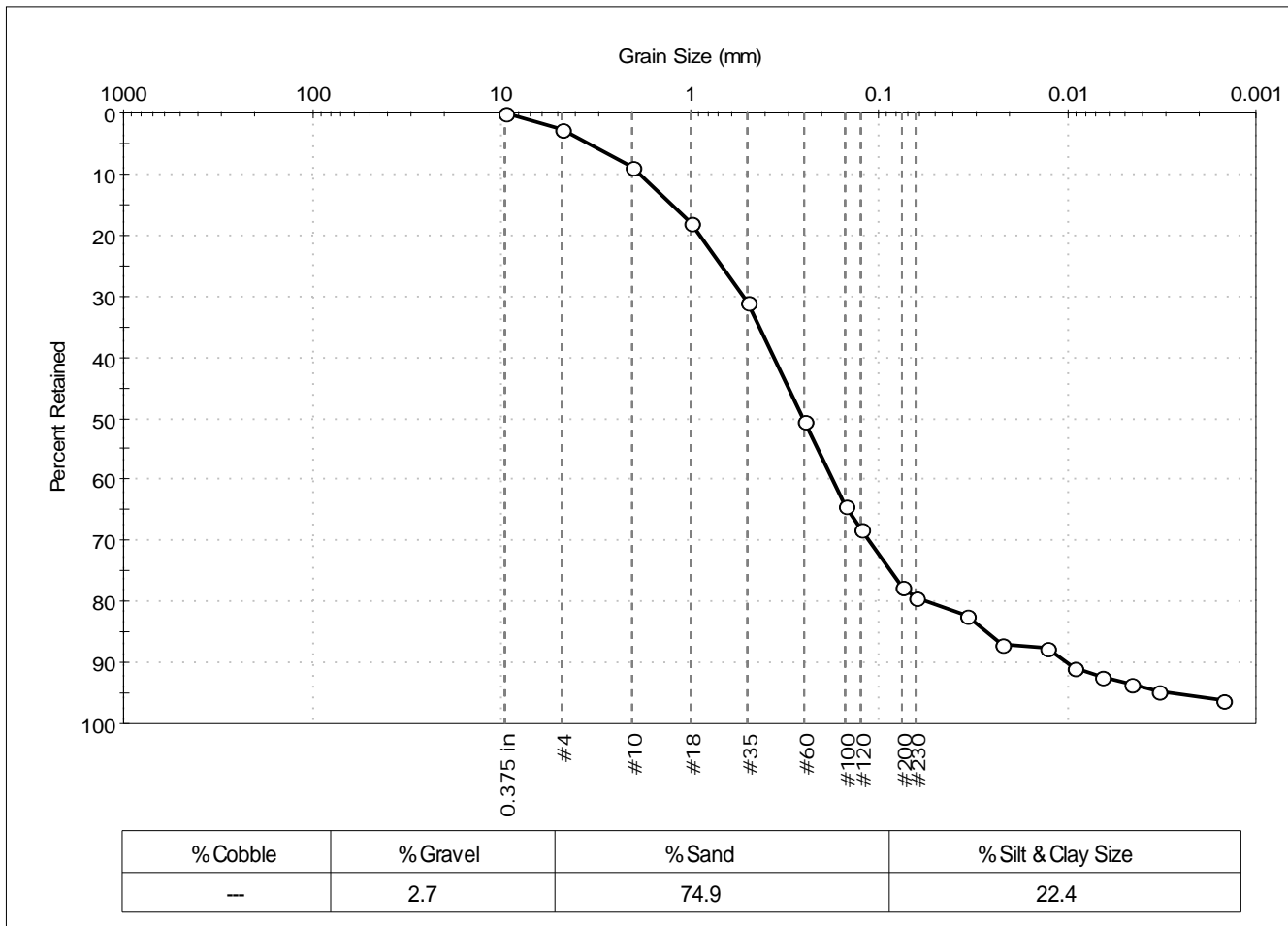
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 207-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0266  
 Test Date: 11/06/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310486  
 Test Comment: ---  
 Sample Description: Wet, olive gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 18           |               |          |
| #35        | 0.50               | 31           |               |          |
| #60        | 0.25               | 50           |               |          |
| #100       | 0.15               | 64           |               |          |
| #120       | 0.12               | 68           |               |          |
| #200       | 0.075              | 78           |               |          |
| #230       | 0.063              | 79           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0339             | 82           |               |          |
| ---        | 0.0220             | 87           |               |          |
| ---        | 0.0128             | 88           |               |          |
| ---        | 0.0091             | 91           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0015             | 96           |               |          |

**Coefficients**

|                              |                              |
|------------------------------|------------------------------|
| $D_{85} = 1.2573 \text{ mm}$ | $D_{30} = 0.1125 \text{ mm}$ |
| $D_{60} = 0.3629 \text{ mm}$ | $D_{15} = 0.0265 \text{ mm}$ |
| $D_{50} = 0.2531 \text{ mm}$ | $D_{10} = 0.0100 \text{ mm}$ |
| $C_u = 36.290$               | $C_c = 3.488$                |

**Classification**

|  |  |
|--|--|
| <u>ASTM</u> N/A  |  |
| <u>AASHTO</u> Stone Fragments, Gravel and Sand (A-1-b (0)) |  |

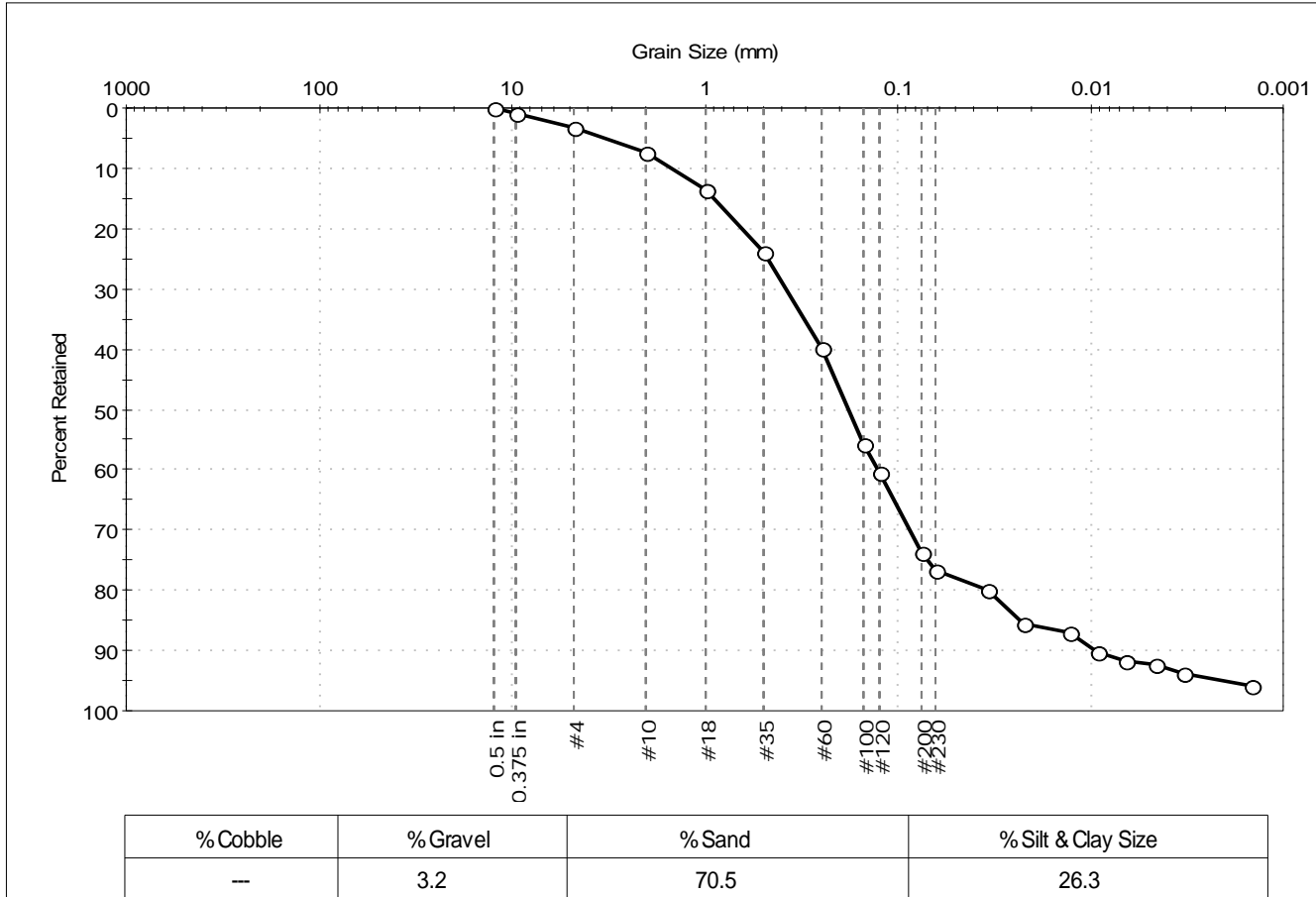
**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**  
 Sand/Gravel Hardness : **HARD**  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #200 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                             | Project No: GTX-302366 |
| Boring ID: 207-14LTM                | Sample Type: bag            | Tested By: jbr  | Checked By: jdt        |
| Sample ID: NBH14-0267               | Test Date: 11/07/14         | Test Id: 310487                                       |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Moist, dark olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 14           |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 56           |               |          |
| #120       | 0.12               | 61           |               |          |
| #200       | 0.075              | 74           |               |          |
| #230       | 0.063              | 77           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 80           |               |          |
| ---        | 0.0221             | 86           |               |          |
| ---        | 0.0128             | 87           |               |          |
| ---        | 0.0092             | 90           |               |          |
| ---        | 0.0065             | 92           |               |          |
| ---        | 0.0046             | 92           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0015             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.9077 mm | D <sub>30</sub> = 0.0866 mm |
| D <sub>60</sub> = 0.2487 mm | D <sub>15</sub> = 0.0230 mm |
| D <sub>50</sub> = 0.1809 mm | D <sub>10</sub> = 0.0095 mm |
| C <sub>u</sub> = 26.179     | C <sub>c</sub> = 3.174      |

**Classification**

|               |                                   |
|---------------|-----------------------------------|
| <u>ASTM</u>   | N/A                               |
| <u>AASHTO</u> | Silty Gravel and Sand (A-2-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

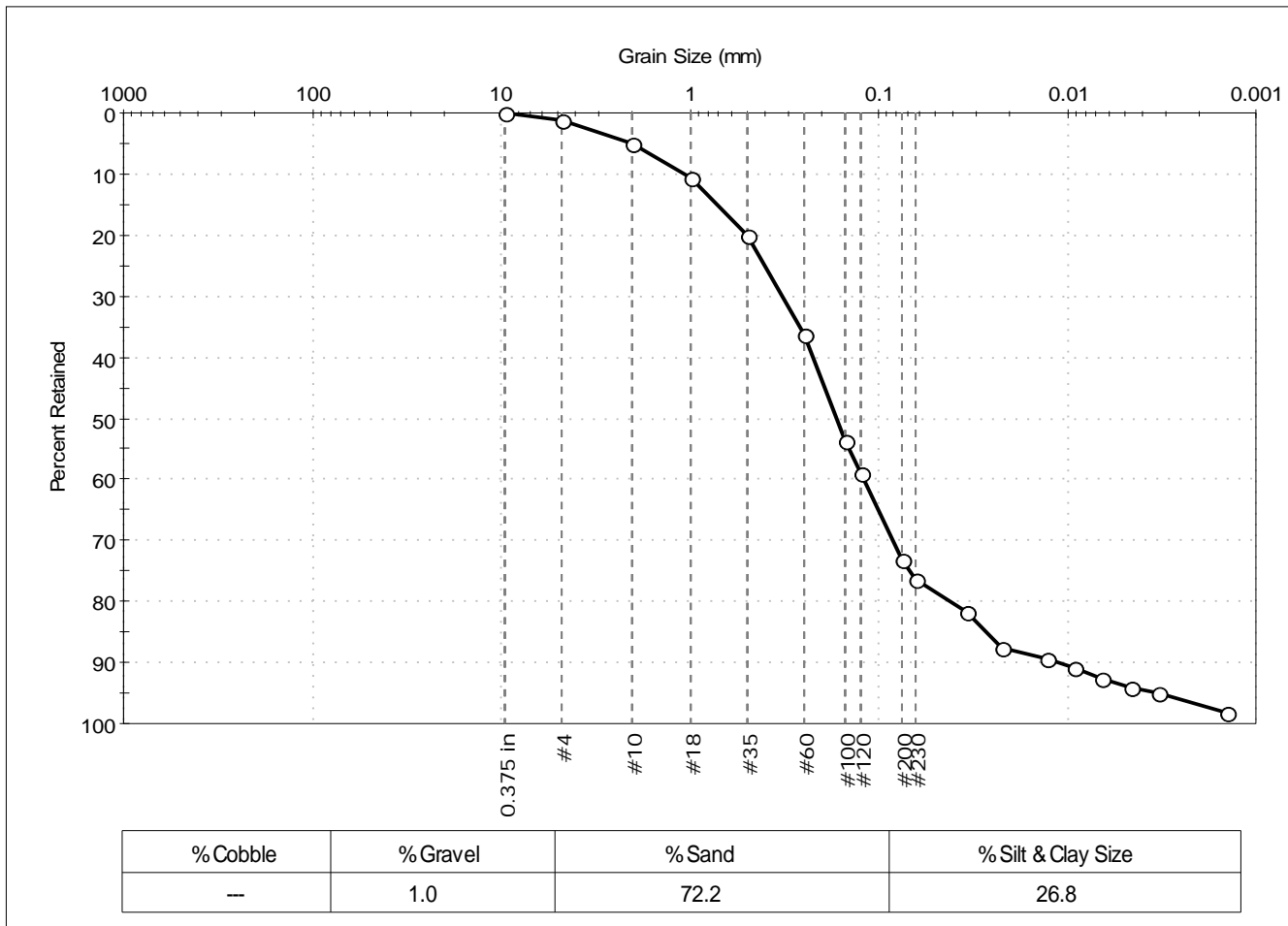
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|                     |                                  |              |            |
|---------------------|----------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute      |              |            |
| Project:            | New Bedford Harbor               |              |            |
| Location:           | New Bedford, MA                  | Project No:  | GTX-302366 |
| Boring ID:          | 207-14LTM                        | Sample Type: | bag        |
| Sample ID:          | NBH14-0268                       | Test Date:   | 11/13/14   |
| Depth:              | ---                              | Test Id:     | 310488     |
| Test Comment:       | ---                              |              |            |
| Sample Description: | Moist, very dark gray silty sand |              |            |
| Sample Comment:     | ---                              |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 5            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 20           |               |          |
| #60        | 0.25               | 36           |               |          |
| #100       | 0.15               | 54           |               |          |
| #120       | 0.12               | 59           |               |          |
| #200       | 0.075              | 73           |               |          |
| #230       | 0.063              | 76           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 82           |               |          |
| ---        | 0.0222             | 88           |               |          |
| ---        | 0.0129             | 89           |               |          |
| ---        | 0.0092             | 91           |               |          |
| ---        | 0.0065             | 93           |               |          |
| ---        | 0.0046             | 94           |               |          |
| ---        | 0.0033             | 95           |               |          |
| ---        | 0.0014             | 98           |               |          |

**Coefficients**

|                      |                      |
|----------------------|----------------------|
| $D_{85} = 0.7238$ mm | $D_{30} = 0.0842$ mm |
| $D_{60} = 0.2247$ mm | $D_{15} = 0.0269$ mm |
| $D_{50} = 0.1674$ mm | $D_{10} = 0.0111$ mm |
| $C_u = 20.243$       | $C_c = 2.842$        |

**Classification**

|        |                                   |
|--------|-----------------------------------|
| ASTM   | N/A                               |
| AASHTO | Silty Gravel and Sand (A-2-4 (0)) |

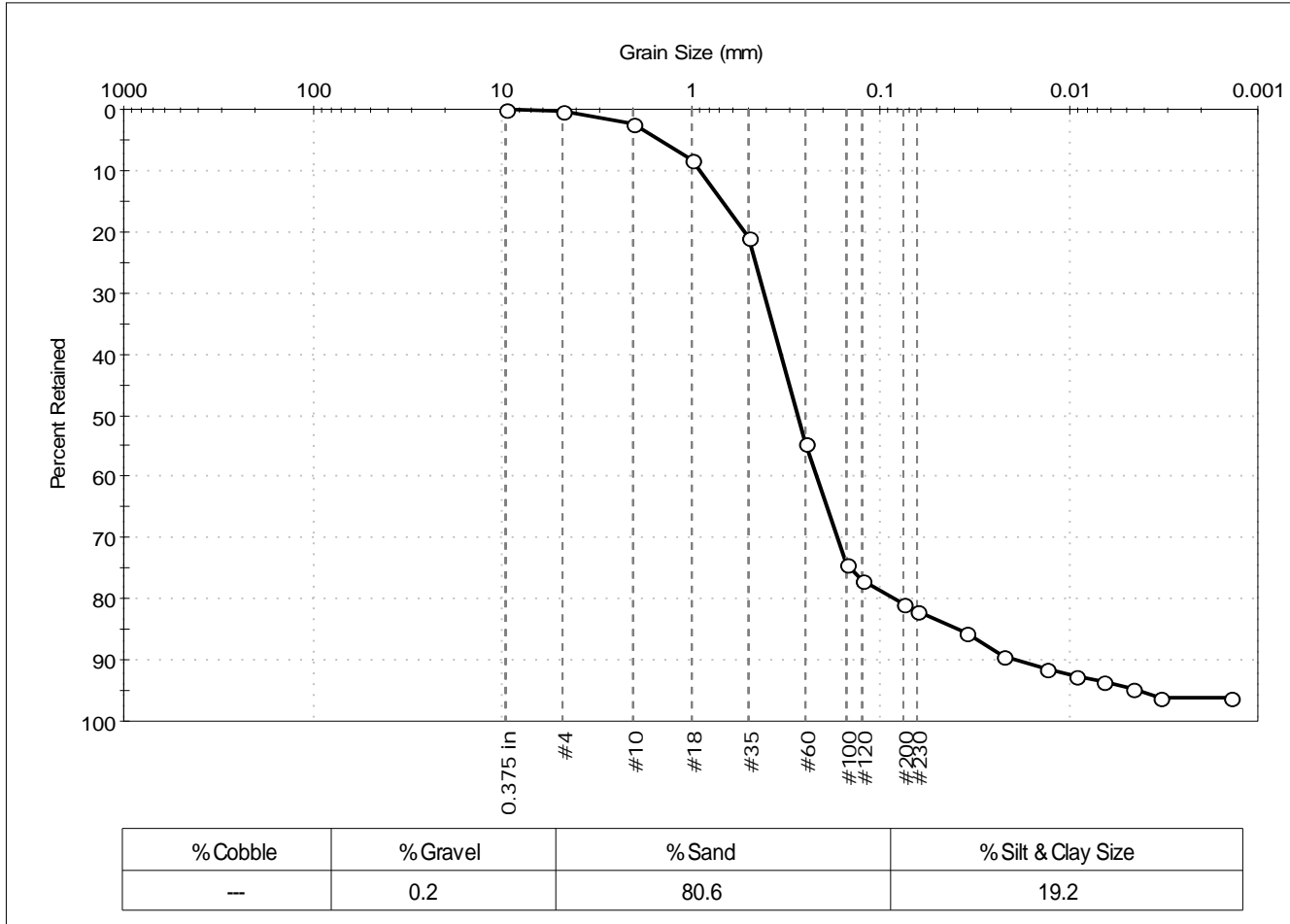
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 332-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0269                  | Test Date:   | 10/29/14   |
| Depth:              | ---                         | Test Id:     | 310489     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, olive brown silty sand |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 8            |               |          |
| #35        | 0.50               | 21           |               |          |
| #60        | 0.25               | 54           |               |          |
| #100       | 0.15               | 74           |               |          |
| #120       | 0.12               | 77           |               |          |
| #200       | 0.075              | 81           |               |          |
| #230       | 0.063              | 82           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0348             | 86           |               |          |
| ---        | 0.0223             | 89           |               |          |
| ---        | 0.0131             | 91           |               |          |
| ---        | 0.0093             | 93           |               |          |
| ---        | 0.0066             | 93           |               |          |
| ---        | 0.0047             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.6930 mm | D <sub>30</sub> = 0.1673 mm |
| D <sub>60</sub> = 0.3372 mm | D <sub>15</sub> = 0.0380 mm |
| D <sub>50</sub> = 0.2742 mm | D <sub>10</sub> = 0.0193 mm |
| C <sub>u</sub> = 17.472     | C <sub>c</sub> = 4.301      |

| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (0)) |

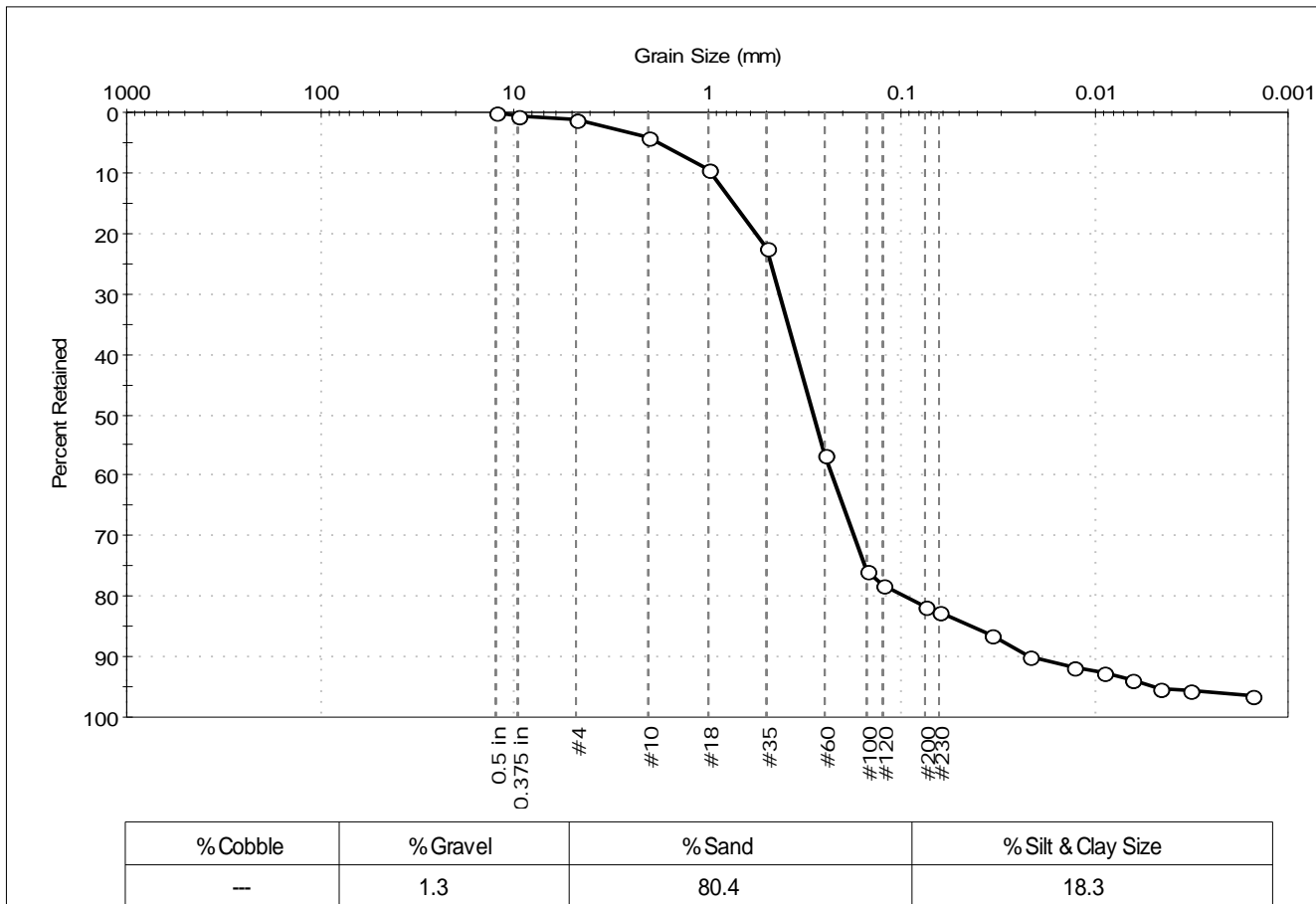
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 332-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0270               | Test Date: 11/03/14         | Test Id: 310490                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 1            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 57           |               |          |
| #100       | 0.15               | 76           |               |          |
| #120       | 0.12               | 78           |               |          |
| #200       | 0.075              | 82           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 86           |               |          |
| ---        | 0.0215             | 90           |               |          |
| ---        | 0.0128             | 92           |               |          |
| ---        | 0.0091             | 92           |               |          |
| ---        | 0.0065             | 94           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0015             | 96           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7474 mm | D <sub>30</sub> = 0.1752 mm |
| D <sub>60</sub> = 0.3510 mm | D <sub>15</sub> = 0.0427 mm |
| D <sub>50</sub> = 0.2867 mm | D <sub>10</sub> = 0.0205 mm |
| C <sub>u</sub> = 17.122     | C <sub>c</sub> = 4.266      |

**Classification**

|               |  |
|---------------|--|
| <b>ASTM</b>   | N/A  |
| <b>AASHTO</b> | Stone Fragments, Gravel and Sand (A-1-b (0)) |

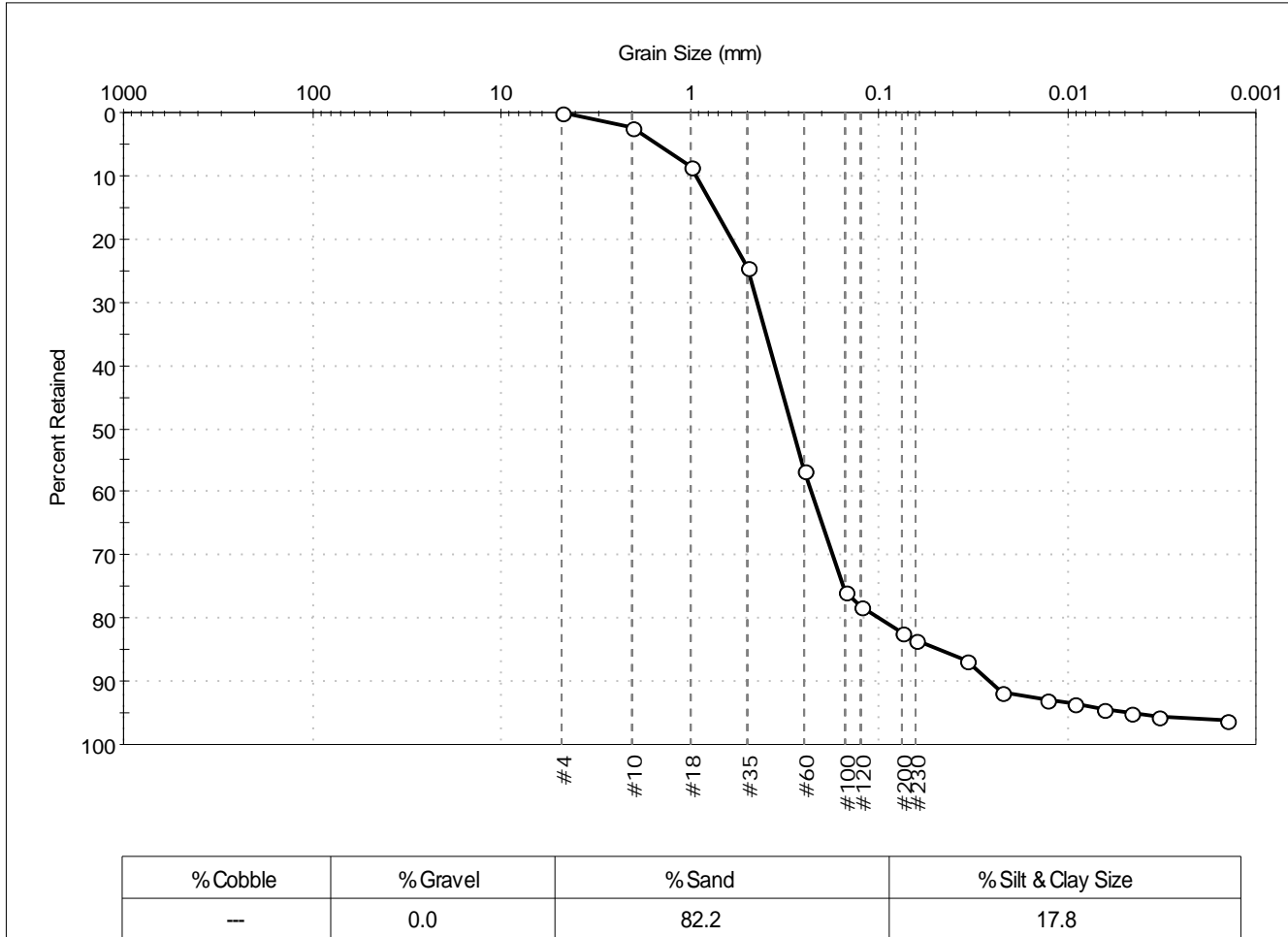
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #200 Sieve



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 332-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0271                  | Test Date:   | 10/30/14   |
| Depth:              | ---                         | Test Id:     | 310491     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, olive brown silty sand |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 24           |               |          |
| #60        | 0.25               | 56           |               |          |
| #100       | 0.15               | 76           |               |          |
| #120       | 0.12               | 78           |               |          |
| #200       | 0.075              | 82           |               |          |
| #230       | 0.063              | 83           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0342             | 87           |               |          |
| ---        | 0.0221             | 92           |               |          |
| ---        | 0.0129             | 93           |               |          |
| ---        | 0.0091             | 93           |               |          |
| ---        | 0.0065             | 95           |               |          |
| ---        | 0.0046             | 95           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7567 mm | D <sub>30</sub> = 0.1745 mm |
| D <sub>60</sub> = 0.3569 mm | D <sub>15</sub> = 0.0473 mm |
| D <sub>50</sub> = 0.2876 mm | D <sub>10</sub> = 0.0258 mm |
| C <sub>u</sub> = 13.833     | C <sub>c</sub> = 3.307      |

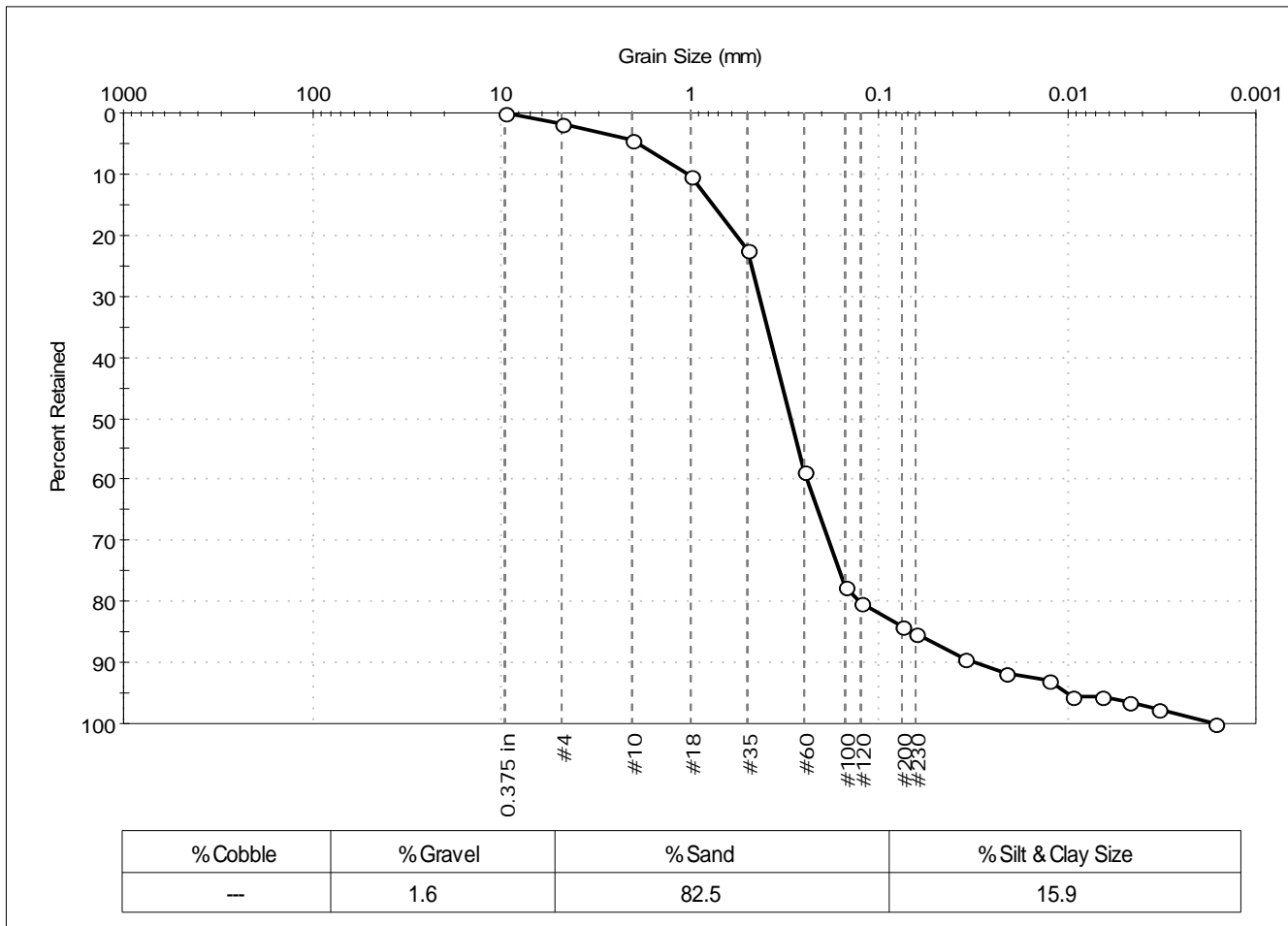
| <u>Classification</u> |  |
|-----------------------|--|
| <u>ASTM</u>           | N/A  |
| <u>AASHTO</u>         | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                      | Project No: GTX-302366 |
| Boring ID: 332-14LTM                | Sample Type: bag            | Tested By: jbr                                 | Checked By: jdt        |
| Sample ID: NBH14-0272               | Test Date: 11/04/14         | Test Id: 310492                                |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 10           |               |          |
| #35        | 0.50               | 23           |               |          |
| #60        | 0.25               | 59           |               |          |
| #100       | 0.15               | 78           |               |          |
| #120       | 0.12               | 80           |               |          |
| #200       | 0.075              | 84           |               |          |
| #230       | 0.063              | 85           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0346             | 89           |               |          |
| ---        | 0.0210             | 92           |               |          |
| ---        | 0.0125             | 93           |               |          |
| ---        | 0.0094             | 96           |               |          |
| ---        | 0.0066             | 96           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 98           |               |          |
| ---        | 0.0017             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7646 mm | D <sub>30</sub> = 0.1840 mm |
| D <sub>60</sub> = 0.3575 mm | D <sub>15</sub> = 0.0642 mm |
| D <sub>50</sub> = 0.2950 mm | D <sub>10</sub> = 0.0306 mm |
| C <sub>u</sub> = 11.683     | C <sub>c</sub> = 3.095      |

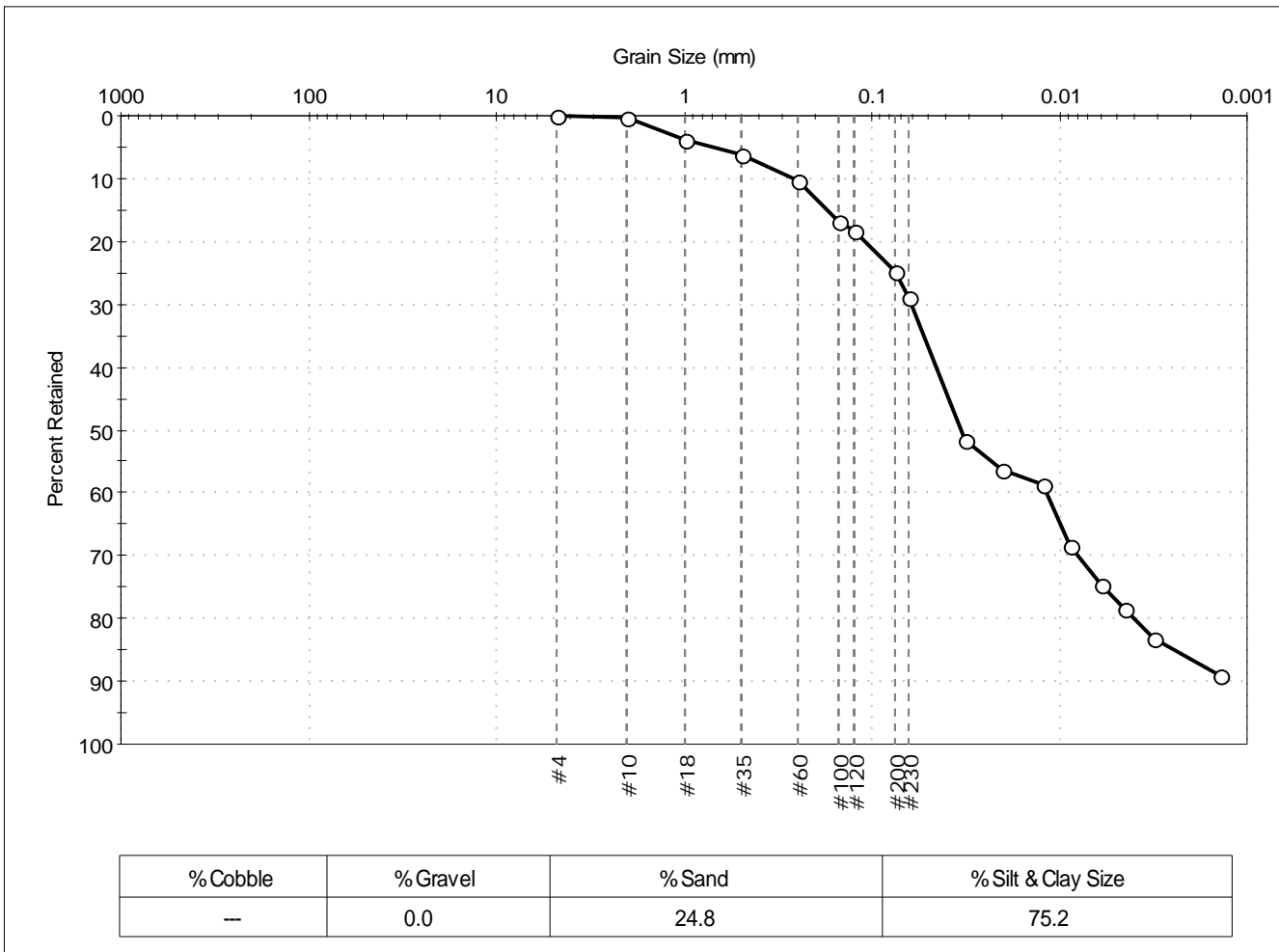
| <u>Classification</u> |  |
|-----------------------|--|
| ASTM                  | N/A  |
| AASHTO                | Stone Fragments, Gravel and Sand (A-1-b (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 338-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0273  
 Test Date: 11/04/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310493  
 Test Comment: ---  
 Sample Description: Wet, olive gray silt with sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 18           |               |          |
| #200       | 0.075              | 25           |               |          |
| #230       | 0.063              | 29           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 52           |               |          |
| ---        | 0.0202             | 56           |               |          |
| ---        | 0.0124             | 59           |               |          |
| ---        | 0.0089             | 68           |               |          |
| ---        | 0.0060             | 75           |               |          |
| ---        | 0.0045             | 78           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1723 mm | D <sub>30</sub> = 0.0080 mm |
| D <sub>60</sub> = 0.0452 mm | D <sub>15</sub> = 0.0025 mm |
| D <sub>50</sub> = 0.0334 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

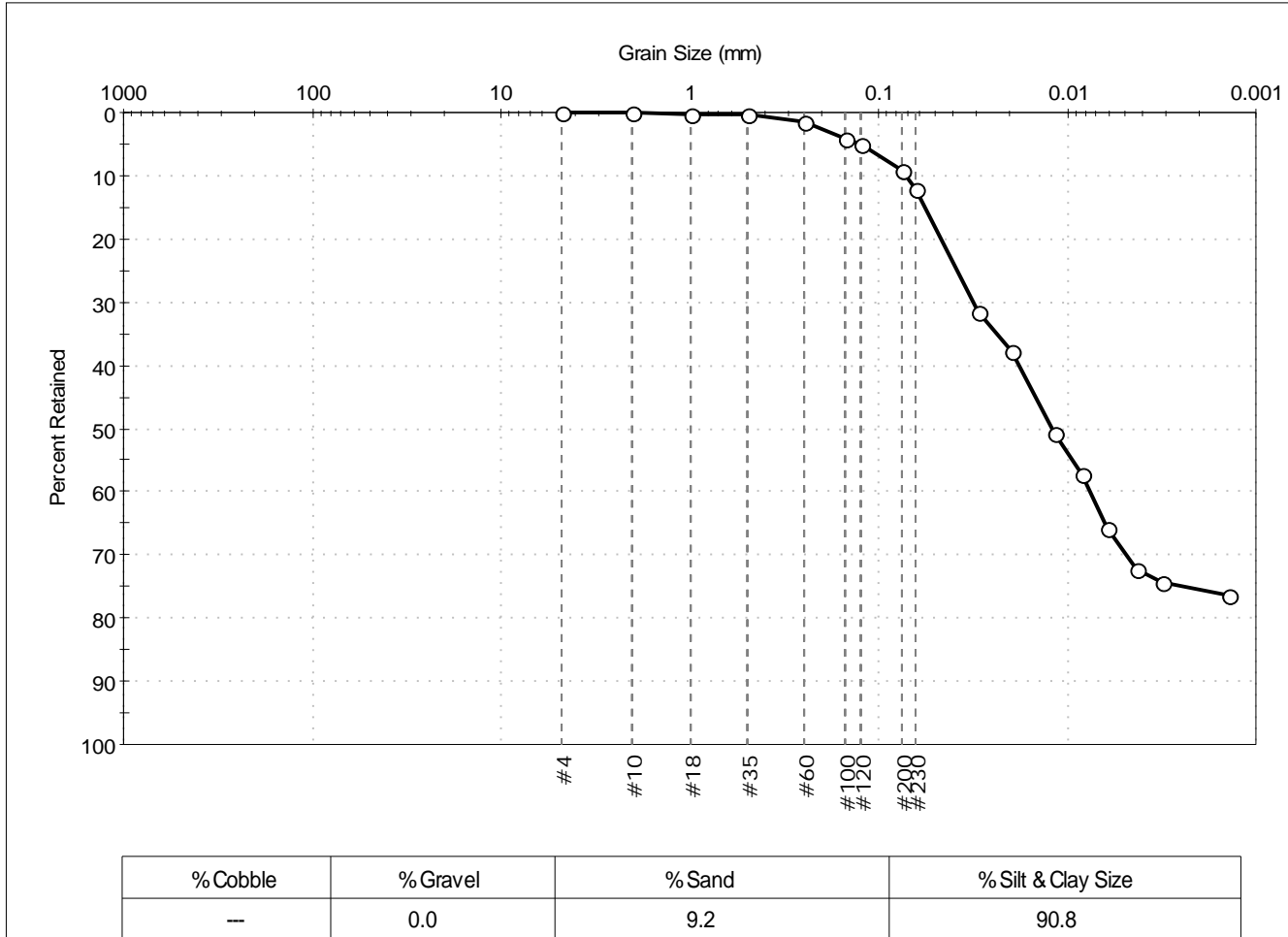
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 338-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0274                  | Test Date:   | 11/03/14   |
| Depth:              | ---                         | Test Id:     | 310494     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, olive brown silt       |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 0            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 9            |               |          |
| #230       | 0.063              | 12           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0294             | 31           |               |          |
| ---        | 0.0198             | 38           |               |          |
| ---        | 0.0117             | 51           |               |          |
| ---        | 0.0083             | 57           |               |          |
| ---        | 0.0061             | 66           |               |          |
| ---        | 0.0043             | 72           |               |          |
| ---        | 0.0031             | 74           |               |          |
| ---        | 0.0014             | 76           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0562 mm | D <sub>30</sub> = 0.0048 mm |
| D <sub>60</sub> = 0.0181 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0121 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

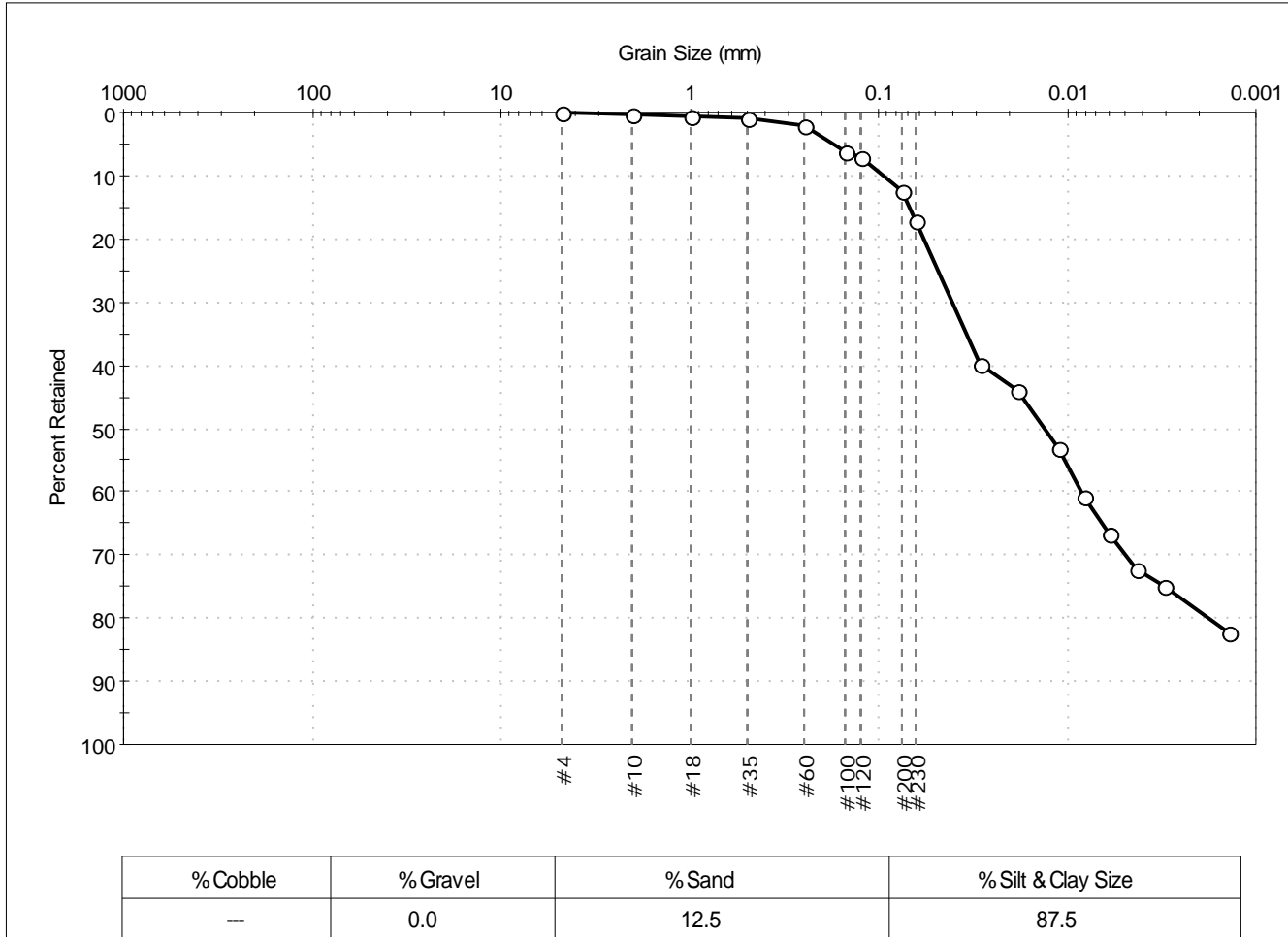
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                | Project No: GTX-302366 |
| Boring ID: 338-14LTM                | Sample Type: bag            | Tested By: jbr                           | Checked By: jdt        |
| Sample ID: NBH14-0275               | Test Date: 10/30/14         | Test Id: 310495                          |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 13           |               |          |
| #230       | 0.063              | 17           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0288             | 40           |               |          |
| ---        | 0.0186             | 44           |               |          |
| ---        | 0.0112             | 53           |               |          |
| ---        | 0.0082             | 61           |               |          |
| ---        | 0.0059             | 67           |               |          |
| ---        | 0.0043             | 72           |               |          |
| ---        | 0.0031             | 75           |               |          |
| ---        | 0.0014             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0682 mm | D <sub>30</sub> = 0.0049 mm |
| D <sub>60</sub> = 0.0281 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0133 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

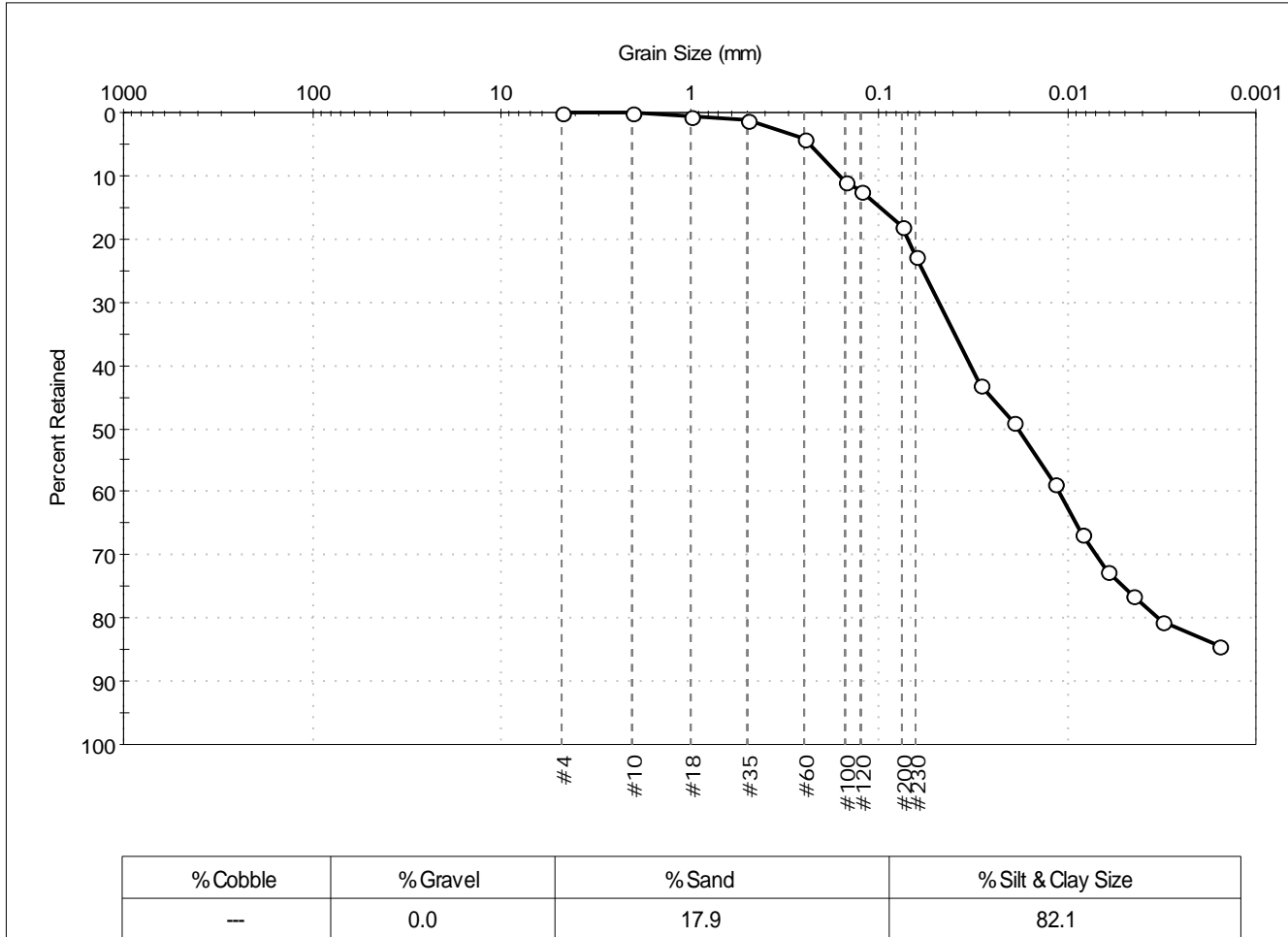
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 338-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0276                  | Test Date:   | 11/03/14   |
| Depth:              | ---                         | Test Id:     | 310496     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 11           |               |          |
| #120       | 0.12               | 12           |               |          |
| #200       | 0.075              | 18           |               |          |
| #230       | 0.063              | 23           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0292             | 43           |               |          |
| ---        | 0.0193             | 49           |               |          |
| ---        | 0.0116             | 59           |               |          |
| ---        | 0.0083             | 67           |               |          |
| ---        | 0.0062             | 73           |               |          |
| ---        | 0.0044             | 76           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0016             | 84           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0977 mm | D <sub>30</sub> = 0.0070 mm |
| D <sub>60</sub> = 0.0328 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0183 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

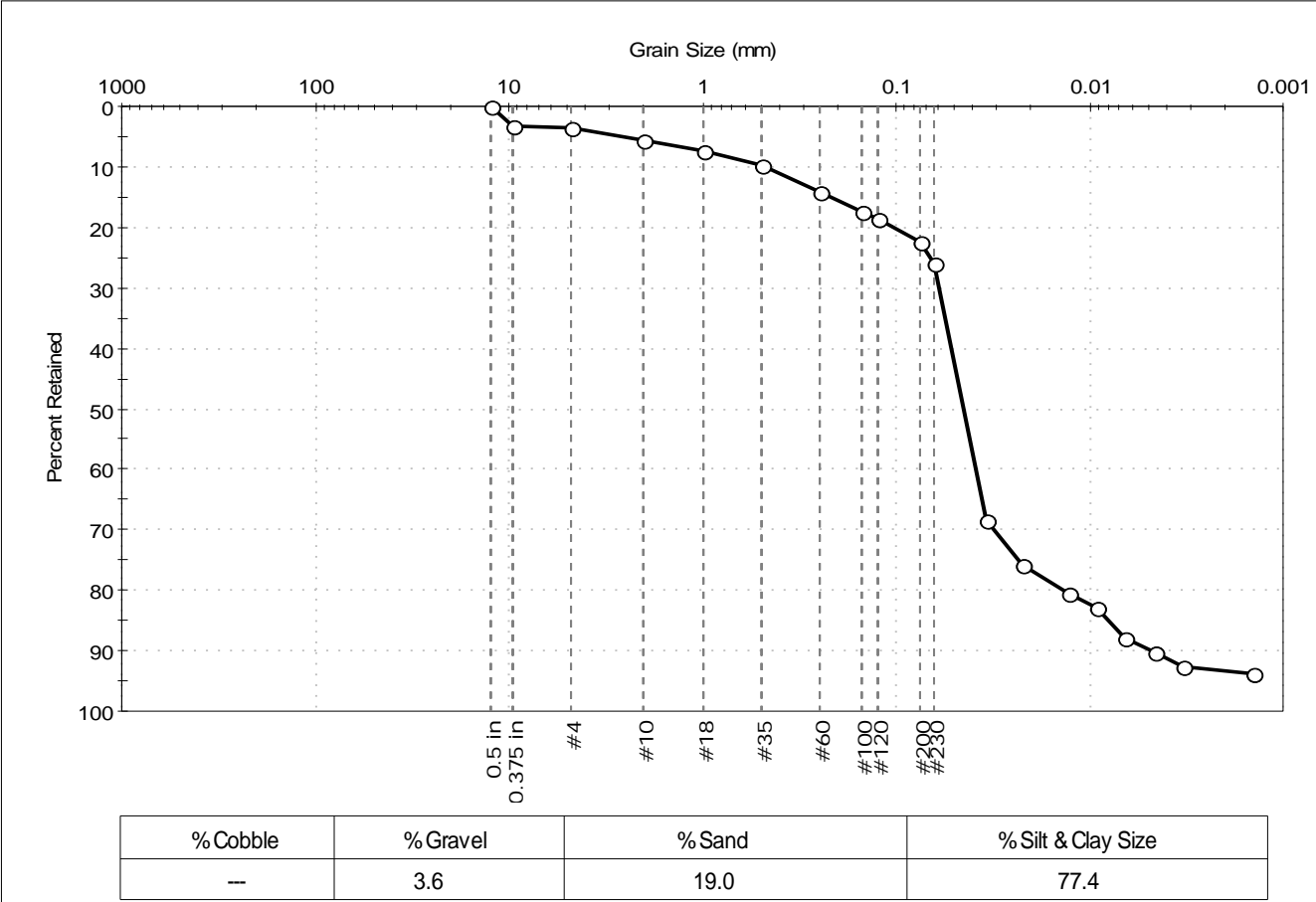
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 331-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0277               | Test Date: 11/19/14         | Test Id: 310497                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 3            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 17           |               |          |
| #120       | 0.12               | 19           |               |          |
| #200       | 0.075              | 23           |               |          |
| #230       | 0.063              | 26           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0341             | 68           |               |          |
| ---        | 0.0222             | 76           |               |          |
| ---        | 0.0129             | 81           |               |          |
| ---        | 0.0092             | 83           |               |          |
| ---        | 0.0065             | 88           |               |          |
| ---        | 0.0046             | 90           |               |          |
| ---        | 0.0033             | 93           |               |          |
| ---        | 0.0014             | 94           |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2208 mm | D <sub>30</sub> = 0.0311 mm |
| D <sub>60</sub> = 0.0515 mm | D <sub>15</sub> = 0.0080 mm |
| D <sub>50</sub> = 0.0446 mm | D <sub>10</sub> = 0.0048 mm |
| C <sub>u</sub> = 10.729     | C <sub>c</sub> = 3.913      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

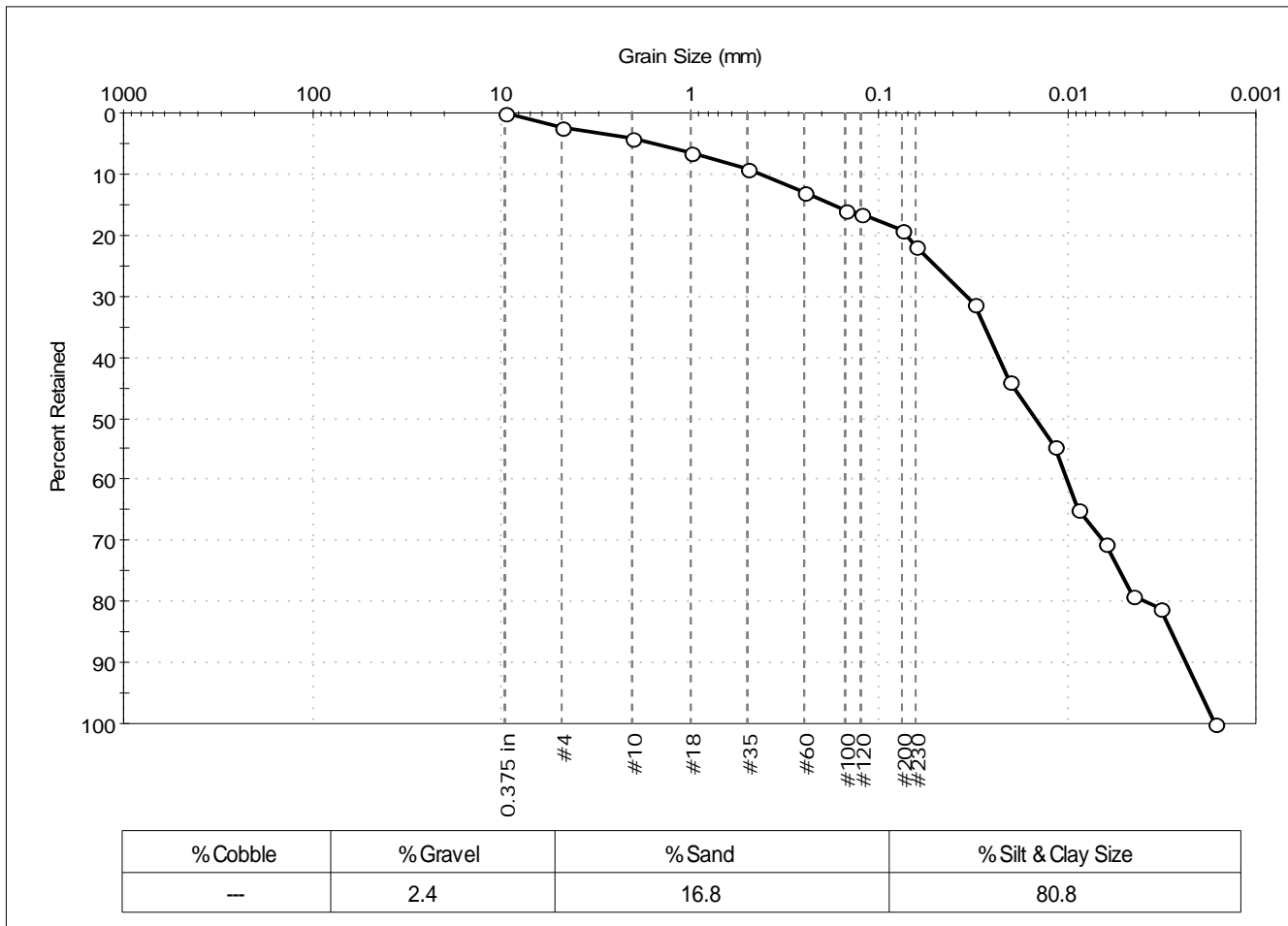
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 331-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0278               | Test Date: 11/04/14         | Test Id: 310498                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 9            |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 16           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 19           |               |          |
| #230       | 0.063              | 22           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0312             | 31           |               |          |
| ---        | 0.0201             | 44           |               |          |
| ---        | 0.0117             | 54           |               |          |
| ---        | 0.0087             | 65           |               |          |
| ---        | 0.0062             | 71           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0017             | 100          |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1734 mm | D <sub>30</sub> = 0.0064 mm |
| D <sub>60</sub> = 0.0231 mm | D <sub>15</sub> = 0.0028 mm |
| D <sub>50</sub> = 0.0147 mm | D <sub>10</sub> = 0.0024 mm |
| C <sub>u</sub> = 9.625      | C <sub>c</sub> = 0.739      |

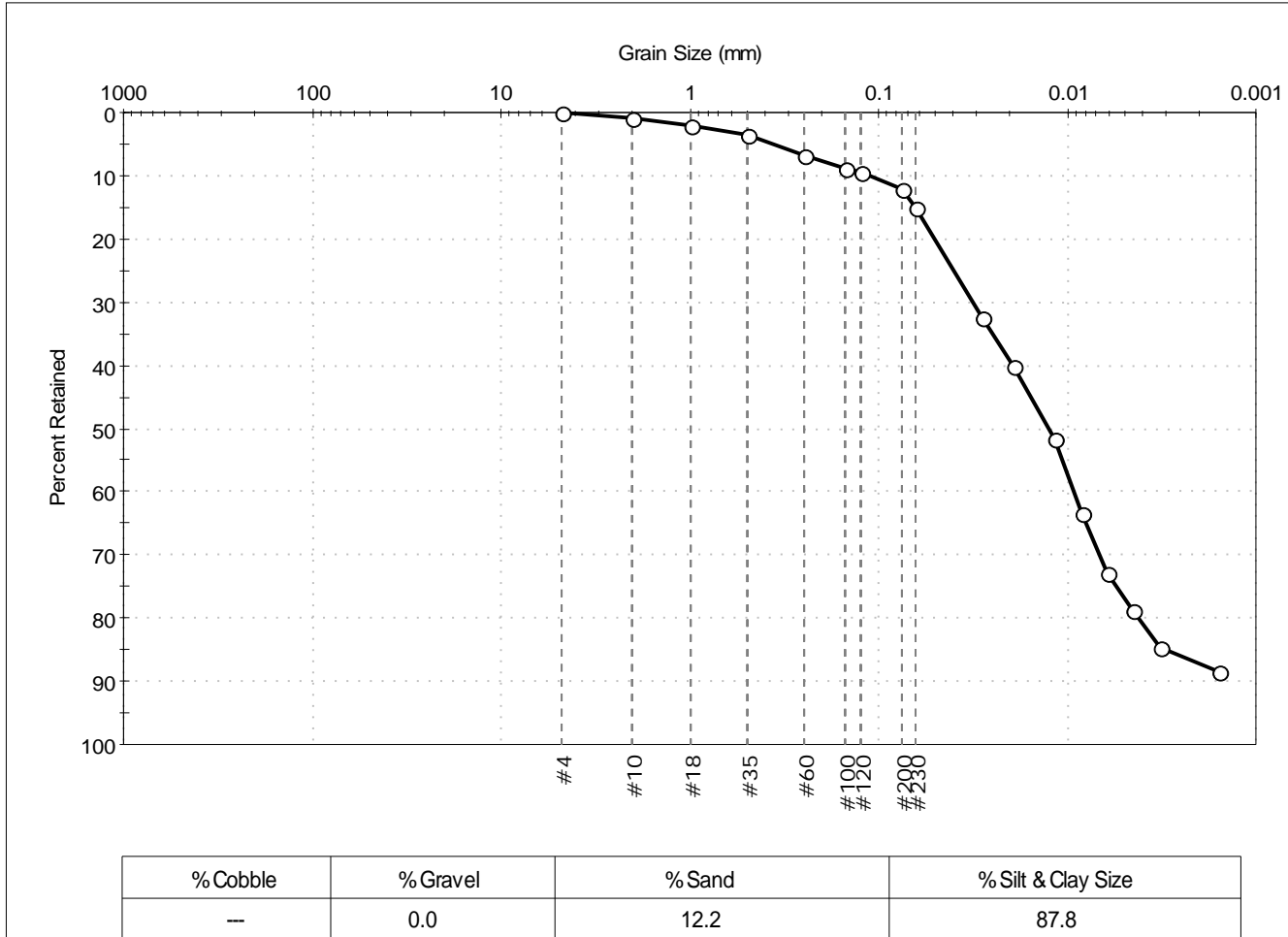
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                | Project No: GTX-302366 |
| Boring ID: 331-14LTM                | Sample Type: bag            | Tested By: jbr                           | Checked By: jdt        |
| Sample ID: NBH14-0279               | Test Date: 11/03/14         | Test Id: 310499                          |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 9            |               |          |
| #200       | 0.075              | 12           |               |          |
| #230       | 0.063              | 15           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0283             | 32           |               |          |
| ---        | 0.0193             | 40           |               |          |
| ---        | 0.0116             | 52           |               |          |
| ---        | 0.0084             | 63           |               |          |
| ---        | 0.0062             | 73           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0016             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0634 mm | D <sub>30</sub> = 0.0068 mm |
| D <sub>60</sub> = 0.0194 mm | D <sub>15</sub> = 0.0029 mm |
| D <sub>50</sub> = 0.0125 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

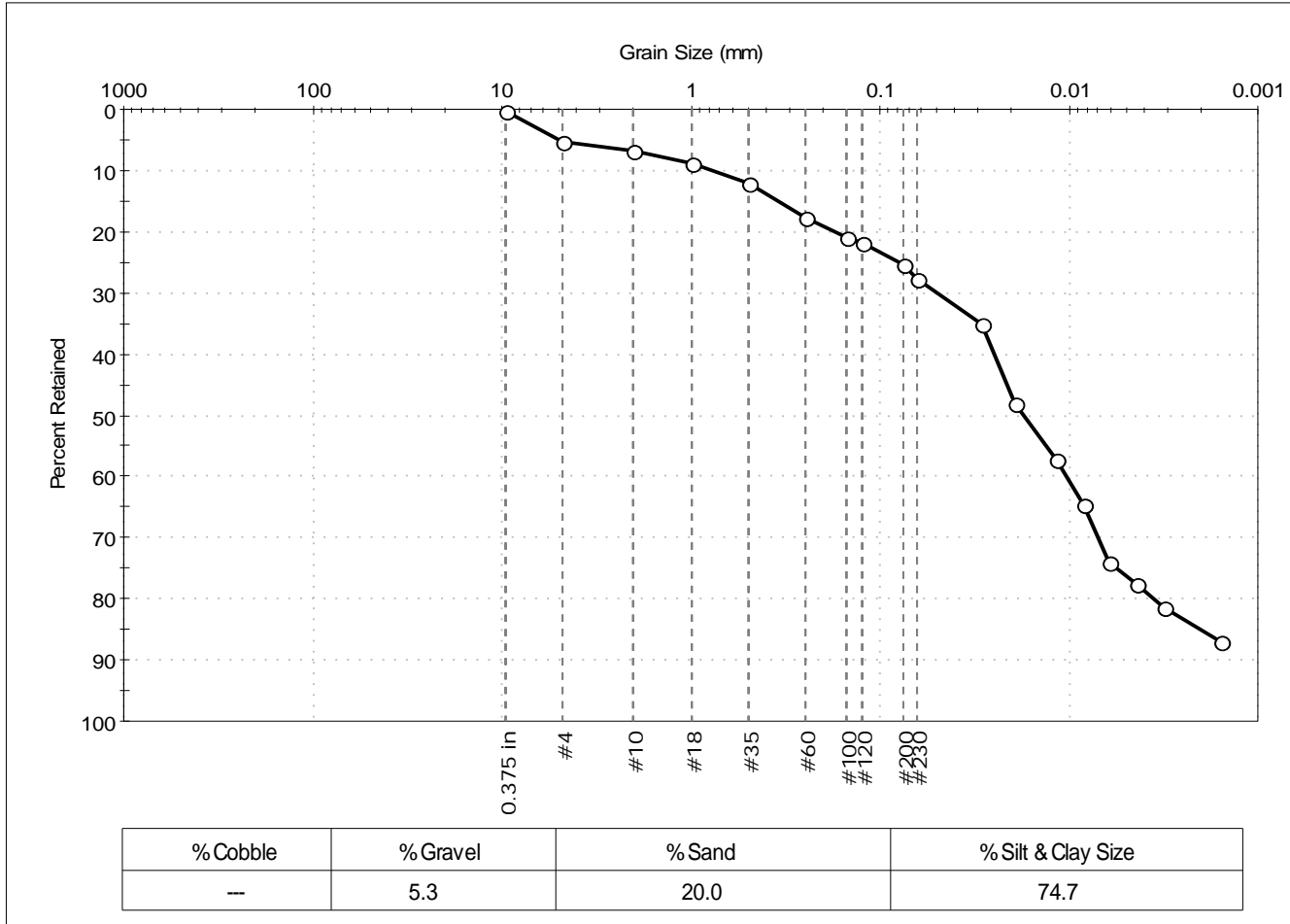
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute               | Project No: GTX-302366 |
| Project: New Bedford Harbor                       |                        |
| Location: New Bedford, MA                         |                        |
| Boring ID: 331-14LTM                              | Sample Type: bag       |
| Sample ID: NBH14-0280                             | Test Date: 11/03/14    |
| Depth: ---  | Test Id: 310500        |
| Test Comment: ---                                 | Tested By: jbr         |
| Sample Description: Wet, dark gray silt with sand | Checked By: jdt        |
| Sample Comment: ---                               |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 5            |               |          |
| #10        | 2.00               | 7            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 25           |               |          |
| #230       | 0.063              | 28           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0292             | 35           |               |          |
| ---        | 0.0191             | 48           |               |          |
| ---        | 0.0117             | 57           |               |          |
| ---        | 0.0084             | 65           |               |          |
| ---        | 0.0062             | 74           |               |          |
| ---        | 0.0044             | 78           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0016             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3454 mm | D <sub>30</sub> = 0.0070 mm |
| D <sub>60</sub> = 0.0248 mm | D <sub>15</sub> = 0.0020 mm |
| D <sub>50</sub> = 0.0172 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

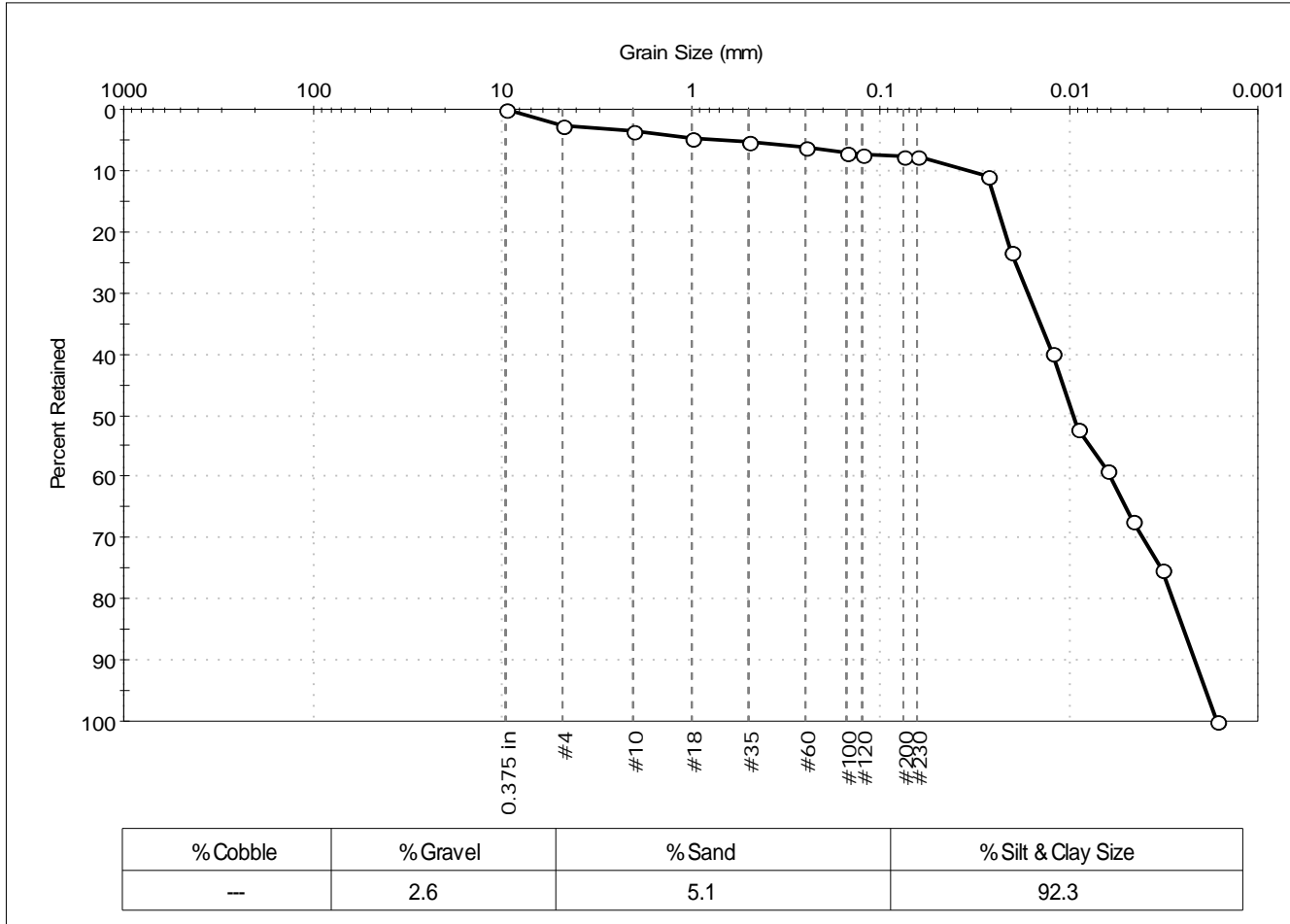
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 323-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0281                  | Test Date:   | 11/04/14   |
| Depth:              | ---                         | Test Id:     | 310501     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive gray silt   |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 8            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0269             | 11           |               |          |
| ---        | 0.0205             | 23           |               |          |
| ---        | 0.0123             | 40           |               |          |
| ---        | 0.0090             | 52           |               |          |
| ---        | 0.0063             | 59           |               |          |
| ---        | 0.0046             | 67           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0017             | 100          |               |          |

**Coefficients**

|                             |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0246 mm | D <sub>30</sub> = 0.0041 mm |
| D <sub>60</sub> = 0.0122 mm | D <sub>15</sub> = 0.0025 mm |
| D <sub>50</sub> = 0.0095 mm | D <sub>10</sub> = 0.0022 mm |
| C <sub>u</sub> = 5.545      | C <sub>c</sub> = 0.626      |

**Classification**

|                              |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

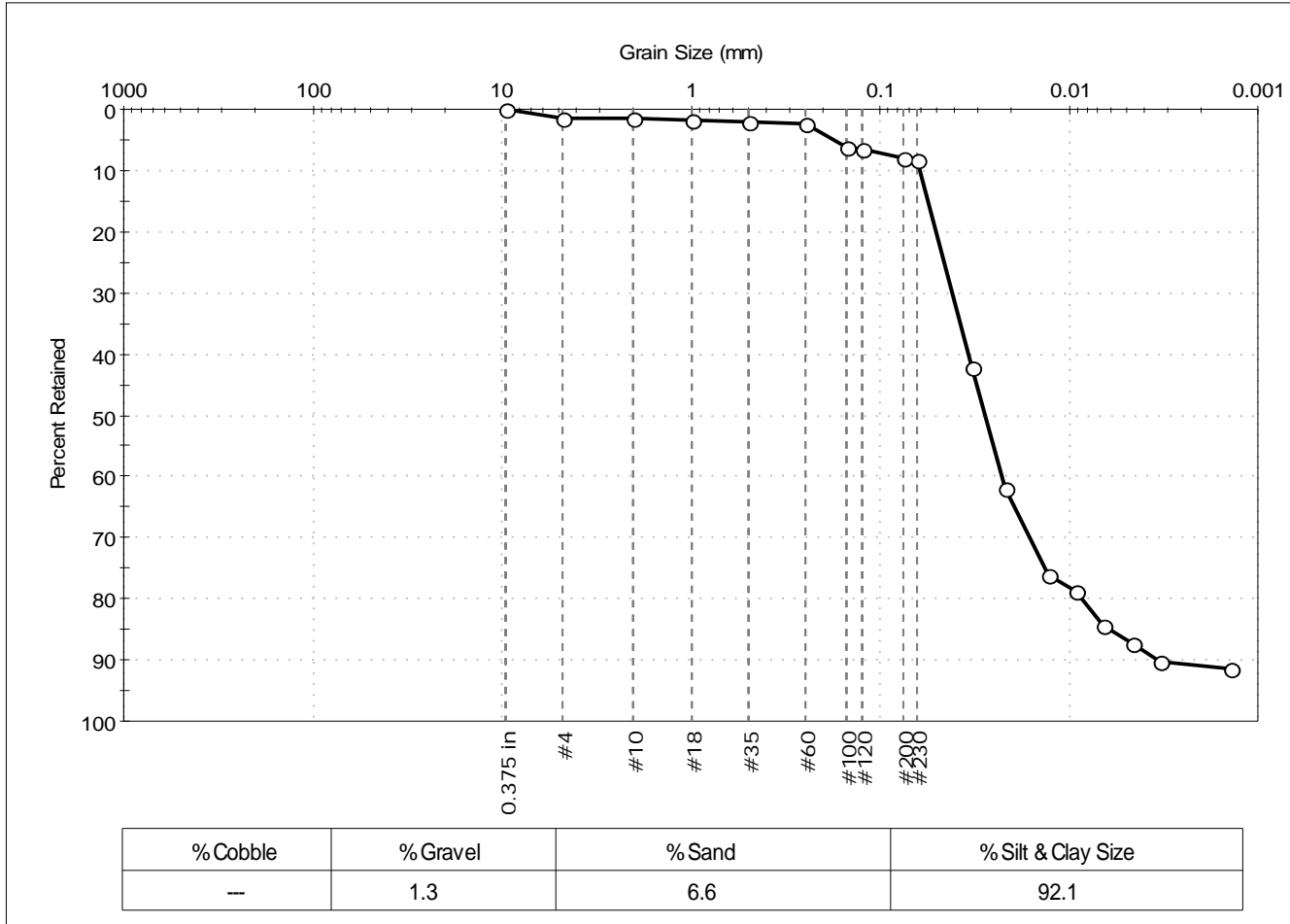
Separation of Sample: #230 Sieve





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute          | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 323-14LTM                         | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0282                        | Test Date: 11/03/14         | Checked By: jdt           |                        |
| Depth: ---                                   | Test Id: 310502             |                           |                        |
| Test Comment: ---                            |                             |                           |                        |
| Sample Description: Wet, very dark gray silt |                             |                           |                        |
| Sample Comment: ---                          |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 2            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 8            |               |          |
| #230       | 0.063              | 8            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 42           |               |          |
| ---        | 0.0218             | 62           |               |          |
| ---        | 0.0129             | 76           |               |          |
| ---        | 0.0092             | 79           |               |          |
| ---        | 0.0066             | 85           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0554 mm | D <sub>30</sub> = 0.0162 mm |
| D <sub>60</sub> = 0.0342 mm | D <sub>15</sub> = 0.0062 mm |
| D <sub>50</sub> = 0.0279 mm | D <sub>10</sub> = 0.0033 mm |
| C <sub>u</sub> = 10.364     | C <sub>c</sub> = 2.325      |

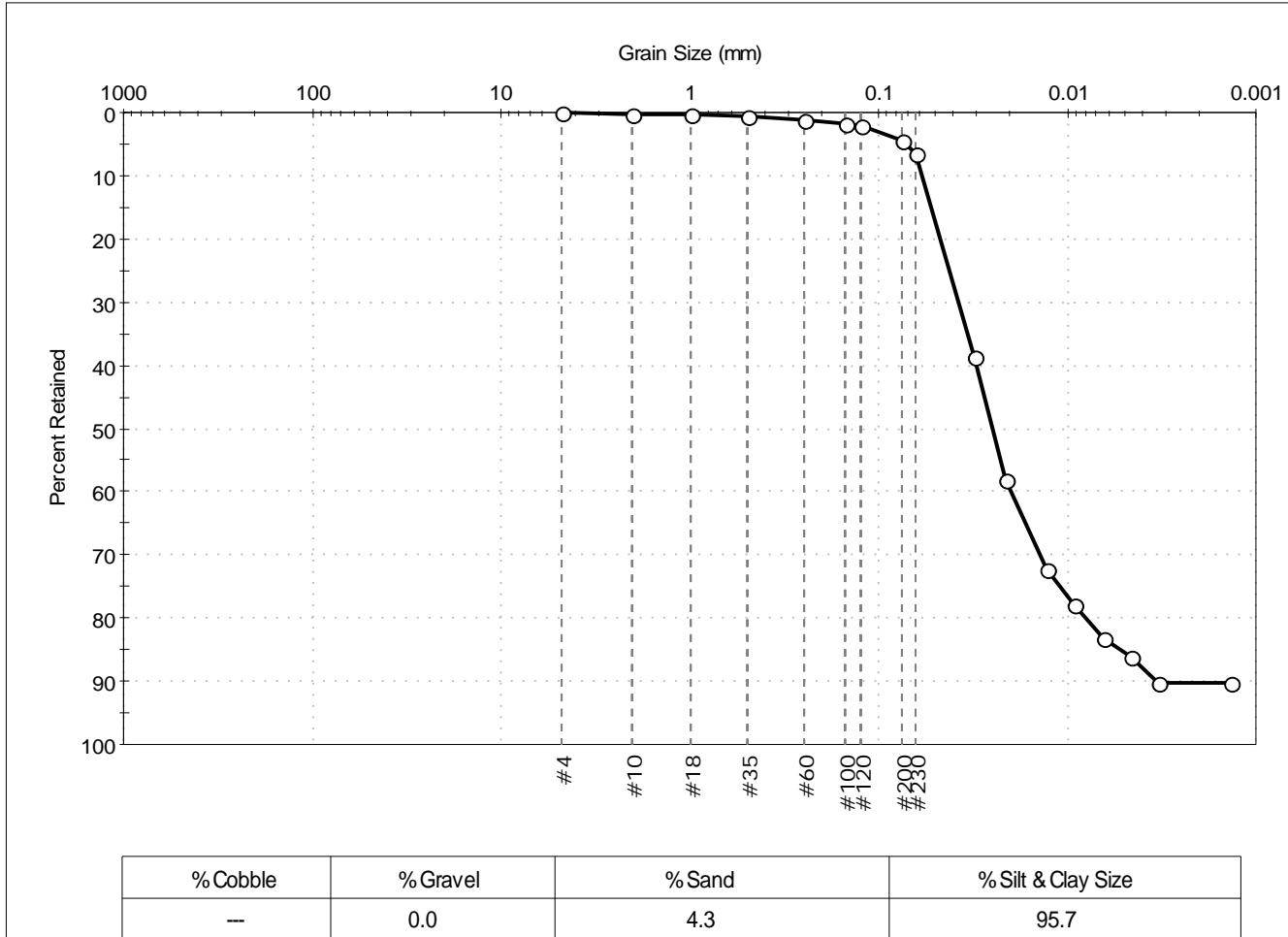
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                   | Project No: GTX-302366 |
| Boring ID: 323-14LTM                | Sample Type: bag            | Tested By: jbr                              | Checked By: jdt        |
| Sample ID: NBH14-0282DUP            | Test Date: 10/24/14         | Test Id: 310503                             |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, vey dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 7            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0313             | 39           |               |          |
| ---        | 0.0213             | 58           |               |          |
| ---        | 0.0128             | 72           |               |          |
| ---        | 0.0091             | 78           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 86           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0524 mm | D <sub>30</sub> = 0.0138 mm |
| D <sub>60</sub> = 0.0305 mm | D <sub>15</sub> = 0.0053 mm |
| D <sub>50</sub> = 0.0251 mm | D <sub>10</sub> = 0.0033 mm |
| C <sub>u</sub> = 9.242      | C <sub>c</sub> = 1.892      |

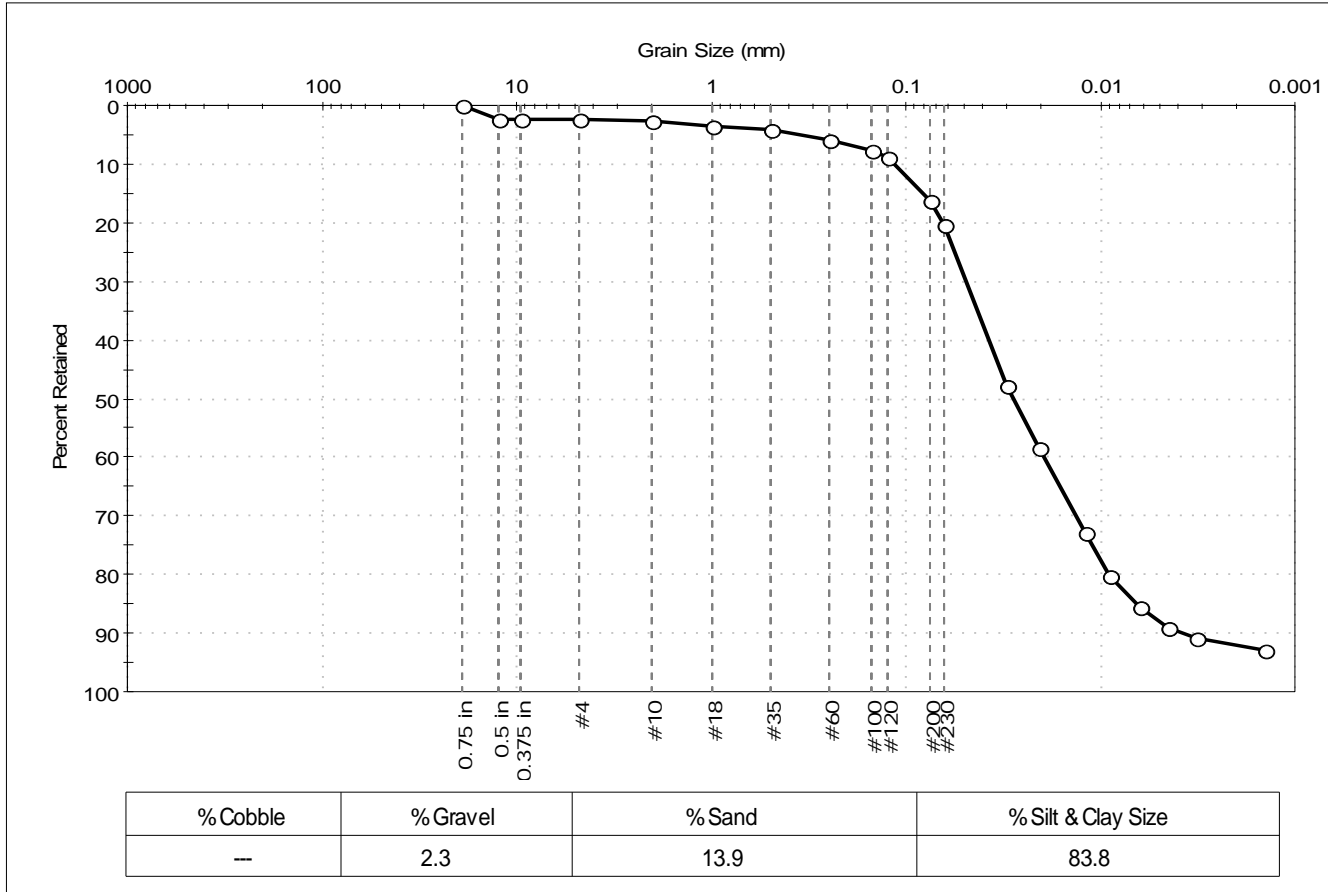
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                     | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 323-14LTM                                    | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0283                                   | Test Date: 11/03/14         | Depth: ---                | Test Id: 310504        |
| Test Comment: ---                                       |                             |                           |                        |
| Sample Description: Wet, dark olive gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                     |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 2            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 9            |               |          |
| #200       | 0.075              | 16           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0300             | 48           |               |          |
| ---        | 0.0205             | 59           |               |          |
| ---        | 0.0121             | 73           |               |          |
| ---        | 0.0090             | 80           |               |          |
| ---        | 0.0063             | 86           |               |          |
| ---        | 0.0045             | 89           |               |          |
| ---        | 0.0032             | 91           |               |          |
| ---        | 0.0014             | 93           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0816 mm | D <sub>30</sub> = 0.0134 mm |
| D <sub>60</sub> = 0.0370 mm | D <sub>15</sub> = 0.0066 mm |
| D <sub>50</sub> = 0.0277 mm | D <sub>10</sub> = 0.0039 mm |
| C <sub>u</sub> = 9.487      | C <sub>c</sub> = 1.244      |

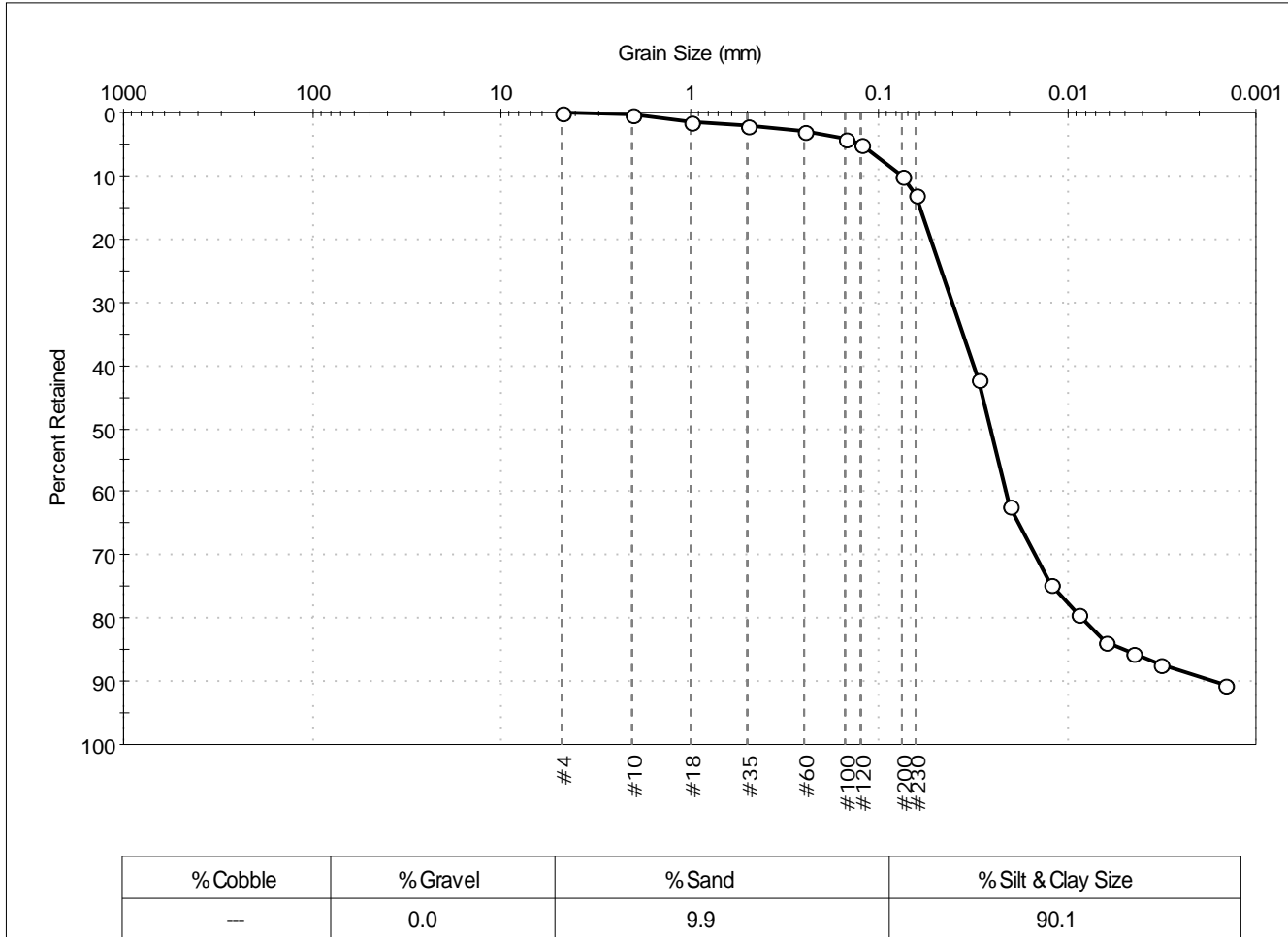
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 323-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0284               | Test Date: 10/30/14         | Test Id: 310505                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 10           |               |          |
| #230       | 0.063              | 13           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0296             | 42           |               |          |
| ---        | 0.0204             | 62           |               |          |
| ---        | 0.0123             | 75           |               |          |
| ---        | 0.0089             | 79           |               |          |
| ---        | 0.0064             | 84           |               |          |
| ---        | 0.0045             | 86           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0015             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0599 mm | D <sub>30</sub> = 0.0149 mm |
| D <sub>60</sub> = 0.0315 mm | D <sub>15</sub> = 0.0050 mm |
| D <sub>50</sub> = 0.0257 mm | D <sub>10</sub> = 0.0017 mm |
| C <sub>u</sub> = 18.529     | C <sub>c</sub> = 4.146      |

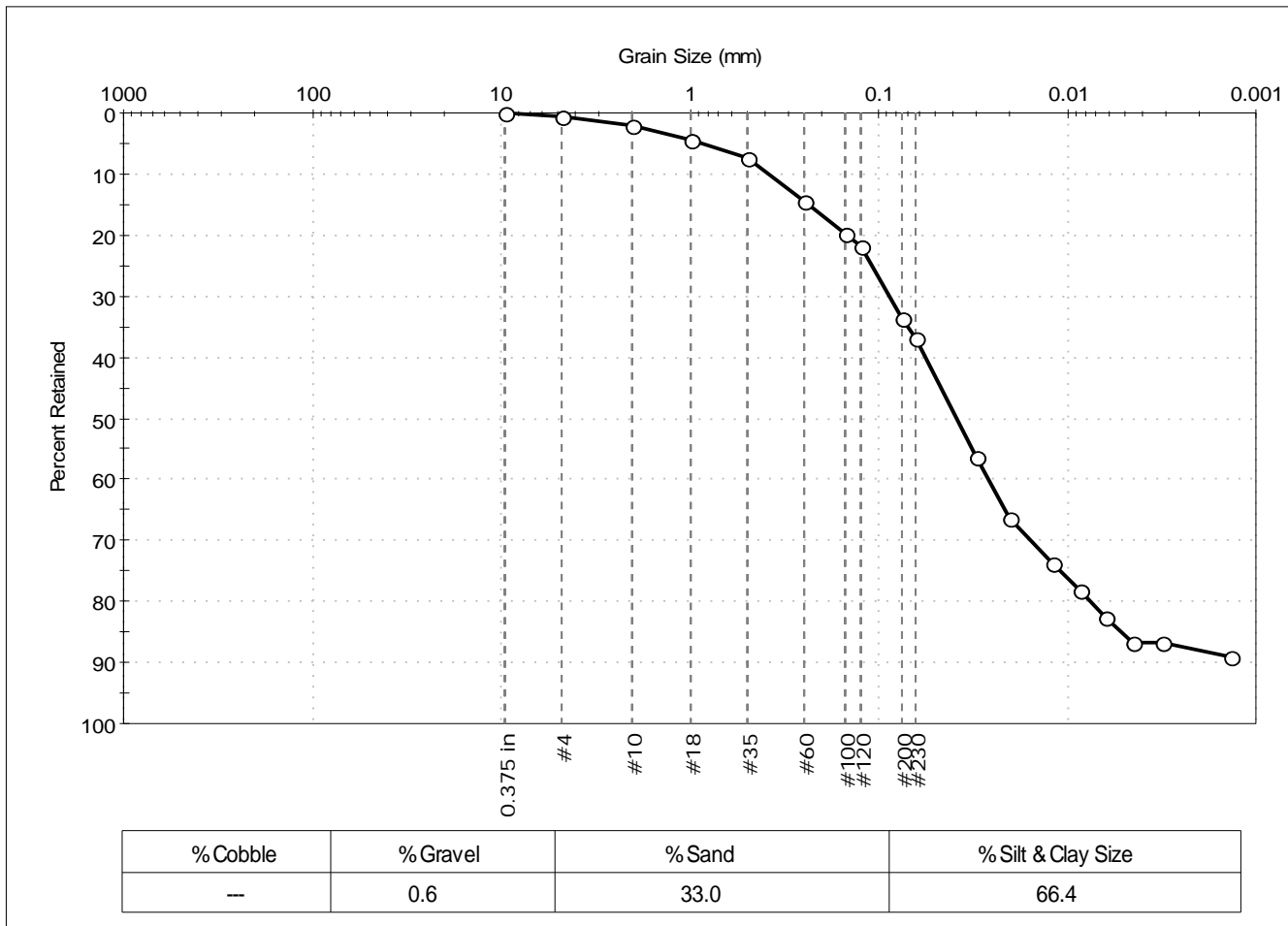
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 324-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0285                               | Test Date: 10/30/14    |
| Depth: ---  | Test Id: 310506        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Wet, dark olive gray sandy silt | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 4            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 34           |               |          |
| #230       | 0.063              | 37           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0303             | 56           |               |          |
| ---        | 0.0201             | 66           |               |          |
| ---        | 0.0120             | 74           |               |          |
| ---        | 0.0087             | 78           |               |          |
| ---        | 0.0062             | 82           |               |          |
| ---        | 0.0045             | 87           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2363 mm | D <sub>30</sub> = 0.0157 mm |
| D <sub>60</sub> = 0.0557 mm | D <sub>15</sub> = 0.0052 mm |
| D <sub>50</sub> = 0.0383 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

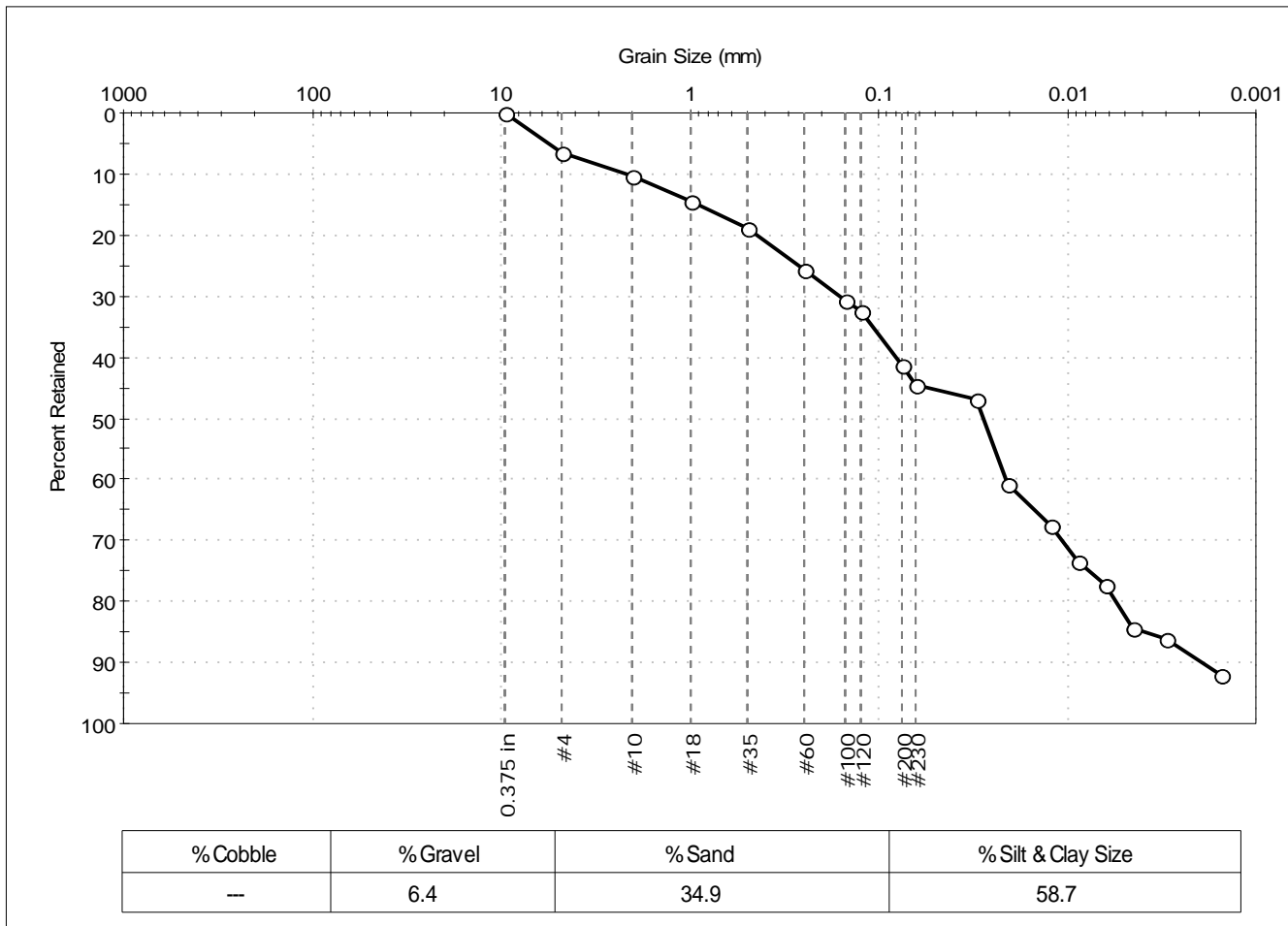
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute             | Project No: GTX-302366 |
| Project: New Bedford Harbor                     |                        |
| Location: New Bedford, MA                       |                        |
| Boring ID: 324-14LTM                            | Sample Type: bag       |
| Sample ID: NBH14-0286                           | Test Date: 11/04/14    |
| Depth: ---                                      | Test Id: 310507        |
| Test Comment: ---                               | Tested By: jbr         |
| Sample Description: Wet, olive brown sandy silt | Checked By: jdt        |
| Sample Comment: ---                             |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 10           |               |          |
| #18        | 1.00               | 15           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 26           |               |          |
| #100       | 0.15               | 31           |               |          |
| #120       | 0.12               | 32           |               |          |
| #200       | 0.075              | 41           |               |          |
| #230       | 0.063              | 44           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0300             | 47           |               |          |
| ---        | 0.0208             | 61           |               |          |
| ---        | 0.0123             | 68           |               |          |
| ---        | 0.0088             | 73           |               |          |
| ---        | 0.0063             | 77           |               |          |
| ---        | 0.0045             | 84           |               |          |
| ---        | 0.0030             | 86           |               |          |
| ---        | 0.0015             | 92           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.9287 mm | D <sub>30</sub> = 0.0107 mm |
| D <sub>60</sub> = 0.0811 mm | D <sub>15</sub> = 0.0039 mm |
| D <sub>50</sub> = 0.0276 mm | D <sub>10</sub> = 0.0020 mm |
| C <sub>u</sub> = 40.550     | C <sub>c</sub> = 0.706      |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

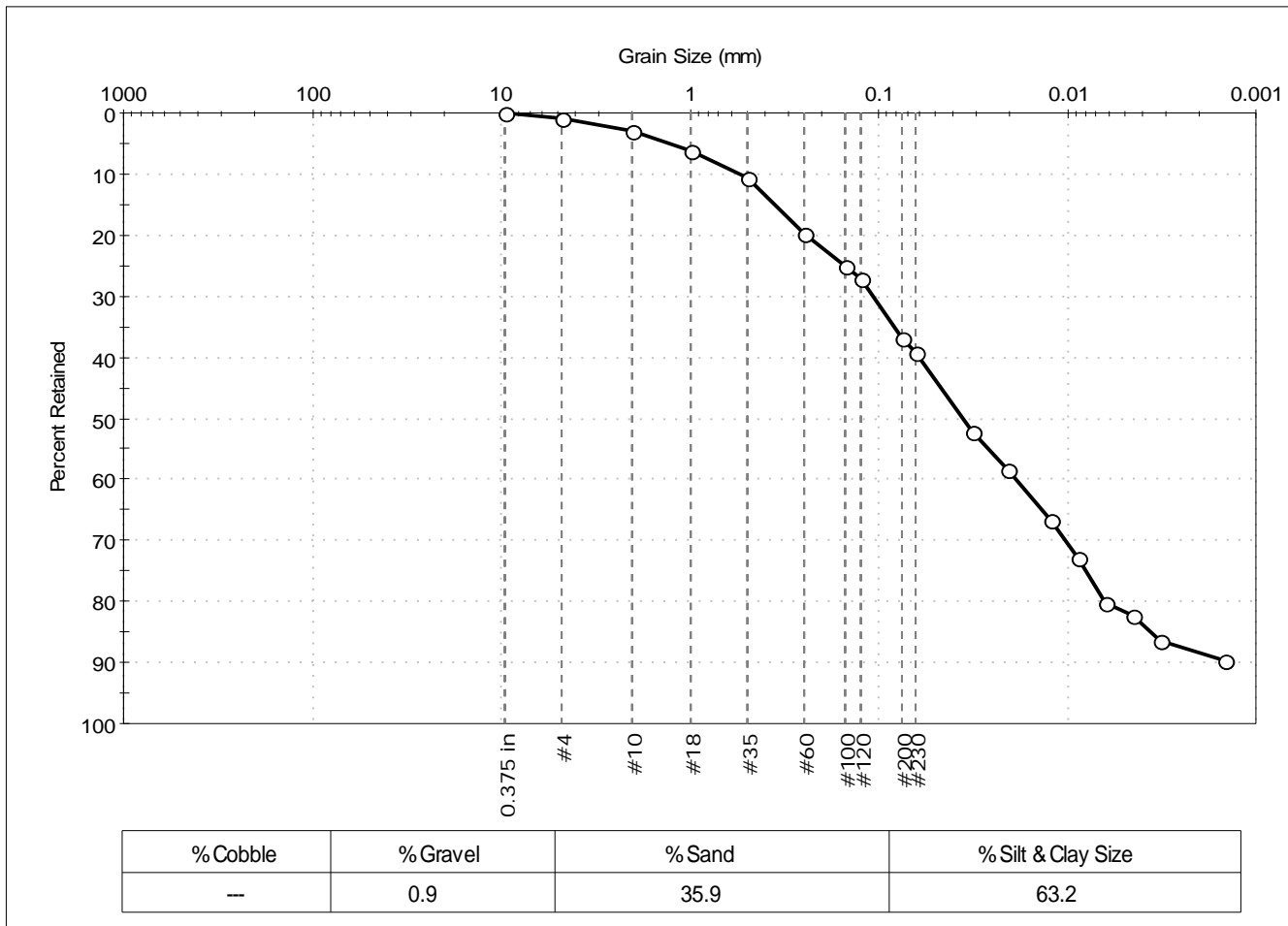
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 324-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0287  
 Test Date: 10/30/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310508  
 Test Comment: ---  
 Sample Description: Wet, olive brown sandy silt  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 20           |               |          |
| #100       | 0.15               | 25           |               |          |
| #120       | 0.12               | 27           |               |          |
| #200       | 0.075              | 37           |               |          |
| #230       | 0.063              | 39           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 52           |               |          |
| ---        | 0.0206             | 58           |               |          |
| ---        | 0.0121             | 67           |               |          |
| ---        | 0.0088             | 73           |               |          |
| ---        | 0.0063             | 80           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 86           |               |          |
| ---        | 0.0015             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3576 mm | D <sub>30</sub> = 0.0102 mm |
| D <sub>60</sub> = 0.0608 mm | D <sub>15</sub> = 0.0036 mm |
| D <sub>50</sub> = 0.0357 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

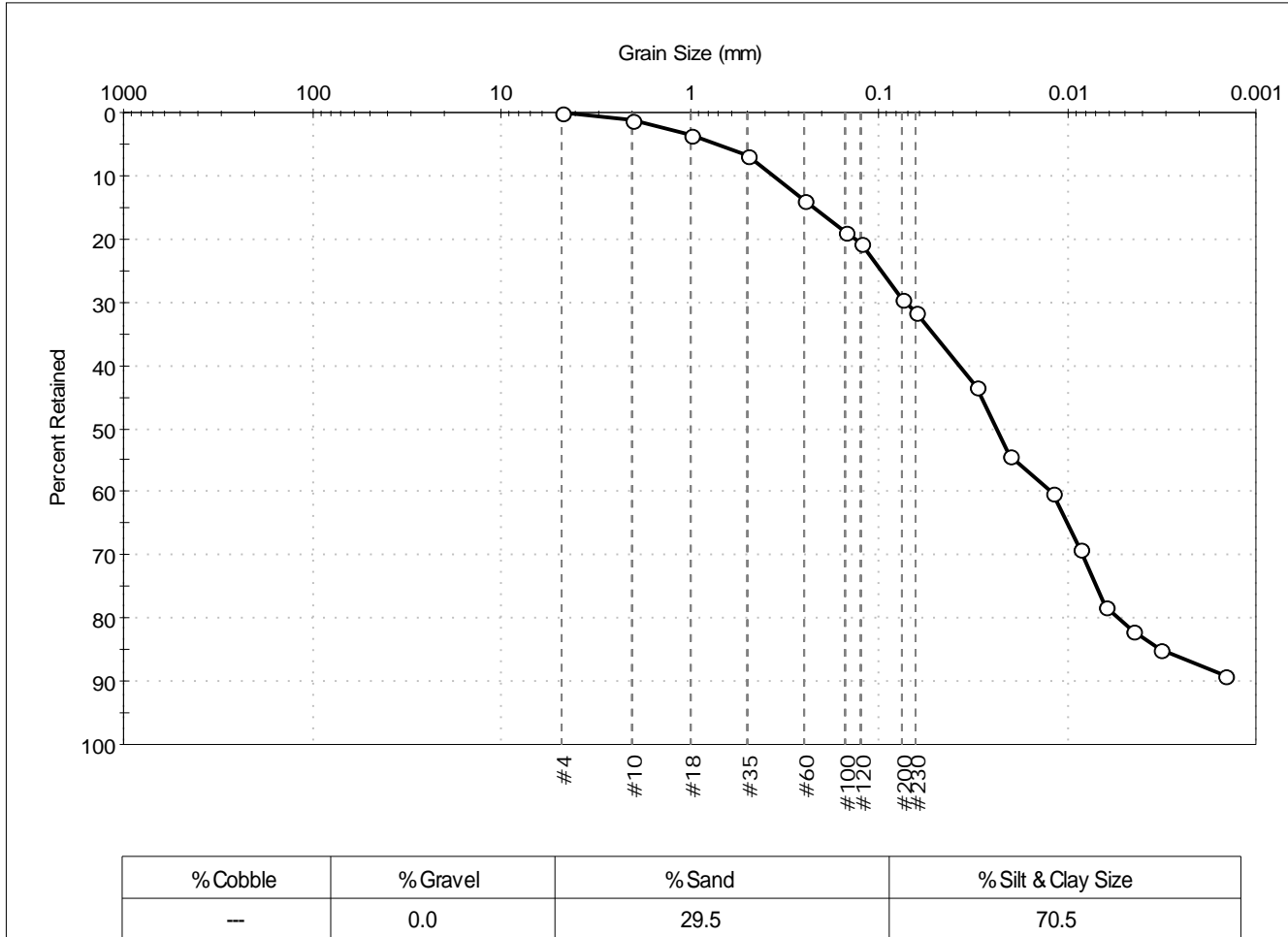
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                           | Project No: GTX-302366 |
| Boring ID: 324-14LTM                | Sample Type: bag            | Tested By: jbr                                      | Checked By: jdt        |
| Sample ID: NBH14-0288               | Test Date: 10/30/14         | Test Id: 310509                                     |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive brown silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 7            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 19           |               |          |
| #120       | 0.12               | 21           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 32           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0306             | 43           |               |          |
| ---        | 0.0201             | 54           |               |          |
| ---        | 0.0119             | 60           |               |          |
| ---        | 0.0086             | 69           |               |          |
| ---        | 0.0063             | 78           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0015             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2213 mm | D <sub>30</sub> = 0.0084 mm |
| D <sub>60</sub> = 0.0375 mm | D <sub>15</sub> = 0.0032 mm |
| D <sub>50</sub> = 0.0236 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

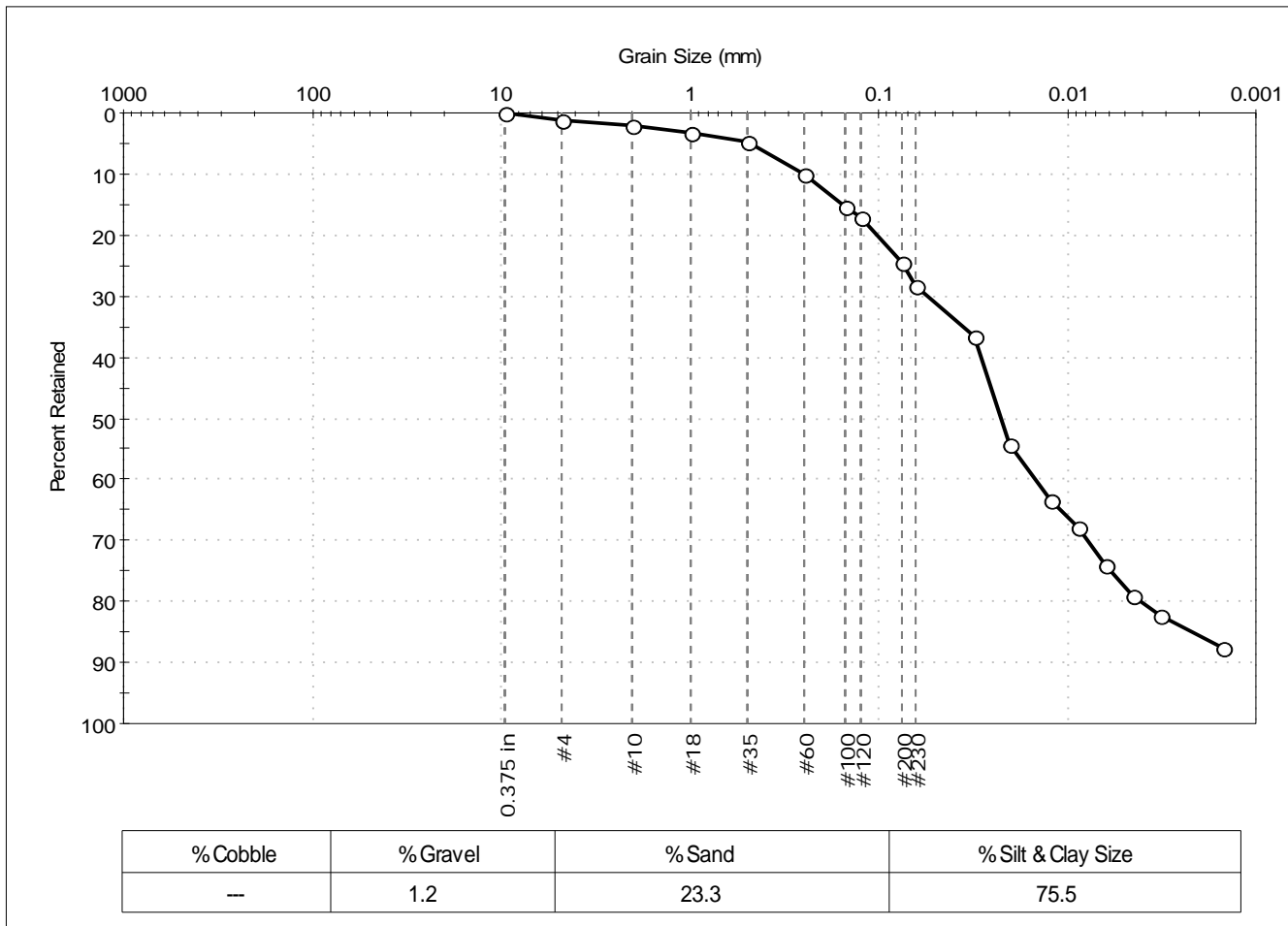
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 325-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0289                      | Test Date:   | 11/04/14   |
| Depth:              | ---                             | Test Id:     | 310510     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Wet, olive brown silt with sand |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 10           |               |          |
| #100       | 0.15               | 15           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 25           |               |          |
| #230       | 0.063              | 28           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0309             | 36           |               |          |
| ---        | 0.0200             | 54           |               |          |
| ---        | 0.0122             | 64           |               |          |
| ---        | 0.0087             | 68           |               |          |
| ---        | 0.0062             | 74           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0015             | 87           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1542 mm | D <sub>30</sub> = 0.0077 mm |
| D <sub>60</sub> = 0.0283 mm | D <sub>15</sub> = 0.0022 mm |
| D <sub>50</sub> = 0.0221 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

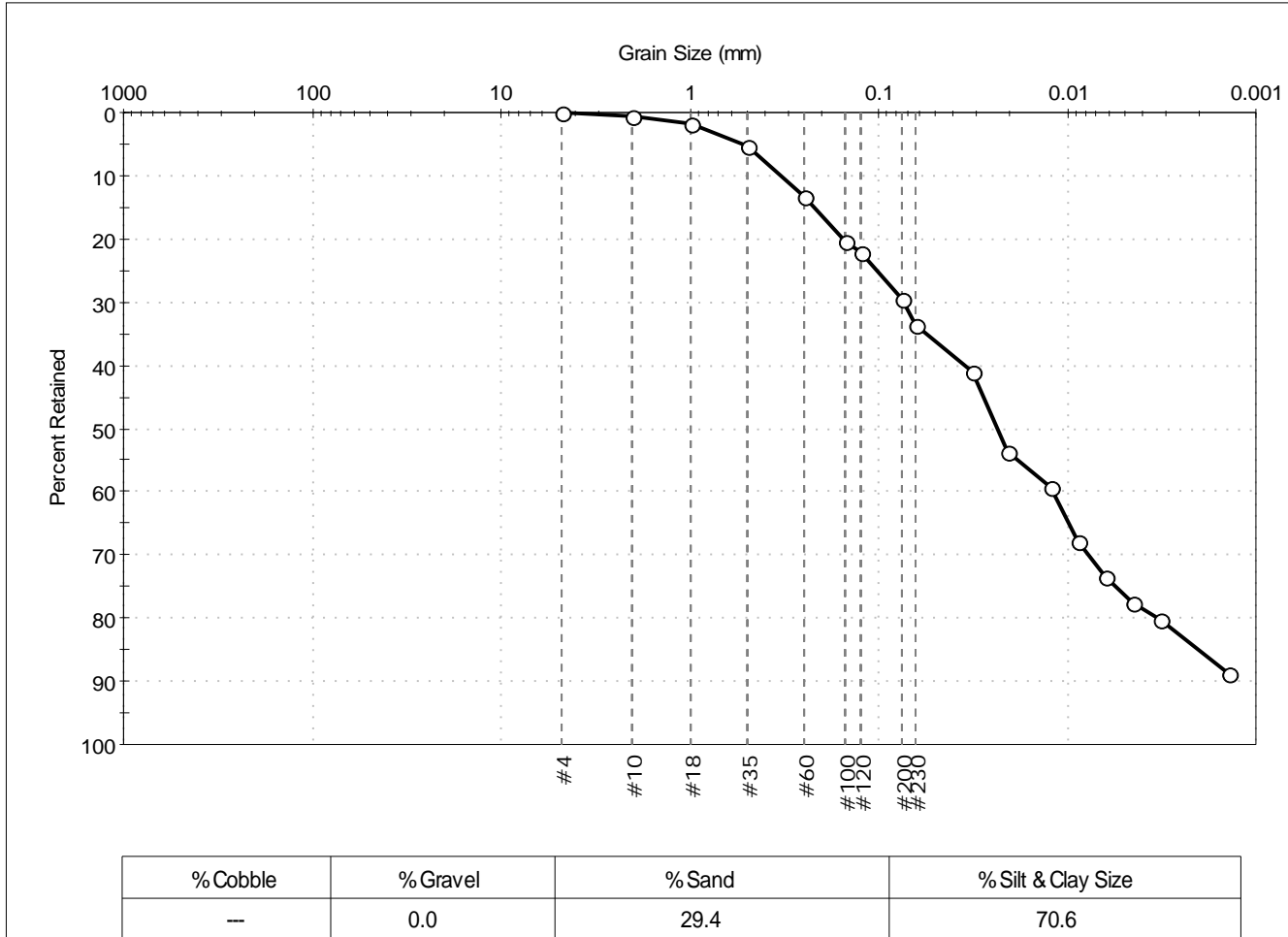
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |   |              |            |
|---------------------|---|--------------|------------|
| Client:             | Battelle Memorial Institute               |              |            |
| Project:            | New Bedford Harbor                        |              |            |
| Location:           | New Bedford, MA                           | Project No:  | GTX-302366 |
| Boring ID:          | 325-14LTM                                 | Sample Type: | bag        |
| Sample ID:          | NBH14-0290                                | Test Date:   | 11/14/14   |
| Depth:              | ---                                       | Test Id:     | 310511     |
| Test Comment:       | ---                                       |              |            |
| Sample Description: | Moist, dark olive gray silt with organics |              |            |
| Sample Comment:     | ---                                       |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 13           |               |          |
| #100       | 0.15               | 20           |               |          |
| #120       | 0.12               | 22           |               |          |
| #200       | 0.075              | 29           |               |          |
| #230       | 0.063              | 34           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0321             | 41           |               |          |
| ---        | 0.0207             | 54           |               |          |
| ---        | 0.0123             | 59           |               |          |
| ---        | 0.0089             | 68           |               |          |
| ---        | 0.0063             | 73           |               |          |
| ---        | 0.0045             | 78           |               |          |
| ---        | 0.0032             | 80           |               |          |
| ---        | 0.0014             | 89           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2207 mm | D <sub>30</sub> = 0.0077 mm |
| D <sub>60</sub> = 0.0355 mm | D <sub>15</sub> = 0.0020 mm |
| D <sub>50</sub> = 0.0235 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

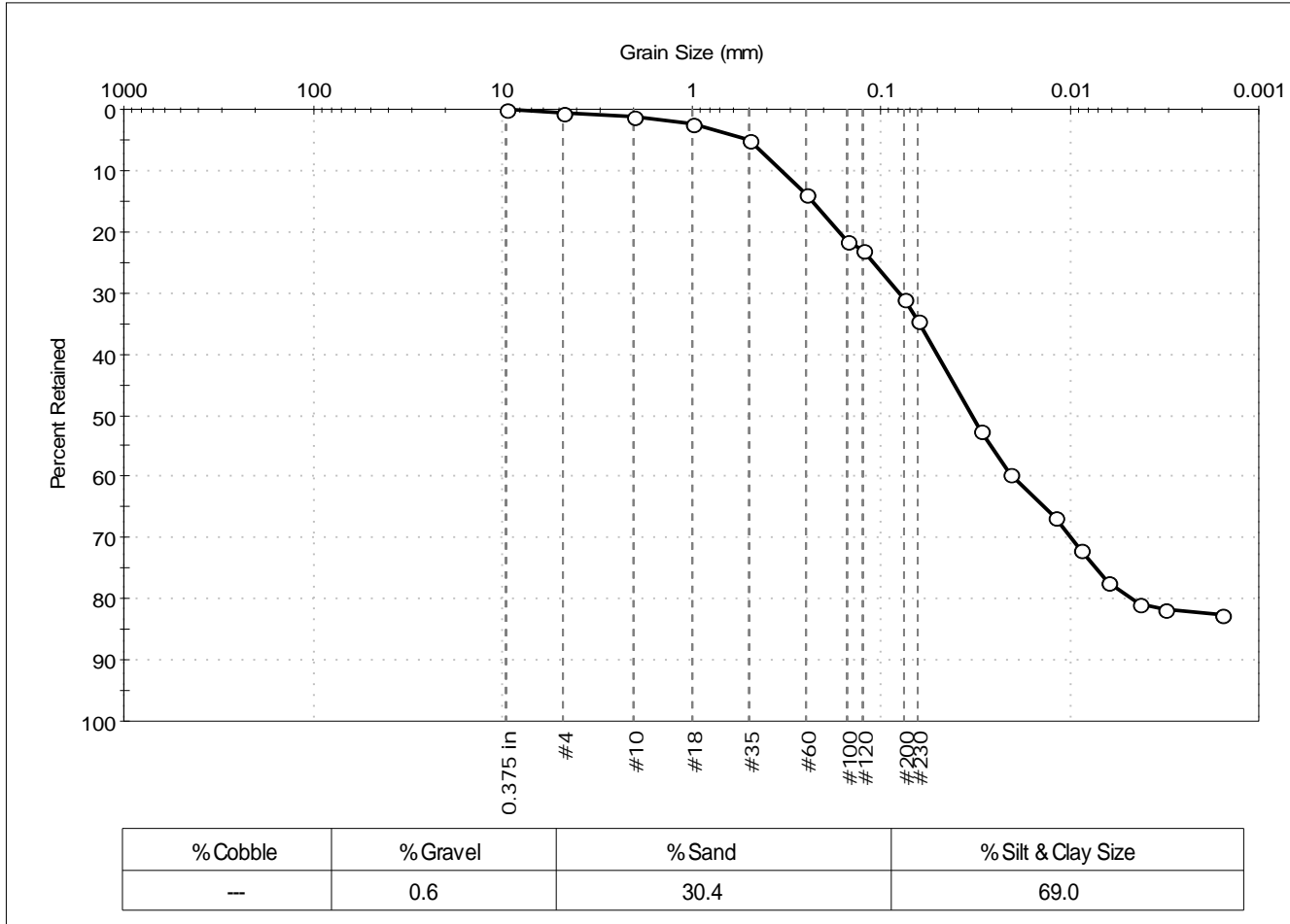
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 325-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0291                  | Test Date:   | 11/03/14   |
| Depth:              | ---                         | Test Id:     | 310512     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, olive brown sandy silt |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 21           |               |          |
| #120       | 0.12               | 23           |               |          |
| #200       | 0.075              | 31           |               |          |
| #230       | 0.063              | 35           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0299             | 53           |               |          |
| ---        | 0.0205             | 60           |               |          |
| ---        | 0.0121             | 67           |               |          |
| ---        | 0.0087             | 72           |               |          |
| ---        | 0.0063             | 77           |               |          |
| ---        | 0.0043             | 81           |               |          |
| ---        | 0.0032             | 82           |               |          |
| ---        | 0.0016             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2319 mm | D <sub>30</sub> = 0.0098 mm |
| D <sub>60</sub> = 0.0504 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0334 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

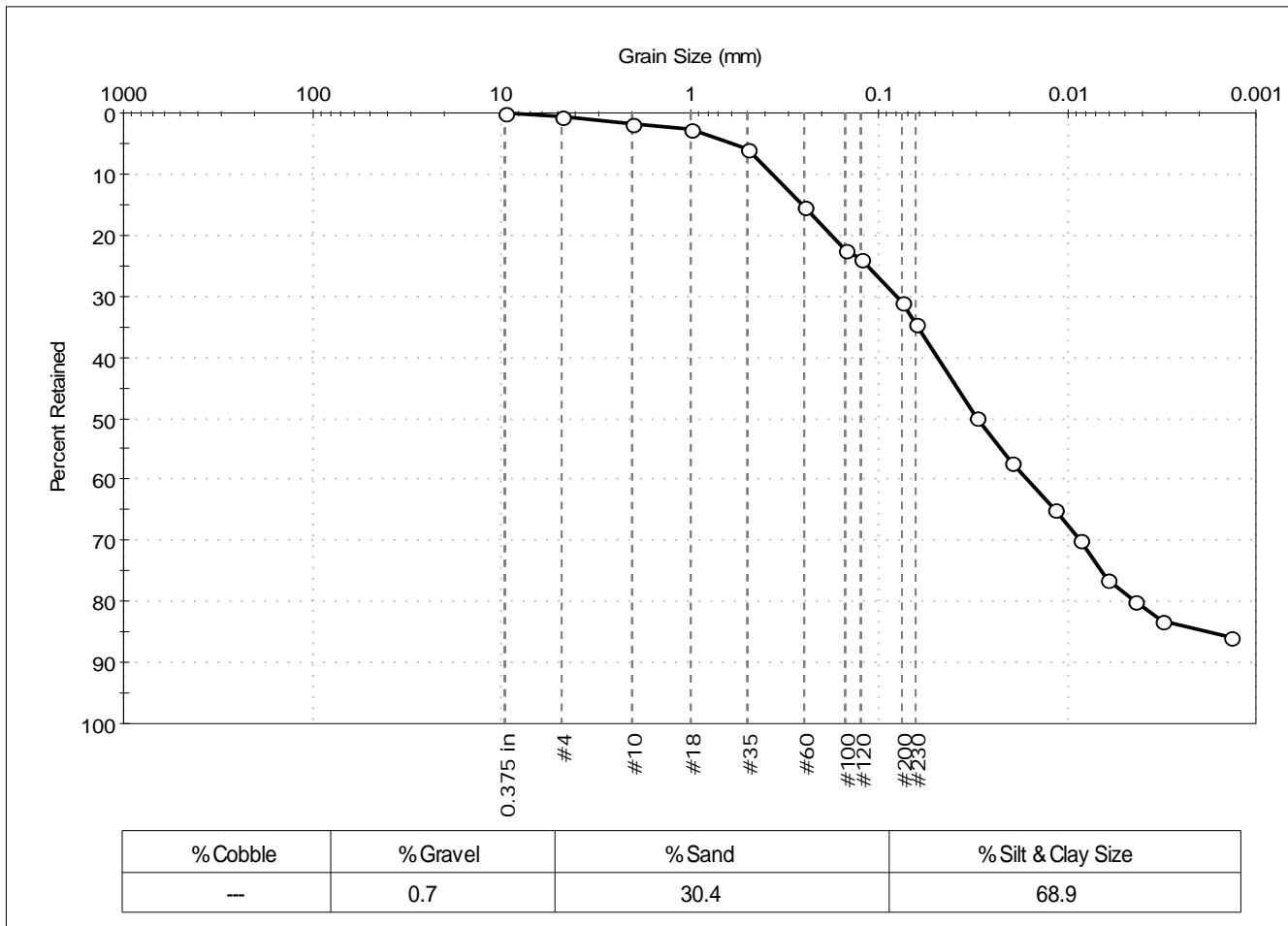
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute             | Project No: GTX-302366 |
| Project: New Bedford Harbor                     |                        |
| Location: New Bedford, MA                       |                        |
| Boring ID: 325-14LTM                            | Sample Type: bag       |
| Sample ID: NBH14-0292                           | Test Date: 10/30/14    |
| Depth: ---                                      | Test Id: 310513        |
| Test Comment: ---                               | Tested By: jbr         |
| Sample Description: Wet, olive brown sandy silt | Checked By: jdt        |
| Sample Comment: ---                             |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 6            |               |          |
| #60        | 0.25               | 15           |               |          |
| #100       | 0.15               | 22           |               |          |
| #120       | 0.12               | 24           |               |          |
| #200       | 0.075              | 31           |               |          |
| #230       | 0.063              | 34           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0301             | 50           |               |          |
| ---        | 0.0198             | 57           |               |          |
| ---        | 0.0118             | 65           |               |          |
| ---        | 0.0085             | 70           |               |          |
| ---        | 0.0062             | 77           |               |          |
| ---        | 0.0044             | 80           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2547 mm | D <sub>30</sub> = 0.0084 mm |
| D <sub>60</sub> = 0.0482 mm | D <sub>15</sub> = 0.0018 mm |
| D <sub>50</sub> = 0.0296 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

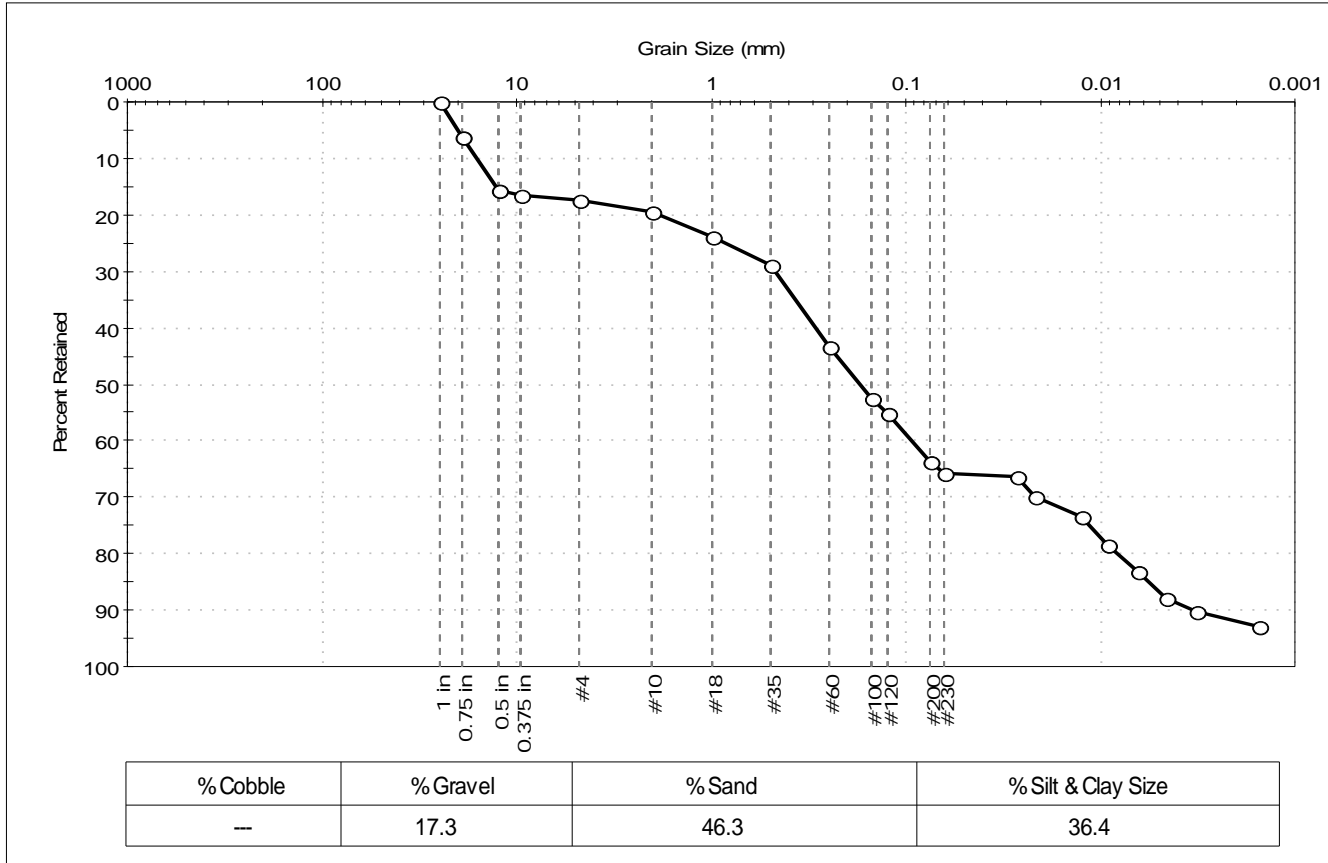
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                             | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 225-14LTM  | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0302   | Test Date: 11/03/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310514             |                           |                        |
| Test Comment: ---   |                             |                           |                        |
| Sample Description: Wet, dark olive gray silty sand with gravel |                             |                           |                        |
| Sample Comment: ---   |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 6            |               |          |
| 0.5 in     | 12.50              | 16           |               |          |
| 0.375 in   | 9.50               | 17           |               |          |
| #4         | 4.75               | 17           |               |          |
| #10        | 2.00               | 20           |               |          |
| #18        | 1.00               | 24           |               |          |
| #35        | 0.50               | 29           |               |          |
| #60        | 0.25               | 43           |               |          |
| #100       | 0.15               | 53           |               |          |
| #120       | 0.12               | 55           |               |          |
| #200       | 0.075              | 64           |               |          |
| #230       | 0.063              | 66           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0267             | 66           |               |          |
| ---        | 0.0219             | 70           |               |          |
| ---        | 0.0124             | 74           |               |          |
| ---        | 0.0091             | 78           |               |          |
| ---        | 0.0065             | 83           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0032             | 90           |               |          |
| ---        | 0.0016             | 93           |               |          |

| <u>Coefficients</u>          |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 12.8844 mm | D <sub>30</sub> = 0.0218 mm |
| D <sub>60</sub> = 0.2950 mm  | D <sub>15</sub> = 0.0057 mm |
| D <sub>50</sub> = 0.1736 mm  | D <sub>10</sub> = 0.0034 mm |
| C <sub>u</sub> = 86.765      | C <sub>c</sub> = 0.474      |

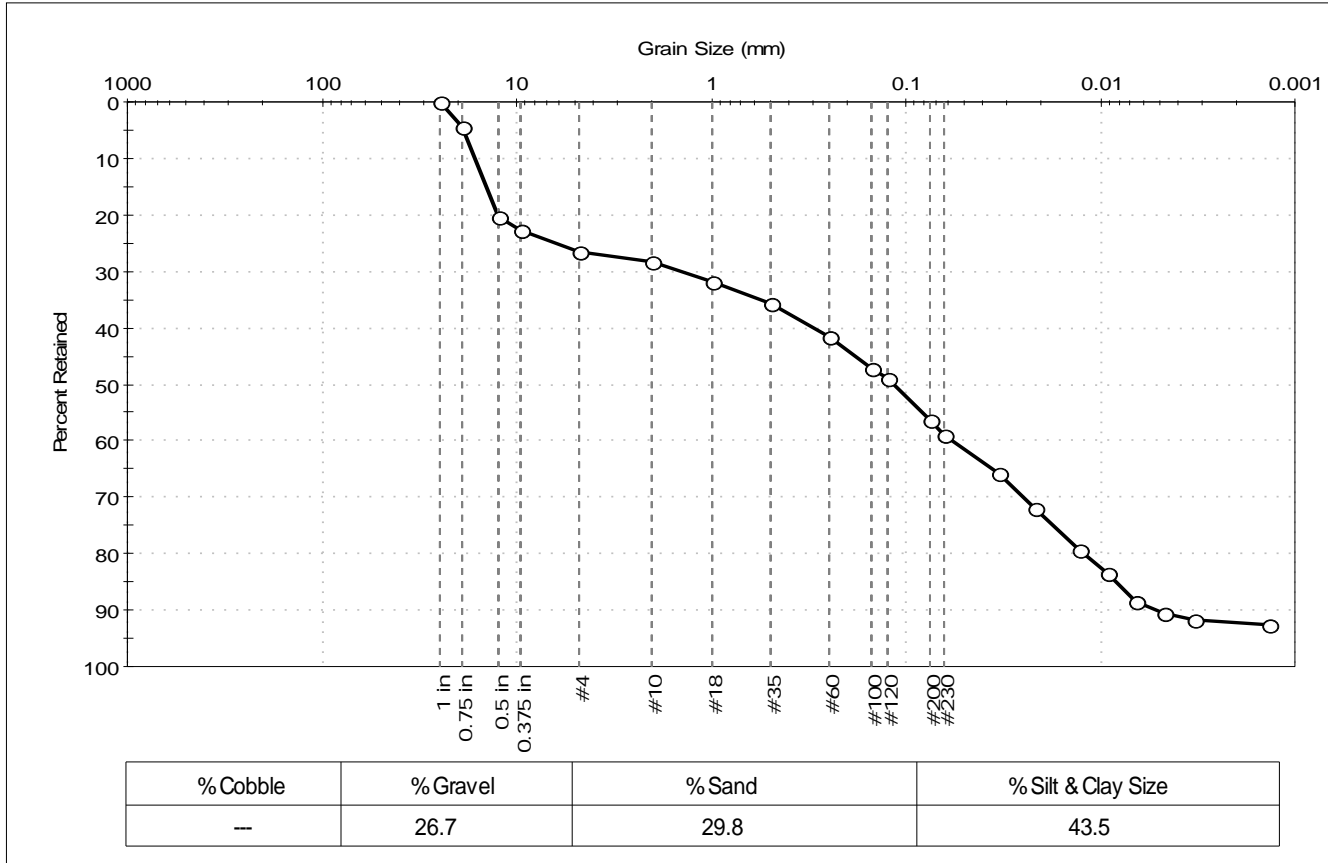
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ANGULAR         |
| Sand/Gravel Hardness : HARD                  |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |  |              |            |
|---------------------|--|--------------|------------|
| Client:             | Battelle Memorial Institute            |              |            |
| Project:            | New Bedford Harbor                     |              |            |
| Location:           | New Bedford, MA                        | Project No:  | GTX-302366 |
| Boring ID:          | 225-14LTM                              | Sample Type: | bag        |
| Sample ID:          | NBH14-0303                             | Test Date:   | 10/29/14   |
| Depth:              | ---                                    | Test Id:     | 310515     |
| Test Comment:       | ---                                    |              |            |
| Sample Description: | Wet olive brown sandy silt with gravel |              |            |
| Sample Comment:     | Sample contains shells                 |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 4            |               |          |
| 0.5 in     | 12.50              | 20           |               |          |
| 0.375 in   | 9.50               | 23           |               |          |
| #4         | 4.75               | 27           |               |          |
| #10        | 2.00               | 28           |               |          |
| #18        | 1.00               | 32           |               |          |
| #35        | 0.50               | 36           |               |          |
| #60        | 0.25               | 42           |               |          |
| #100       | 0.15               | 47           |               |          |
| #120       | 0.12               | 49           |               |          |
| #200       | 0.075              | 56           |               |          |
| #230       | 0.063              | 59           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0337             | 66           |               |          |
| ---        | 0.0216             | 72           |               |          |
| ---        | 0.0128             | 79           |               |          |
| ---        | 0.0092             | 83           |               |          |
| ---        | 0.0066             | 89           |               |          |
| ---        | 0.0047             | 91           |               |          |
| ---        | 0.0033             | 92           |               |          |
| ---        | 0.0014             | 93           |               |          |

**Coefficients**

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 14.3872 mm | D <sub>30</sub> = 0.0250 mm |
| D <sub>60</sub> = 0.3010 mm  | D <sub>15</sub> = 0.0083 mm |
| D <sub>50</sub> = 0.1167 mm  | D <sub>10</sub> = 0.0052 mm |
| C <sub>u</sub> = 57.885      | C <sub>c</sub> = 0.399      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

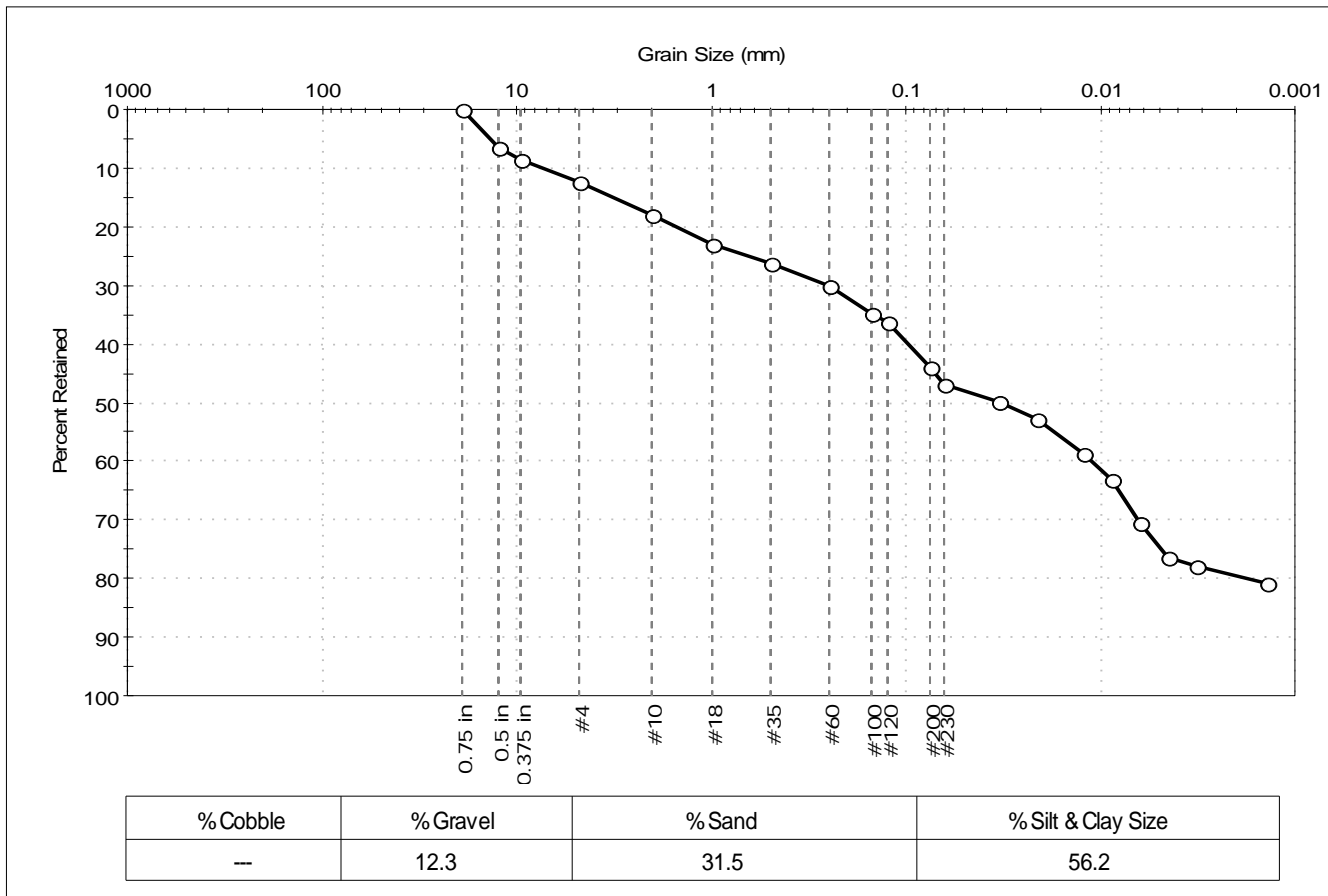
Specific Gravity : 2.65

Separation of Sample: #230 Sieve



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 225-14LTM                                | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0304                               | Test Date: 10/30/14         | Test Id: 310516           |                        |
| Depth: ---  |                             |                           |                        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 7            |               |          |
| 0.375 in   | 9.50               | 8            |               |          |
| #4         | 4.75               | 12           |               |          |
| #10        | 2.00               | 18           |               |          |
| #18        | 1.00               | 23           |               |          |
| #35        | 0.50               | 26           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 35           |               |          |
| #120       | 0.12               | 36           |               |          |
| #200       | 0.075              | 44           |               |          |
| #230       | 0.063              | 47           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0334             | 50           |               |          |
| ---        | 0.0211             | 53           |               |          |
| ---        | 0.0123             | 59           |               |          |
| ---        | 0.0088             | 63           |               |          |
| ---        | 0.0063             | 70           |               |          |
| ---        | 0.0045             | 76           |               |          |
| ---        | 0.0032             | 78           |               |          |
| ---        | 0.0014             | 81           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 3.1373 mm | D <sub>30</sub> = 0.0064 mm |
| D <sub>60</sub> = 0.0973 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0321 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

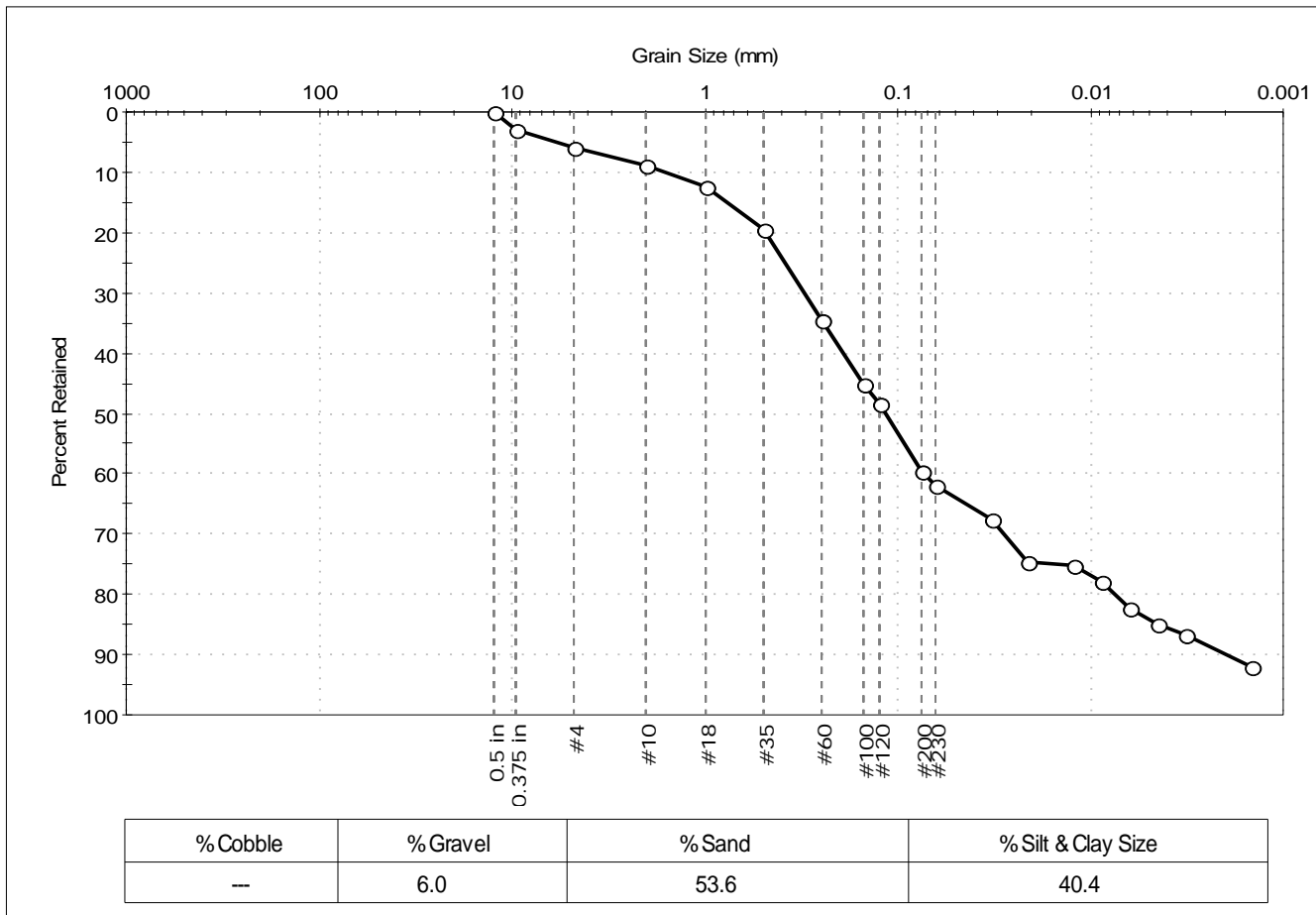
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 225-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0305  
 Test Date: 10/30/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310517  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.5 in     | 12.50              | 0            |               |          |
| 0.375 in   | 9.50               | 3            |               |          |
| #4         | 4.75               | 6            |               |          |
| #10        | 2.00               | 9            |               |          |
| #18        | 1.00               | 12           |               |          |
| #35        | 0.50               | 19           |               |          |
| #60        | 0.25               | 35           |               |          |
| #100       | 0.15               | 45           |               |          |
| #120       | 0.12               | 48           |               |          |
| #200       | 0.075              | 60           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 67           |               |          |
| ---        | 0.0213             | 74           |               |          |
| ---        | 0.0124             | 75           |               |          |
| ---        | 0.0088             | 78           |               |          |
| ---        | 0.0063             | 82           |               |          |
| ---        | 0.0045             | 85           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0015             | 92           |               |          |

**Coefficients**

|                      |                      |
|----------------------|----------------------|
| $D_{85} = 0.7744$ mm | $D_{30} = 0.0281$ mm |
| $D_{60} = 0.1920$ mm | $D_{15} = 0.0045$ mm |
| $D_{50} = 0.1163$ mm | $D_{10} = 0.0020$ mm |
| $C_u = 96.000$       | $C_c = 2.056$        |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

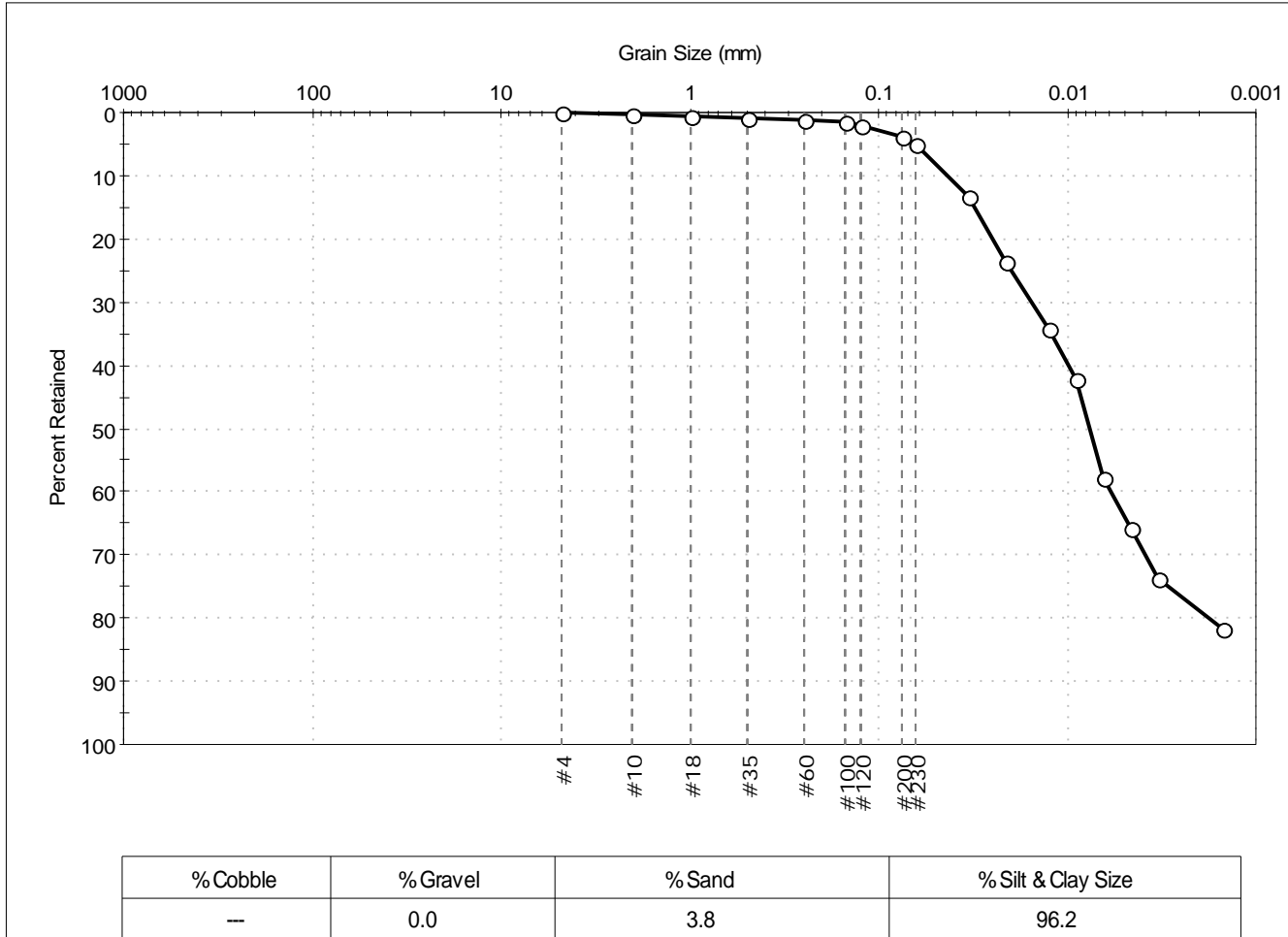
**Sample/Test Description**

Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                 | Project No: GTX-302366 |
| Boring ID: 226-14LTM                | Sample Type: bag            | Tested By: jbr                            | Checked By: jdt        |
| Sample ID: NBH14-0306               | Test Date: 10/30/14         | Test Id: 310518                           |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, olive brown silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 1            |               |          |
| #100       | 0.15               | 2            |               |          |
| #120       | 0.12               | 2            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 13           |               |          |
| ---        | 0.0213             | 24           |               |          |
| ---        | 0.0125             | 34           |               |          |
| ---        | 0.0089             | 42           |               |          |
| ---        | 0.0064             | 58           |               |          |
| ---        | 0.0046             | 66           |               |          |
| ---        | 0.0033             | 74           |               |          |
| ---        | 0.0015             | 82           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0308 mm | D <sub>30</sub> = 0.0038 mm |
| D <sub>60</sub> = 0.0097 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0075 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

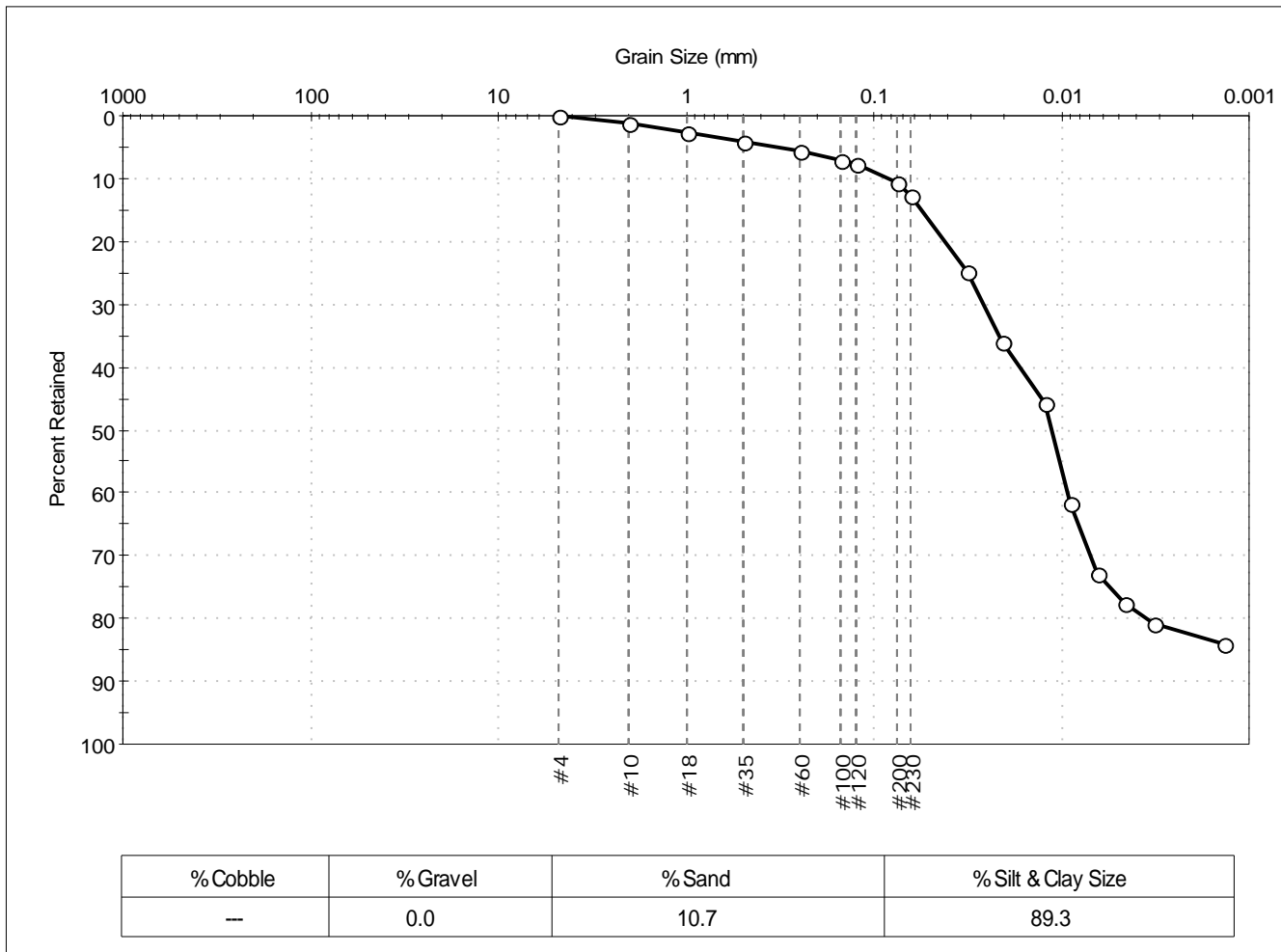
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 226-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0307               | Test Date: 10/29/14         | Test Id: 310519                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 7            |               |          |
| #120       | 0.12               | 8            |               |          |
| #200       | 0.075              | 11           |               |          |
| #230       | 0.063              | 13           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 25           |               |          |
| ---        | 0.0208             | 36           |               |          |
| ---        | 0.0123             | 46           |               |          |
| ---        | 0.0089             | 62           |               |          |
| ---        | 0.0064             | 73           |               |          |
| ---        | 0.0046             | 78           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0014             | 84           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0553 mm | D <sub>30</sub> = 0.0070 mm |
| D <sub>60</sub> = 0.0167 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0112 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

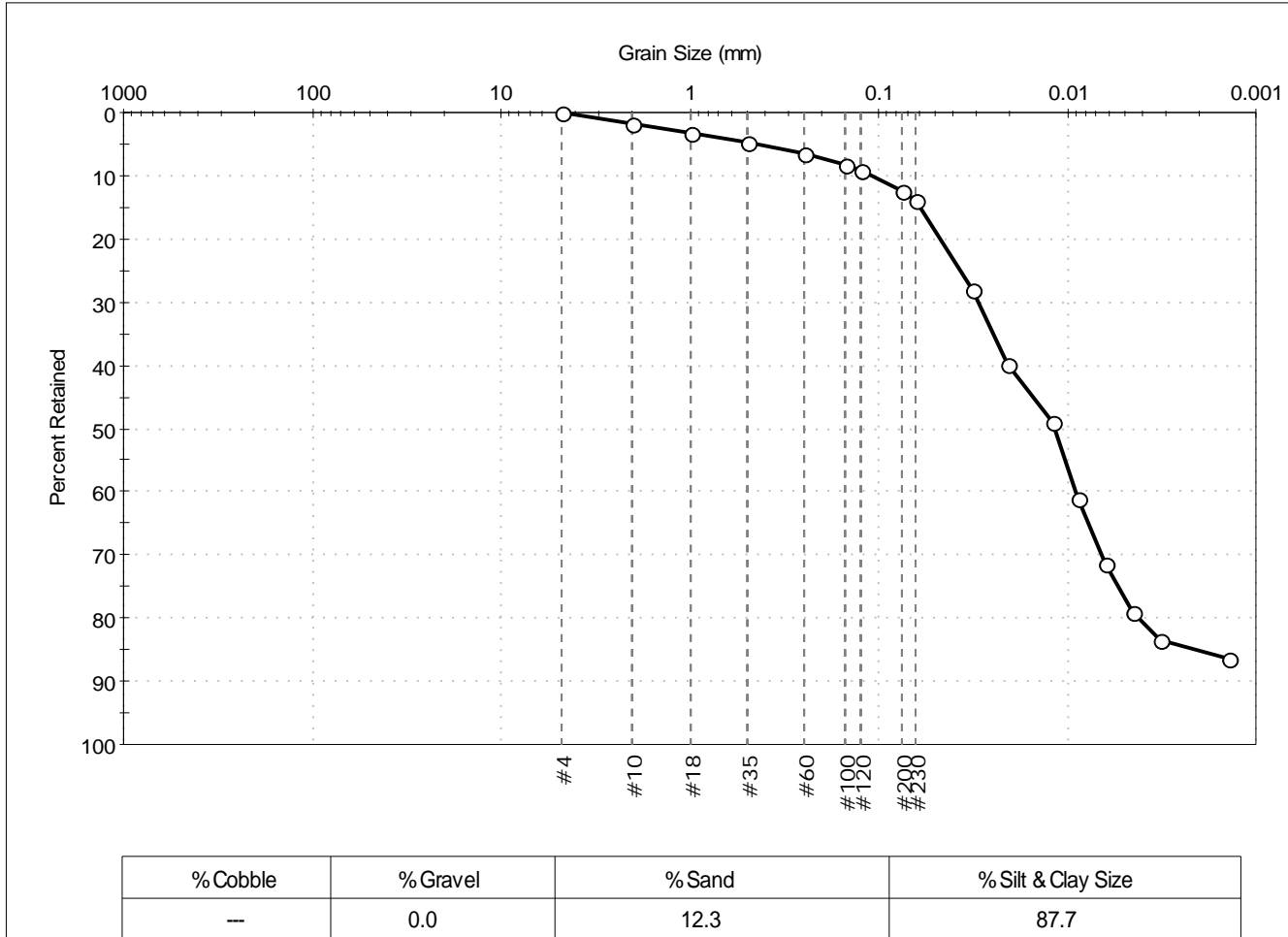
| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |





|                                     |                             |   |                        |
|-------------------------------------|-----------------------------|---|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                     | Project No: GTX-302366 |
| Boring ID: 226-14LTM                | Sample Type: bag            | Tested By: jbr                                | Checked By: jdt        |
| Sample ID: NBH14-0308               | Test Date: 10/30/14         | Test Id: 310520                               |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, dark olive gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 5            |               |          |
| #60        | 0.25               | 7            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 9            |               |          |
| #200       | 0.075              | 12           |               |          |
| #230       | 0.063              | 14           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0318             | 28           |               |          |
| ---        | 0.0206             | 40           |               |          |
| ---        | 0.0121             | 49           |               |          |
| ---        | 0.0088             | 61           |               |          |
| ---        | 0.0063             | 71           |               |          |
| ---        | 0.0045             | 79           |               |          |
| ---        | 0.0032             | 83           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0599 mm | D <sub>30</sub> = 0.0066 mm |
| D <sub>60</sub> = 0.0205 mm | D <sub>15</sub> = 0.0021 mm |
| D <sub>50</sub> = 0.0118 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

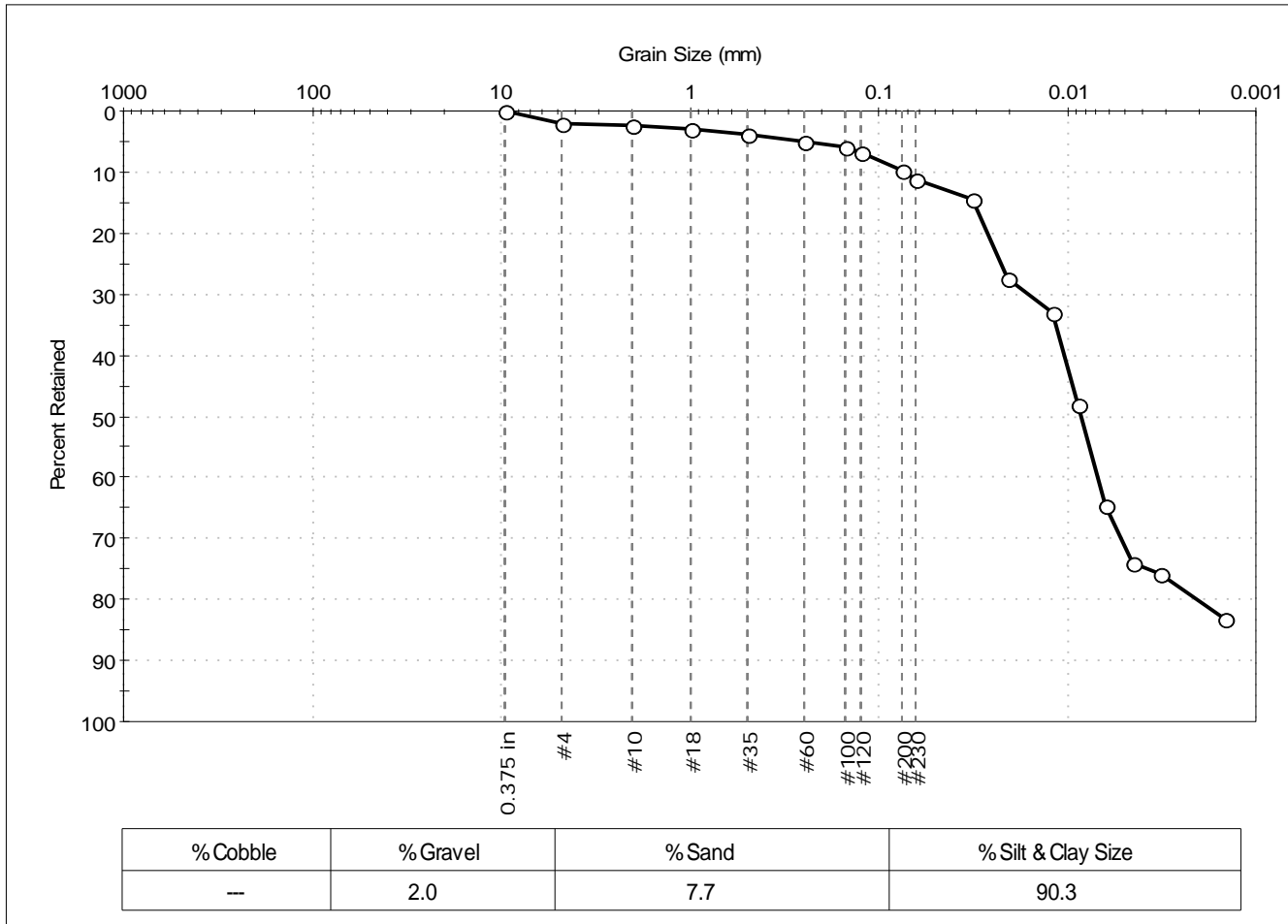
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                             |              |            |
|---------------------|-----------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute |              |            |
| Project:            | New Bedford Harbor          |              |            |
| Location:           | New Bedford, MA             | Project No:  | GTX-302366 |
| Boring ID:          | 226-14LTM                   | Sample Type: | bag        |
| Sample ID:          | NBH14-0309                  | Test Date:   | 10/30/14   |
| Depth:              | ---                         | Test Id:     | 310521     |
| Test Comment:       | ---                         |              |            |
| Sample Description: | Wet, dark olive brown silt  |              |            |
| Sample Comment:     | ---                         |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 3            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 6            |               |          |
| #120       | 0.12               | 7            |               |          |
| #200       | 0.075              | 10           |               |          |
| #230       | 0.063              | 11           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0319             | 15           |               |          |
| ---        | 0.0206             | 28           |               |          |
| ---        | 0.0120             | 33           |               |          |
| ---        | 0.0087             | 48           |               |          |
| ---        | 0.0063             | 65           |               |          |
| ---        | 0.0045             | 74           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0015             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0314 mm | D <sub>30</sub> = 0.0052 mm |
| D <sub>60</sub> = 0.0104 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0084 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

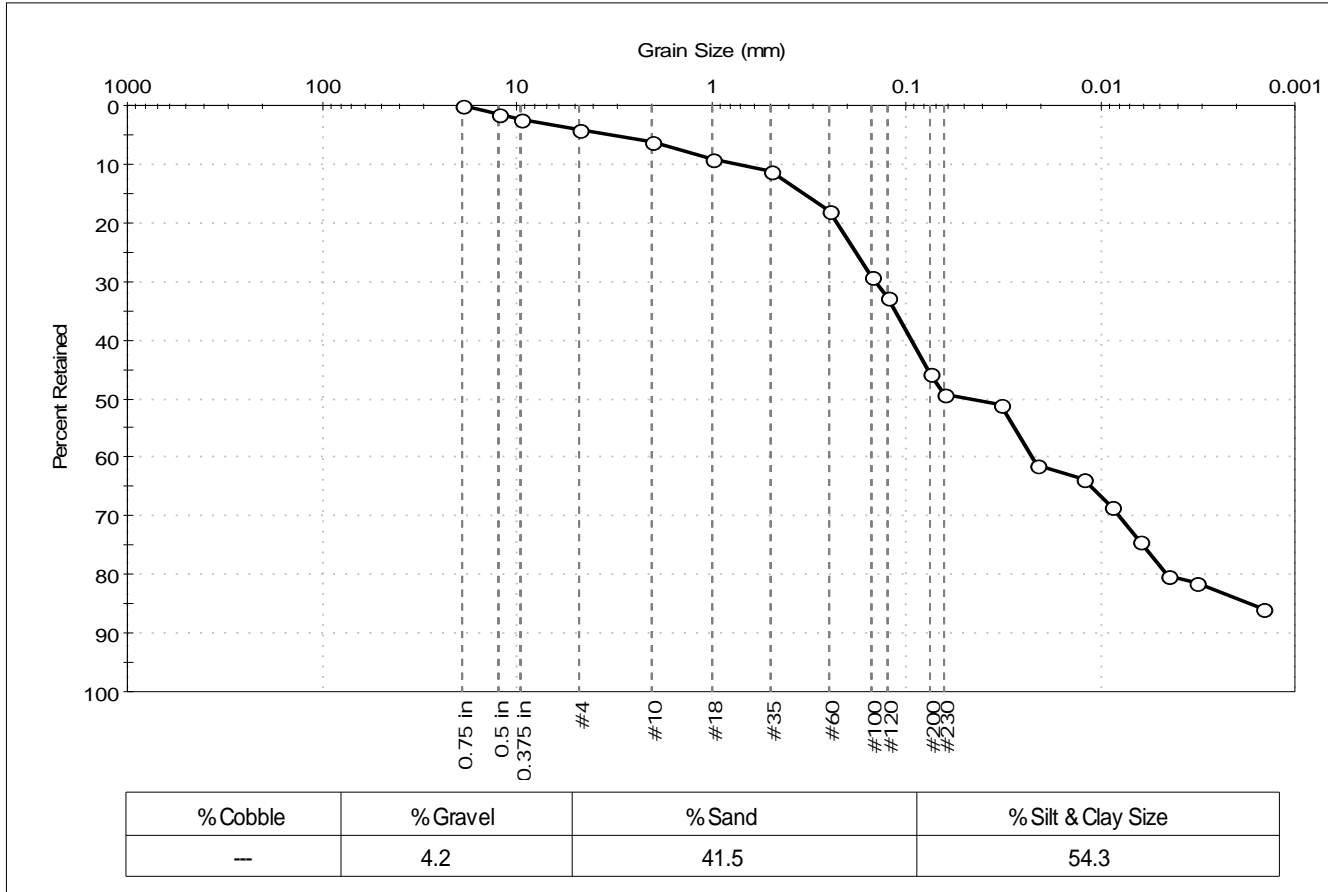
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 227-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0310                      | Test Date:   | 10/30/14   |
| Depth:              | ---                             | Test Id:     | 310522     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Wet, dark olive gray sandy silt |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.75 in    | 19.00              | 0            |               |          |
| 0.5 in     | 12.50              | 1            |               |          |
| 0.375 in   | 9.50               | 2            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 11           |               |          |
| #60        | 0.25               | 18           |               |          |
| #100       | 0.15               | 29           |               |          |
| #120       | 0.12               | 33           |               |          |
| #200       | 0.075              | 46           |               |          |
| #230       | 0.063              | 49           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 51           |               |          |
| ---        | 0.0210             | 61           |               |          |
| ---        | 0.0123             | 64           |               |          |
| ---        | 0.0087             | 68           |               |          |
| ---        | 0.0063             | 74           |               |          |
| ---        | 0.0045             | 80           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0015             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3423 mm | D <sub>30</sub> = 0.0080 mm |
| D <sub>60</sub> = 0.0940 mm | D <sub>15</sub> = 0.0017 mm |
| D <sub>50</sub> = 0.0459 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

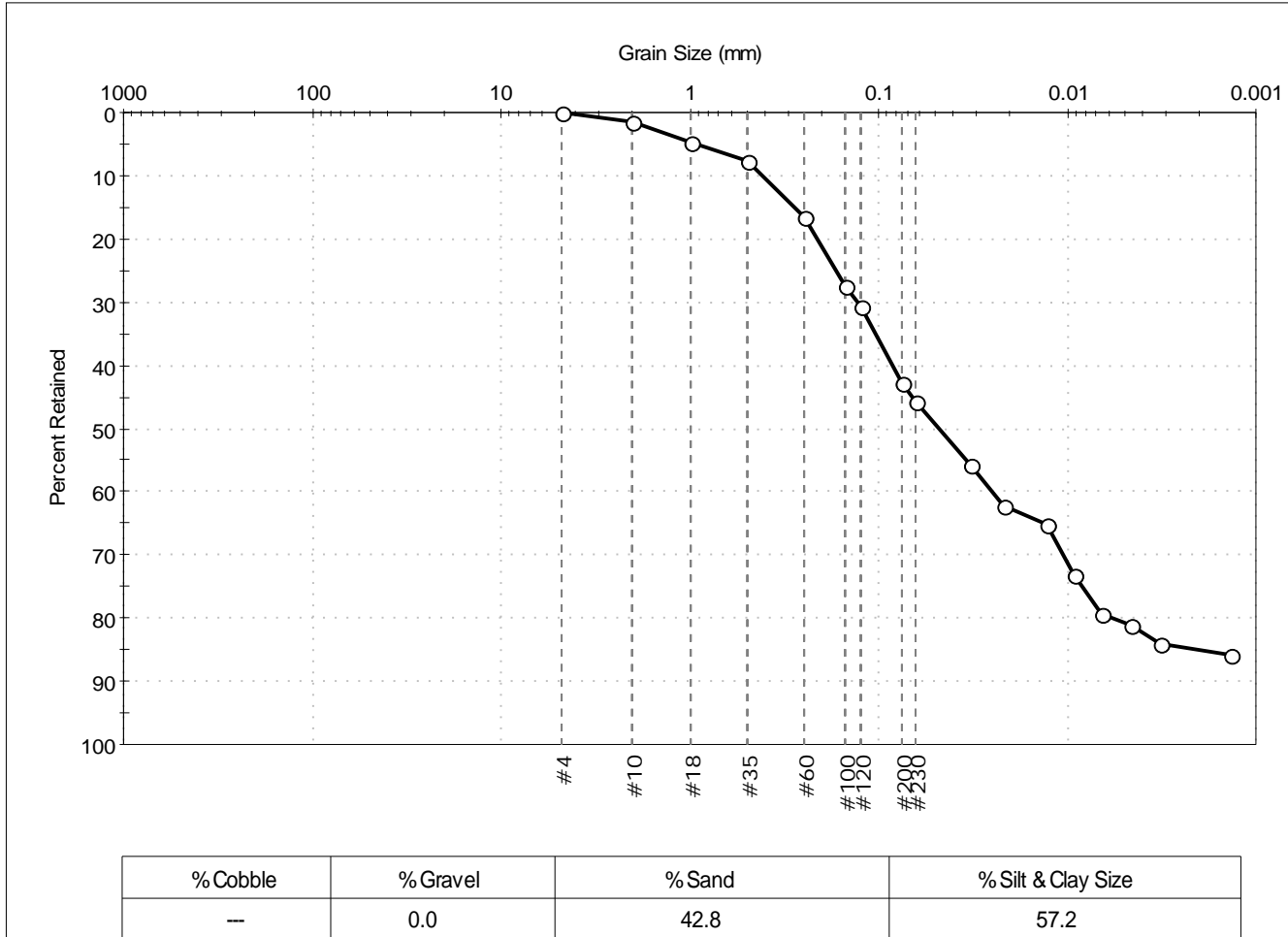
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 227-14LTM                               | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0311                              | Test Date: 10/23/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310523             |                           |                        |
| Test Comment: ---                                  |                             |                           |                        |
| Sample Description: Wet, very dark gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 8            |               |          |
| #60        | 0.25               | 17           |               |          |
| #100       | 0.15               | 28           |               |          |
| #120       | 0.12               | 31           |               |          |
| #200       | 0.075              | 43           |               |          |
| #230       | 0.063              | 46           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0323             | 56           |               |          |
| ---        | 0.0218             | 62           |               |          |
| ---        | 0.0127             | 65           |               |          |
| ---        | 0.0091             | 73           |               |          |
| ---        | 0.0065             | 79           |               |          |
| ---        | 0.0046             | 81           |               |          |
| ---        | 0.0032             | 84           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2834 mm | D <sub>30</sub> = 0.0104 mm |
| D <sub>60</sub> = 0.0842 mm | D <sub>15</sub> = 0.0021 mm |
| D <sub>50</sub> = 0.0475 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

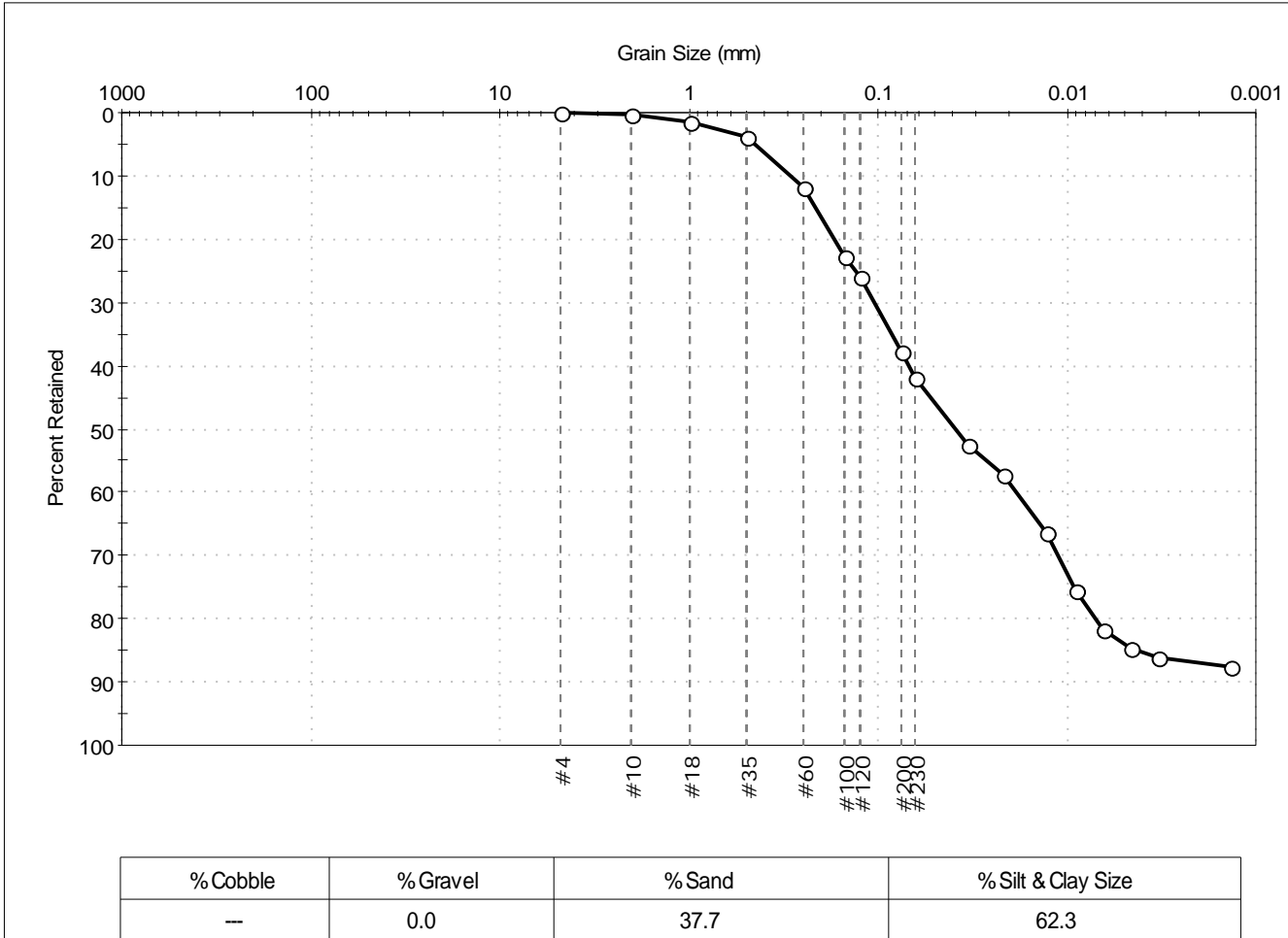
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 227-14LTM                               | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0311DUP                           | Test Date: 10/23/14         | Test Id: 310524           |                        |
| Depth: ---   | Test Comment: ---           |                           |                        |
| Sample Description: Wet, very dark gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 12           |               |          |
| #100       | 0.15               | 23           |               |          |
| #120       | 0.12               | 26           |               |          |
| #200       | 0.075              | 38           |               |          |
| #230       | 0.063              | 42           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0335             | 53           |               |          |
| ---        | 0.0217             | 57           |               |          |
| ---        | 0.0127             | 66           |               |          |
| ---        | 0.0090             | 75           |               |          |
| ---        | 0.0065             | 82           |               |          |
| ---        | 0.0046             | 85           |               |          |
| ---        | 0.0033             | 86           |               |          |
| ---        | 0.0014             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2155 mm | D <sub>30</sub> = 0.0111 mm |
| D <sub>60</sub> = 0.0680 mm | D <sub>15</sub> = 0.0043 mm |
| D <sub>50</sub> = 0.0388 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

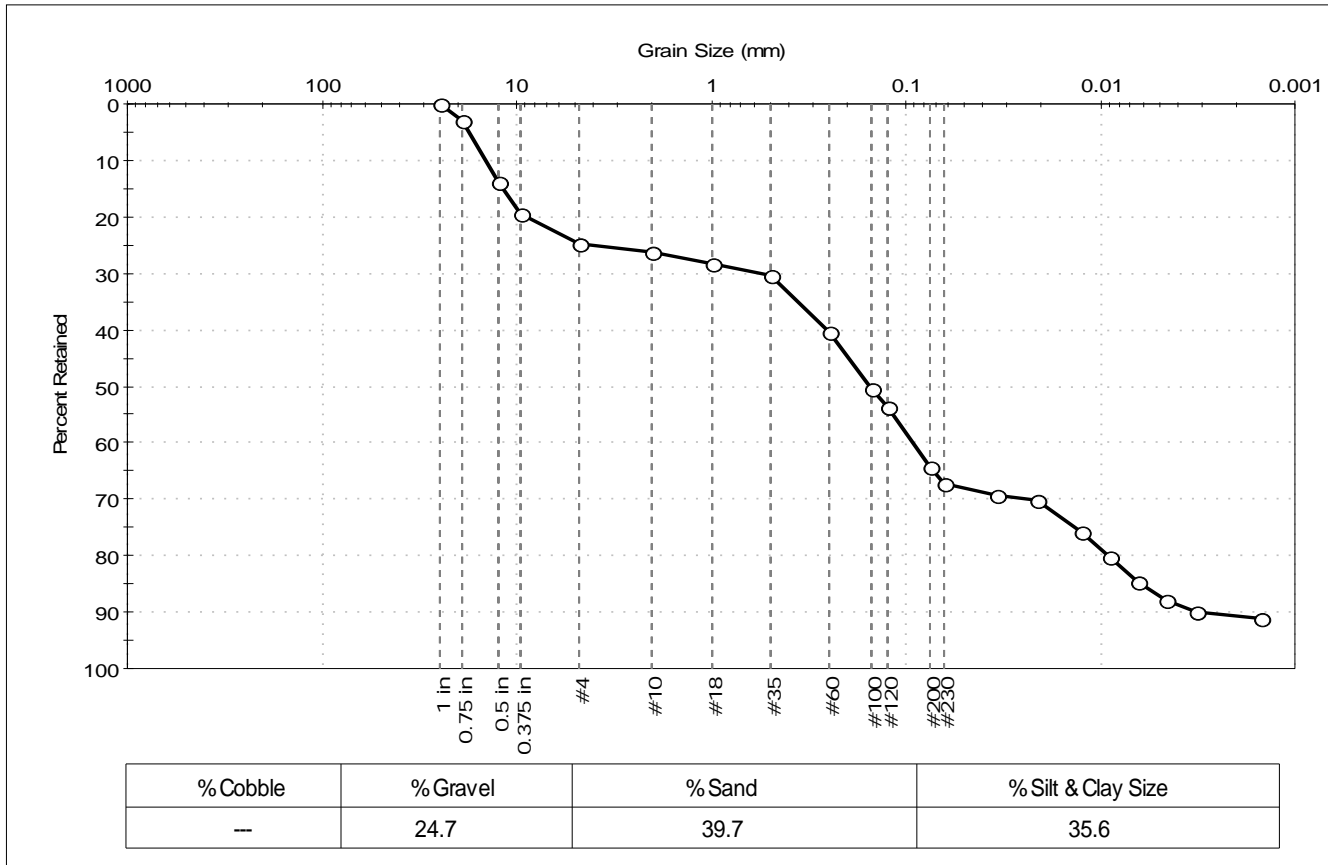
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 227-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0312  
 Test Date: 10/30/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310528  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silty sand with gravel  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 1 in       | 25.00              | 0            |               |          |
| 0.75 in    | 19.00              | 3            |               |          |
| 0.5 in     | 12.50              | 14           |               |          |
| 0.375 in   | 9.50               | 20           |               |          |
| #4         | 4.75               | 25           |               |          |
| #10        | 2.00               | 26           |               |          |
| #18        | 1.00               | 28           |               |          |
| #35        | 0.50               | 31           |               |          |
| #60        | 0.25               | 40           |               |          |
| #100       | 0.15               | 50           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 64           |               |          |
| #230       | 0.063              | 67           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0338             | 69           |               |          |
| ---        | 0.0214             | 70           |               |          |
| ---        | 0.0126             | 76           |               |          |
| ---        | 0.0090             | 80           |               |          |
| ---        | 0.0064             | 85           |               |          |
| ---        | 0.0046             | 88           |               |          |
| ---        | 0.0033             | 90           |               |          |
| ---        | 0.0015             | 91           |               |          |

**Coefficients**

|                              |                             |
|------------------------------|-----------------------------|
| D <sub>85</sub> = 11.8966 mm | D <sub>30</sub> = 0.0248 mm |
| D <sub>60</sub> = 0.2549 mm  | D <sub>15</sub> = 0.0062 mm |
| D <sub>50</sub> = 0.1536 mm  | D <sub>10</sub> = 0.0033 mm |
| C <sub>u</sub> = 77.242      | C <sub>c</sub> = 0.731      |

**Classification**

|               |                       |
|---------------|-----------------------|
| <u>ASTM</u>   | N/A                   |
| <u>AASHTO</u> | Silty Soils (A-4 (0)) |

**Sample/Test Description**

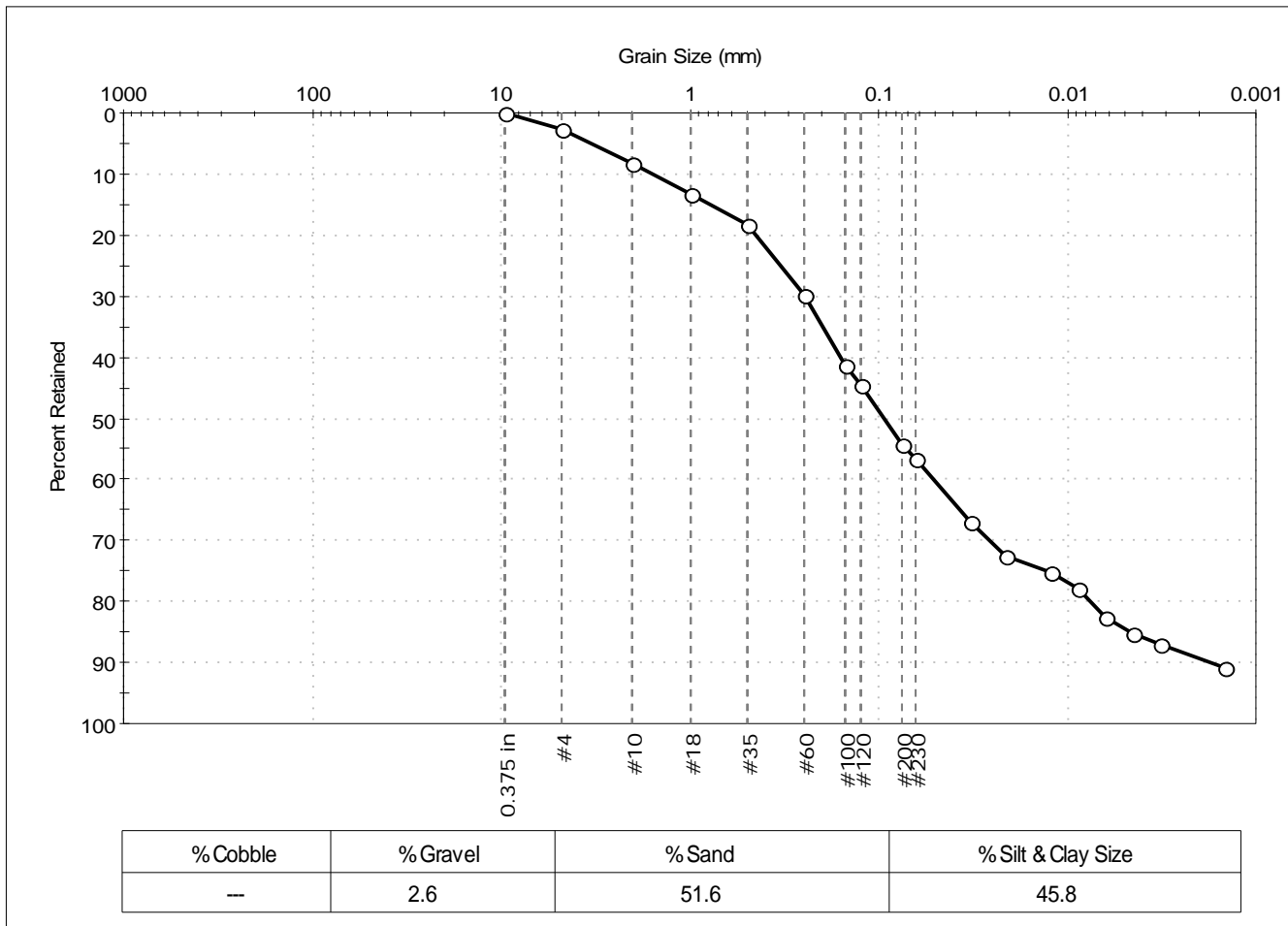
Sand/Gravel Particle Shape : ---  
 Sand/Gravel Hardness : ---  
 Dispersion Device : Apparatus A - Mech Mixer  
 Dispersion Period : 1 minute  
 Specific Gravity : 2.65  
 Separation of Sample: #230 Sieve





Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 227-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0313  
 Test Date: 10/30/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310525  
 Test Comment: ---  
 Sample Description: Wet, dark olive brown silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 3            |               |          |
| #10        | 2.00               | 8            |               |          |
| #18        | 1.00               | 13           |               |          |
| #35        | 0.50               | 18           |               |          |
| #60        | 0.25               | 30           |               |          |
| #100       | 0.15               | 41           |               |          |
| #120       | 0.12               | 44           |               |          |
| #200       | 0.075              | 54           |               |          |
| #230       | 0.063              | 57           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0328             | 67           |               |          |
| ---        | 0.0212             | 72           |               |          |
| ---        | 0.0124             | 75           |               |          |
| ---        | 0.0088             | 78           |               |          |
| ---        | 0.0063             | 83           |               |          |
| ---        | 0.0045             | 85           |               |          |
| ---        | 0.0032             | 87           |               |          |
| ---        | 0.0015             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.7868 mm | D <sub>30</sub> = 0.0258 mm |
| D <sub>60</sub> = 0.1594 mm | D <sub>15</sub> = 0.0047 mm |
| D <sub>50</sub> = 0.0936 mm | D <sub>10</sub> = 0.0018 mm |
| C <sub>u</sub> = 88.556     | C <sub>c</sub> = 2.320      |

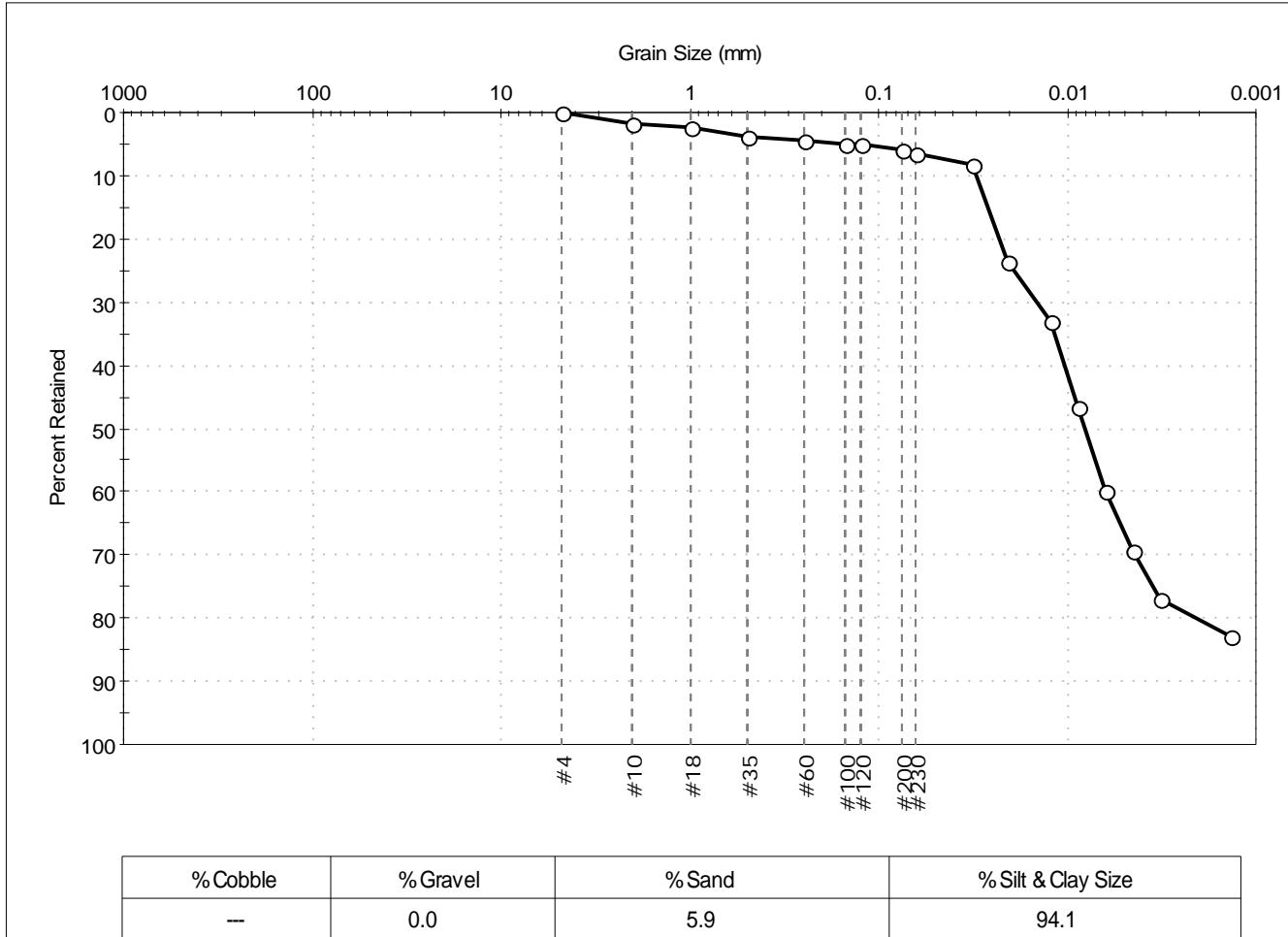
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute          | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 217-14LTM                         | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0314                        | Test Date: 10/23/14         | Checked By: jdt           |                        |
| Depth: ---                                   | Test Id: 310526             |                           |                        |
| Test Comment: ---                            |                             |                           |                        |
| Sample Description: Wet, very dark gray silt |                             |                           |                        |
| Sample Comment: ---                          |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 5            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 7            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 8            |               |          |
| ---        | 0.0208             | 24           |               |          |
| ---        | 0.0122             | 33           |               |          |
| ---        | 0.0088             | 46           |               |          |
| ---        | 0.0063             | 60           |               |          |
| ---        | 0.0045             | 69           |               |          |
| ---        | 0.0032             | 77           |               |          |
| ---        | 0.0013             | 83           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0264 mm | D <sub>30</sub> = 0.0044 mm |
| D <sub>60</sub> = 0.0103 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0081 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

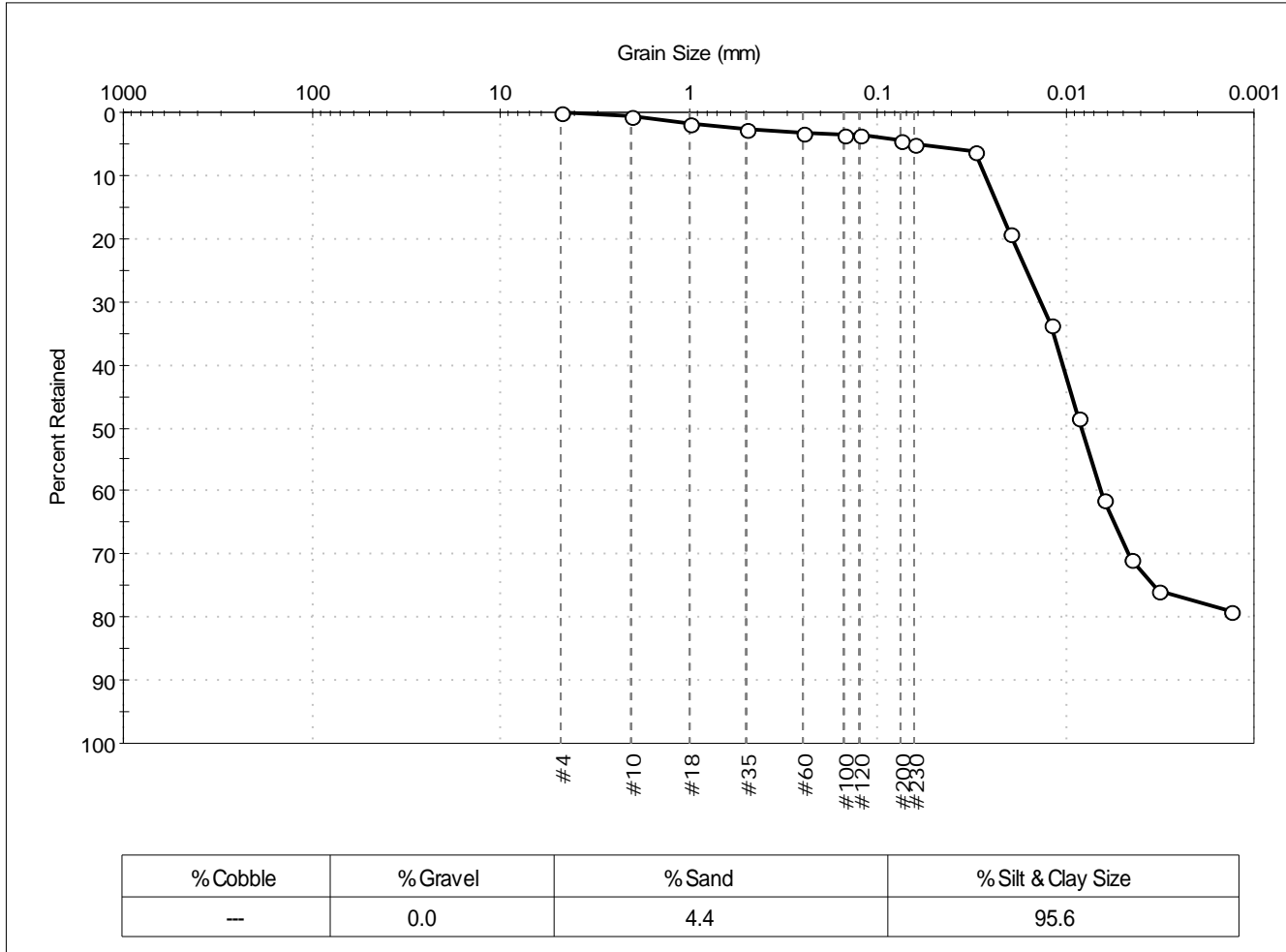
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 217-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0315               | Test Date: 10/27/14         | Test Id: 310527                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 4            |               |          |
| #200       | 0.075              | 4            |               |          |
| #230       | 0.063              | 5            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0305             | 6            |               |          |
| ---        | 0.0198             | 19           |               |          |
| ---        | 0.0118             | 34           |               |          |
| ---        | 0.0086             | 48           |               |          |
| ---        | 0.0062             | 61           |               |          |
| ---        | 0.0045             | 71           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0013             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0228 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0103 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0083 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

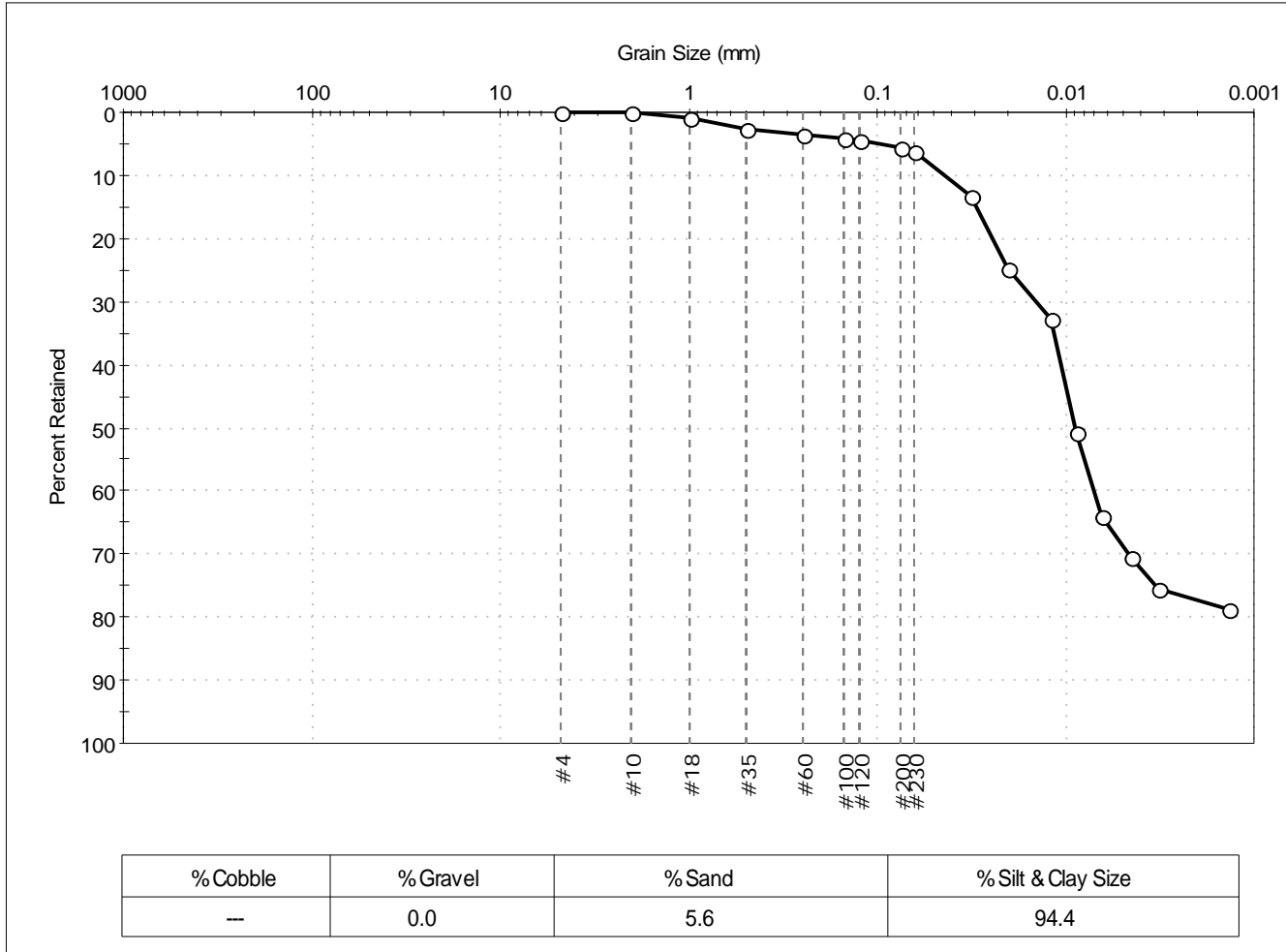
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 217-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0316               | Test Date: 10/29/14         | Test Id: 310529                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 4            |               |          |
| #120       | 0.12               | 5            |               |          |
| #200       | 0.075              | 6            |               |          |
| #230       | 0.063              | 6            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0314             | 13           |               |          |
| ---        | 0.0203             | 25           |               |          |
| ---        | 0.0120             | 33           |               |          |
| ---        | 0.0088             | 51           |               |          |
| ---        | 0.0064             | 64           |               |          |
| ---        | 0.0045             | 71           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0293 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0106 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0089 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

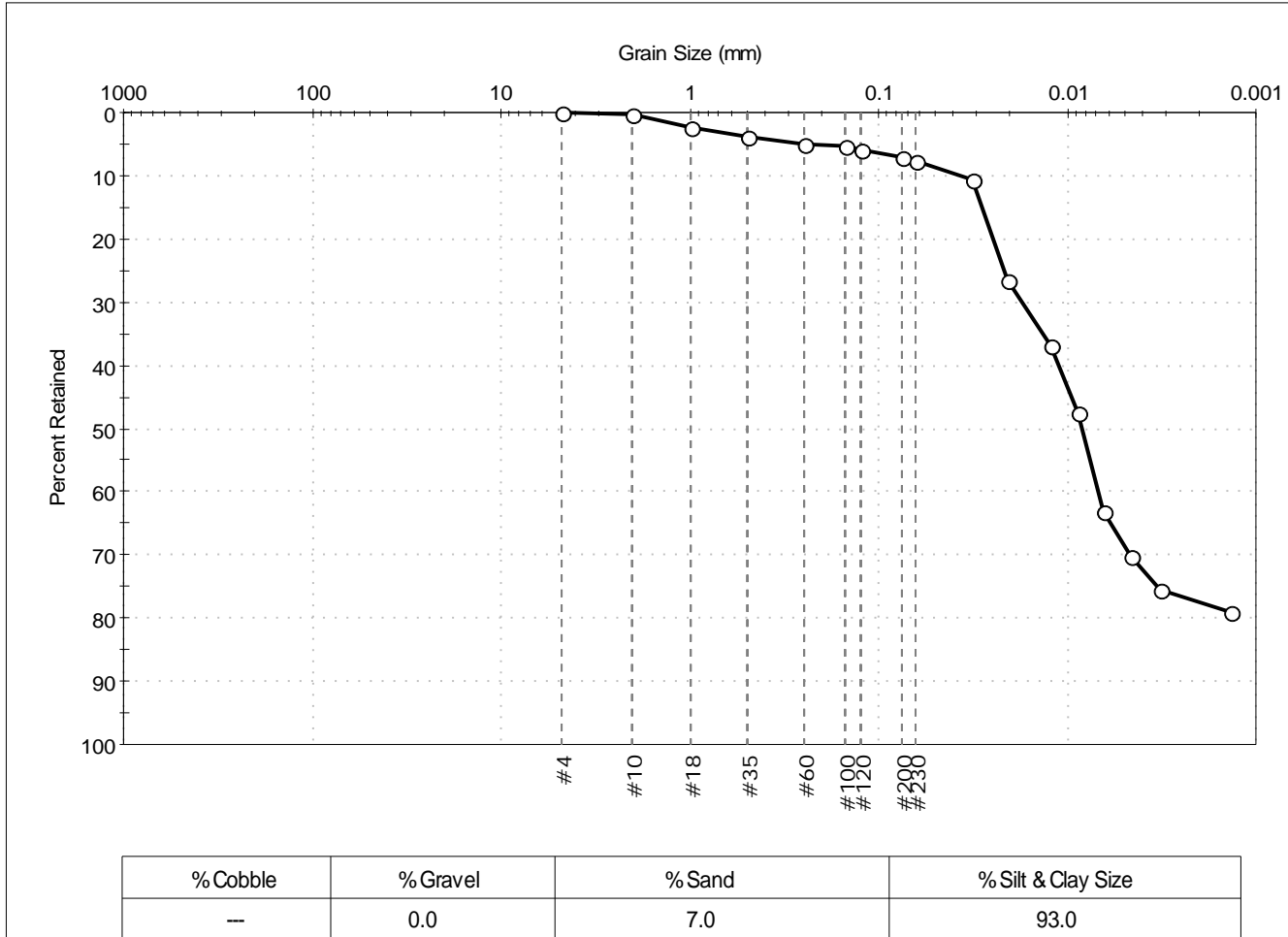
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                    | Project No: GTX-302366 |
| Boring ID: 217-14LTM                | Sample Type: bag            | Tested By: jbr                               | Checked By: jdt        |
| Sample ID: NBH14-0317               | Test Date: 10/29/14         | Test Id: 310530                              |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt | Sample Comment: ----   |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 4            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 5            |               |          |
| #120       | 0.12               | 6            |               |          |
| #200       | 0.075              | 7            |               |          |
| #230       | 0.063              | 8            |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0317             | 11           |               |          |
| ---        | 0.0207             | 26           |               |          |
| ---        | 0.0122             | 37           |               |          |
| ---        | 0.0088             | 47           |               |          |
| ---        | 0.0064             | 63           |               |          |
| ---        | 0.0046             | 70           |               |          |
| ---        | 0.0032             | 75           |               |          |
| ---        | 0.0014             | 79           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0282 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0111 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0083 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

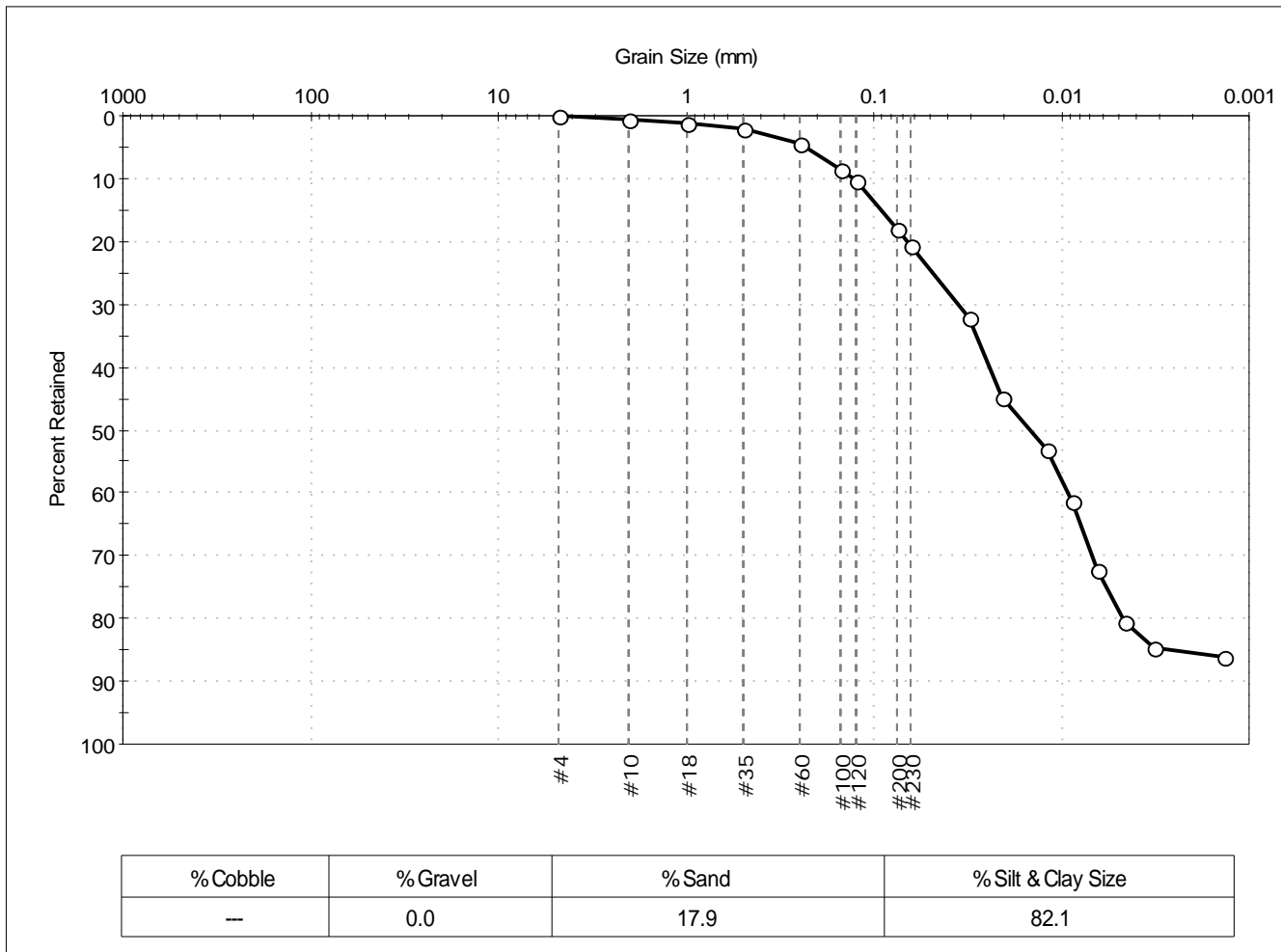
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                    |              |            |
|---------------------|------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute        |              |            |
| Project:            | New Bedford Harbor                 |              |            |
| Location:           | New Bedford, MA                    | Project No:  | GTX-302366 |
| Boring ID:          | 212-14LTM                          | Sample Type: | bag        |
| Sample ID:          | NBH14-0318                         | Test Date:   | 10/23/14   |
| Depth:              | ---                                | Test Id:     | 310531     |
| Test Comment:       | ---                                |              |            |
| Sample Description: | Wet, very dark gray silt with sand |              |            |
| Sample Comment:     | ---                                |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 1            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 10           |               |          |
| #200       | 0.075              | 18           |               |          |
| #230       | 0.063              | 21           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0313             | 32           |               |          |
| ---        | 0.0208             | 45           |               |          |
| ---        | 0.0121             | 53           |               |          |
| ---        | 0.0088             | 61           |               |          |
| ---        | 0.0064             | 72           |               |          |
| ---        | 0.0046             | 81           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0907 mm | D <sub>30</sub> = 0.0068 mm |
| D <sub>60</sub> = 0.0243 mm | D <sub>15</sub> = 0.0028 mm |
| D <sub>50</sub> = 0.0147 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

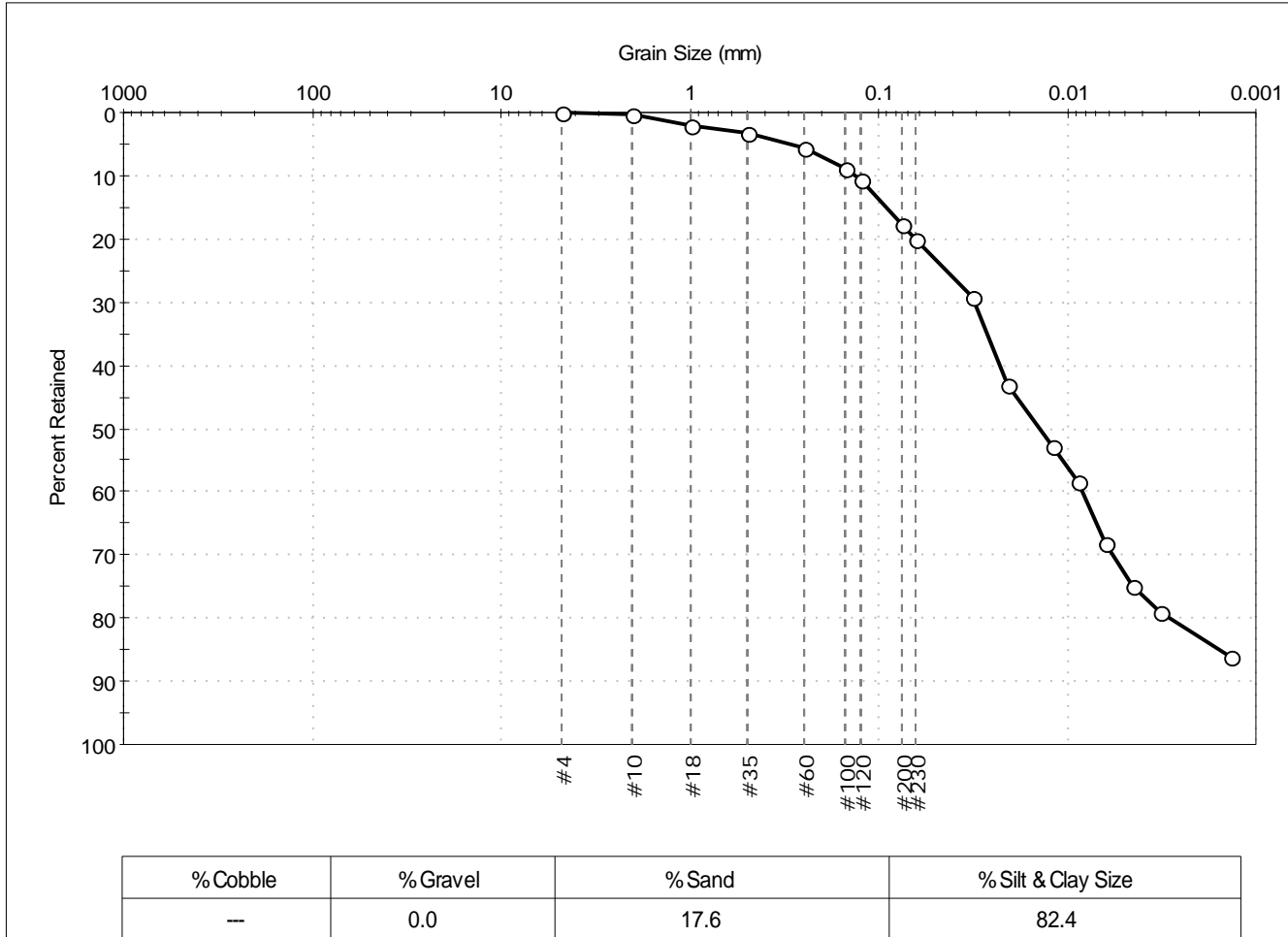
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 212-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0319               | Test Date: 10/24/14         | Test Id: 310532  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 2            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 6            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 11           |               |          |
| #200       | 0.075              | 18           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0315             | 29           |               |          |
| ---        | 0.0206             | 43           |               |          |
| ---        | 0.0121             | 53           |               |          |
| ---        | 0.0087             | 58           |               |          |
| ---        | 0.0063             | 68           |               |          |
| ---        | 0.0045             | 75           |               |          |
| ---        | 0.0032             | 79           |               |          |
| ---        | 0.0014             | 86           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0911 mm | D <sub>30</sub> = 0.0057 mm |
| D <sub>60</sub> = 0.0226 mm | D <sub>15</sub> = 0.0016 mm |
| D <sub>50</sub> = 0.0141 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

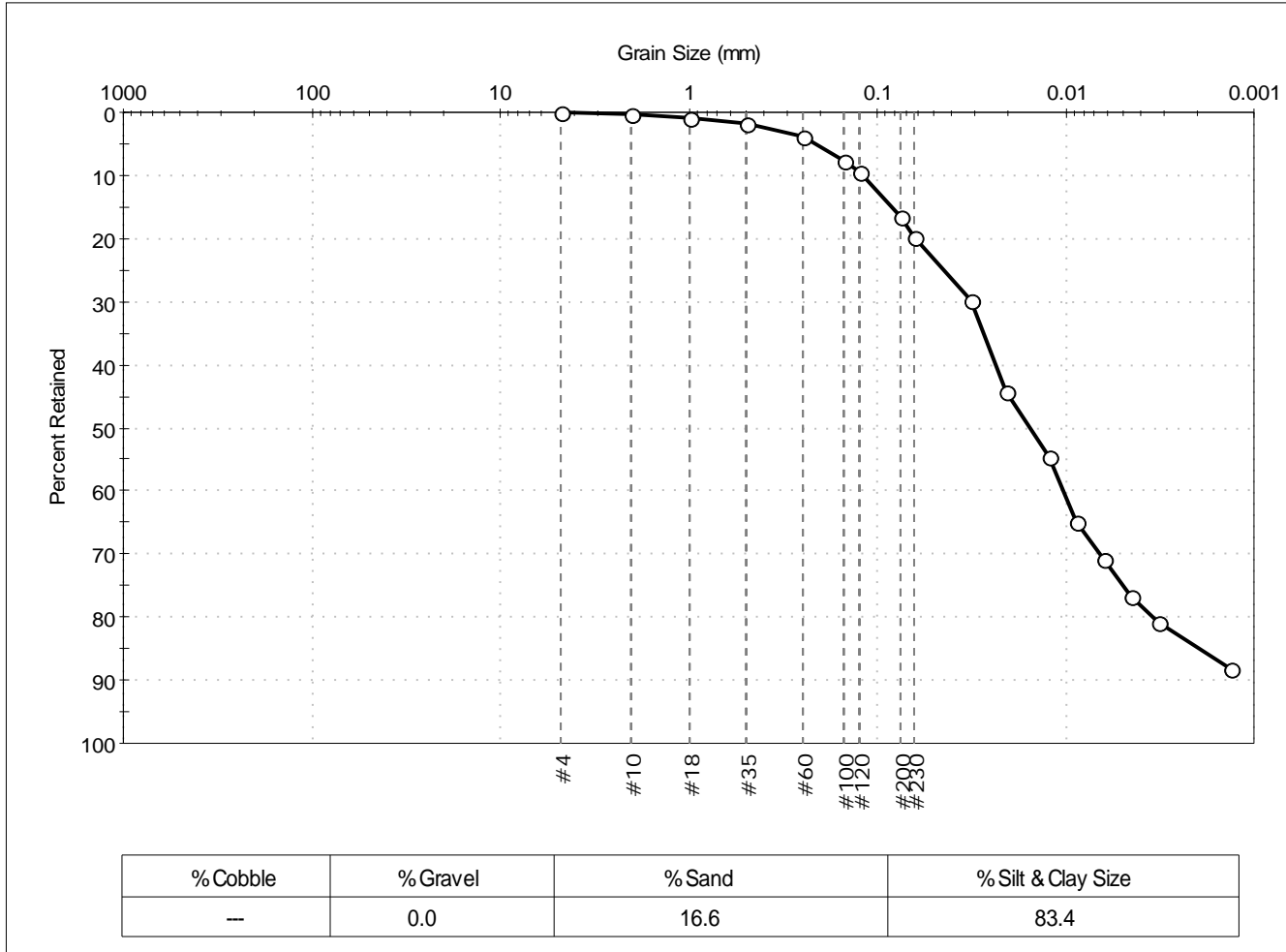
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                              | Project No: GTX-302366 |
| Boring ID: 212-14LTM                | Sample Type: bag            | Tested By: jbr   | Checked By: jdt        |
| Sample ID: NBH14-0320               | Test Date: 10/27/14         | Test Id: 310533  |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silt with sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 4            |               |          |
| #100       | 0.15               | 8            |               |          |
| #120       | 0.12               | 9            |               |          |
| #200       | 0.075              | 17           |               |          |
| #230       | 0.063              | 20           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 30           |               |          |
| ---        | 0.0207             | 44           |               |          |
| ---        | 0.0122             | 55           |               |          |
| ---        | 0.0088             | 65           |               |          |
| ---        | 0.0063             | 71           |               |          |
| ---        | 0.0045             | 77           |               |          |
| ---        | 0.0032             | 81           |               |          |
| ---        | 0.0013             | 88           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.0838 mm | D <sub>30</sub> = 0.0066 mm |
| D <sub>60</sub> = 0.0235 mm | D <sub>15</sub> = 0.0020 mm |
| D <sub>50</sub> = 0.0155 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

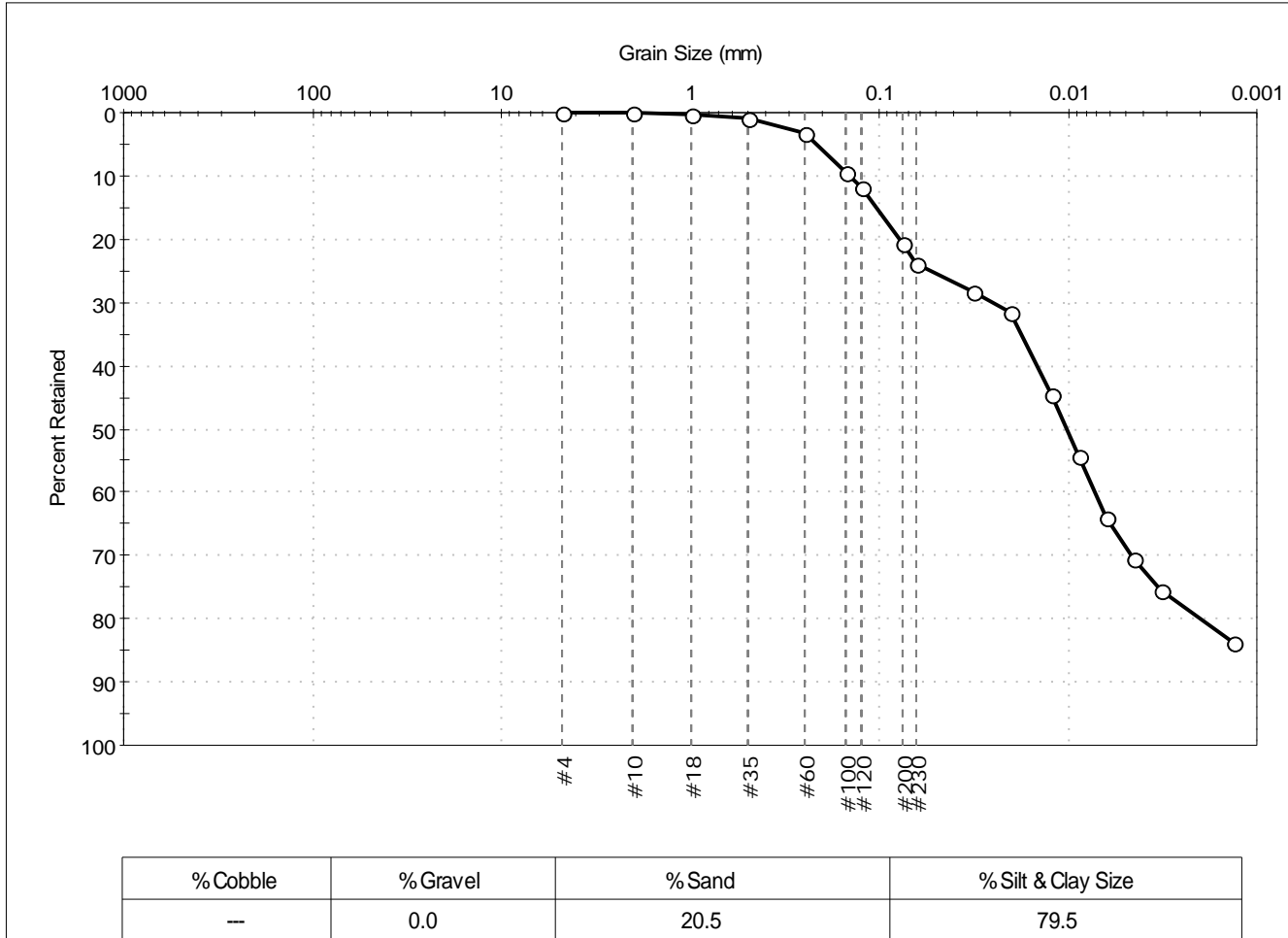
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                    |              |            |
|---------------------|------------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute        |              |            |
| Project:            | New Bedford Harbor                 |              |            |
| Location:           | New Bedford, MA                    | Project No:  | GTX-302366 |
| Boring ID:          | 212-14LTM                          | Sample Type: | bag        |
| Sample ID:          | NBH14-0321                         | Test Date:   | 10/27/14   |
| Depth:              | ---                                | Test Id:     | 310534     |
| Test Comment:       | ---                                |              |            |
| Sample Description: | Wet, very dark gray silt with sand |              |            |
| Sample Comment:     | ---                                |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 3            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 12           |               |          |
| #200       | 0.075              | 21           |               |          |
| #230       | 0.063              | 24           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0321             | 28           |               |          |
| ---        | 0.0204             | 32           |               |          |
| ---        | 0.0121             | 45           |               |          |
| ---        | 0.0087             | 54           |               |          |
| ---        | 0.0063             | 64           |               |          |
| ---        | 0.0045             | 71           |               |          |
| ---        | 0.0032             | 76           |               |          |
| ---        | 0.0013             | 84           |               |          |

| Coefficients                |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1032 mm | D <sub>30</sub> = 0.0046 mm |
| D <sub>60</sub> = 0.0145 mm | D <sub>15</sub> = N/A       |
| D <sub>50</sub> = 0.0101 mm | D <sub>10</sub> = N/A       |
| C <sub>u</sub> = N/A        | C <sub>c</sub> = N/A        |

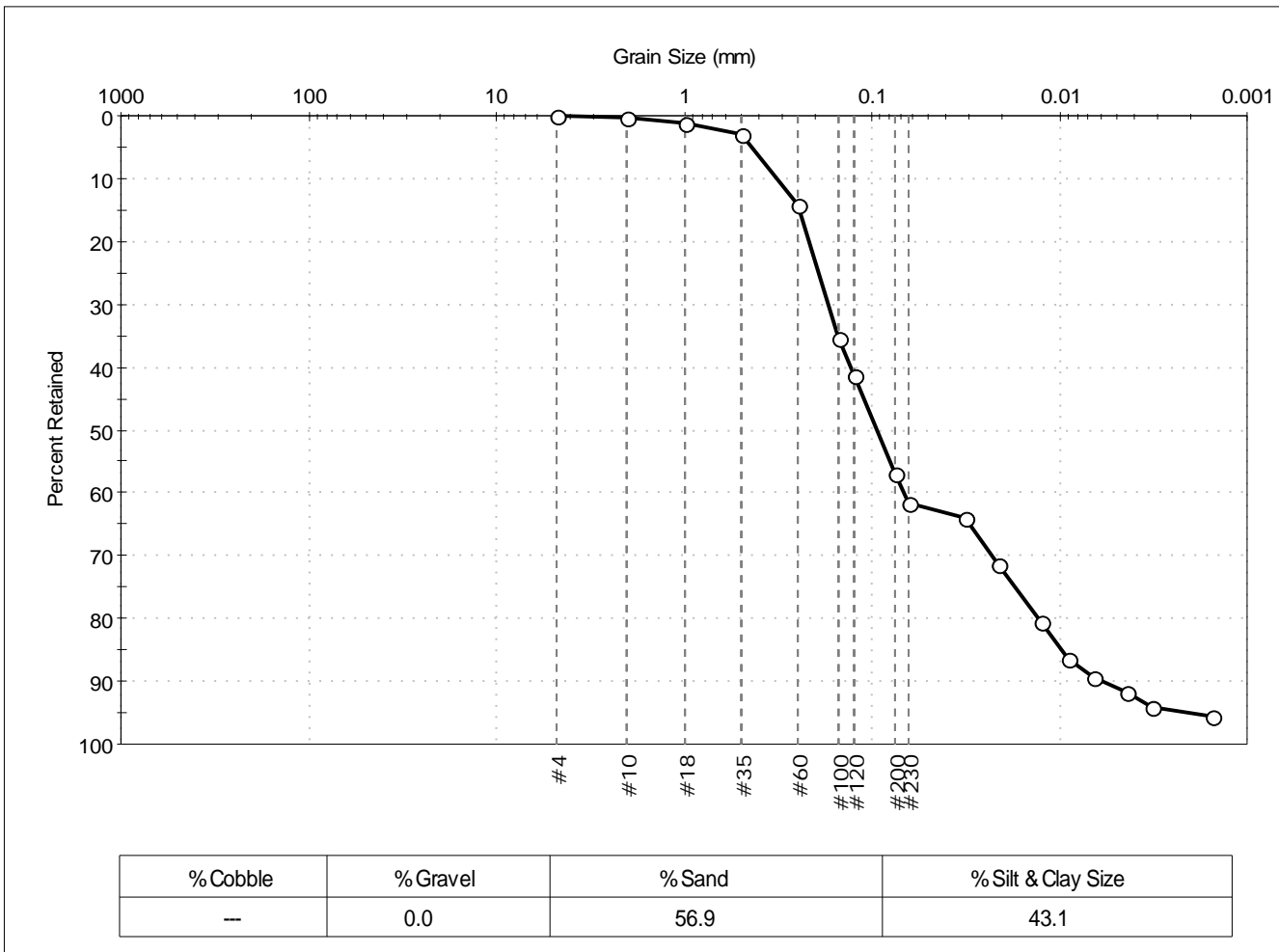
| Classification |                       |
|----------------|-----------------------|
| ASTM           | N/A                   |
| AASHTO         | Silty Soils (A-4 (0)) |

| Sample/Test Description                      |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



Client: Battelle Memorial Institute  
 Project: New Bedford Harbor  
 Location: New Bedford, MA  
 Project No: GTX-302366  
 Boring ID: 211-14LTM  
 Sample Type: bag  
 Tested By: jbr  
 Sample ID: NBH14-0322  
 Test Date: 11/05/14  
 Checked By: jdt  
 Depth: ---  
 Test Id: 310535  
 Test Comment: ---  
 Sample Description: Wet, dark olive gray silty sand  
 Sample Comment: ---

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 1            |               |          |
| #35        | 0.50               | 3            |               |          |
| #60        | 0.25               | 14           |               |          |
| #100       | 0.15               | 36           |               |          |
| #120       | 0.12               | 41           |               |          |
| #200       | 0.075              | 57           |               |          |
| #230       | 0.063              | 62           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0320             | 64           |               |          |
| ---        | 0.0211             | 71           |               |          |
| ---        | 0.0125             | 80           |               |          |
| ---        | 0.0091             | 86           |               |          |
| ---        | 0.0065             | 89           |               |          |
| ---        | 0.0043             | 92           |               |          |
| ---        | 0.0032             | 94           |               |          |
| ---        | 0.0016             | 95           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2451 mm | D <sub>30</sub> = 0.0228 mm |
| D <sub>60</sub> = 0.1298 mm | D <sub>15</sub> = 0.0098 mm |
| D <sub>50</sub> = 0.0939 mm | D <sub>10</sub> = 0.0059 mm |
| C <sub>u</sub> = 22.000     | C <sub>c</sub> = 0.679      |

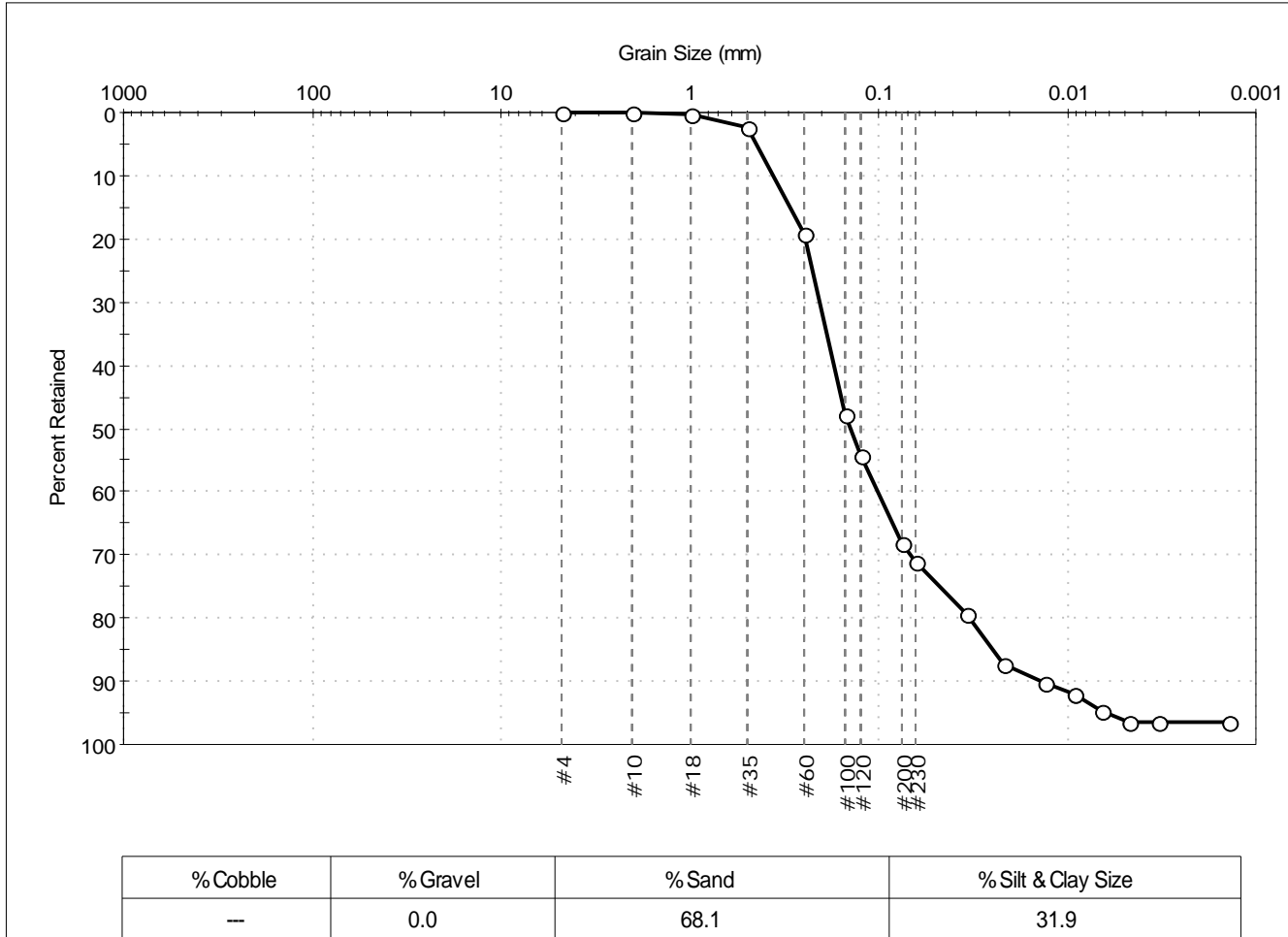
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



|                     |                                |              |            |
|---------------------|--------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute    |              |            |
| Project:            | New Bedford Harbor             |              |            |
| Location:           | New Bedford, MA                | Project No:  | GTX-302366 |
| Boring ID:          | 211-14LTM                      | Sample Type: | bag        |
| Sample ID:          | NBH14-0323                     | Test Date:   | 10/24/14   |
| Depth:              | ---                            | Test Id:     | 310536     |
| Test Comment:       | ---                            |              |            |
| Sample Description: | Wet, very dark gray silty sand |              |            |
| Sample Comment:     | ---                            |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 2            |               |          |
| #60        | 0.25               | 19           |               |          |
| #100       | 0.15               | 48           |               |          |
| #120       | 0.12               | 54           |               |          |
| #200       | 0.075              | 68           |               |          |
| #230       | 0.063              | 71           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0345             | 79           |               |          |
| ---        | 0.0218             | 87           |               |          |
| ---        | 0.0130             | 90           |               |          |
| ---        | 0.0093             | 92           |               |          |
| ---        | 0.0066             | 95           |               |          |
| ---        | 0.0047             | 96           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2956 mm | D <sub>30</sub> = 0.0668 mm |
| D <sub>60</sub> = 0.1722 mm | D <sub>15</sub> = 0.0250 mm |
| D <sub>50</sub> = 0.1408 mm | D <sub>10</sub> = 0.0134 mm |
| C <sub>u</sub> = 12.851     | C <sub>c</sub> = 1.934      |

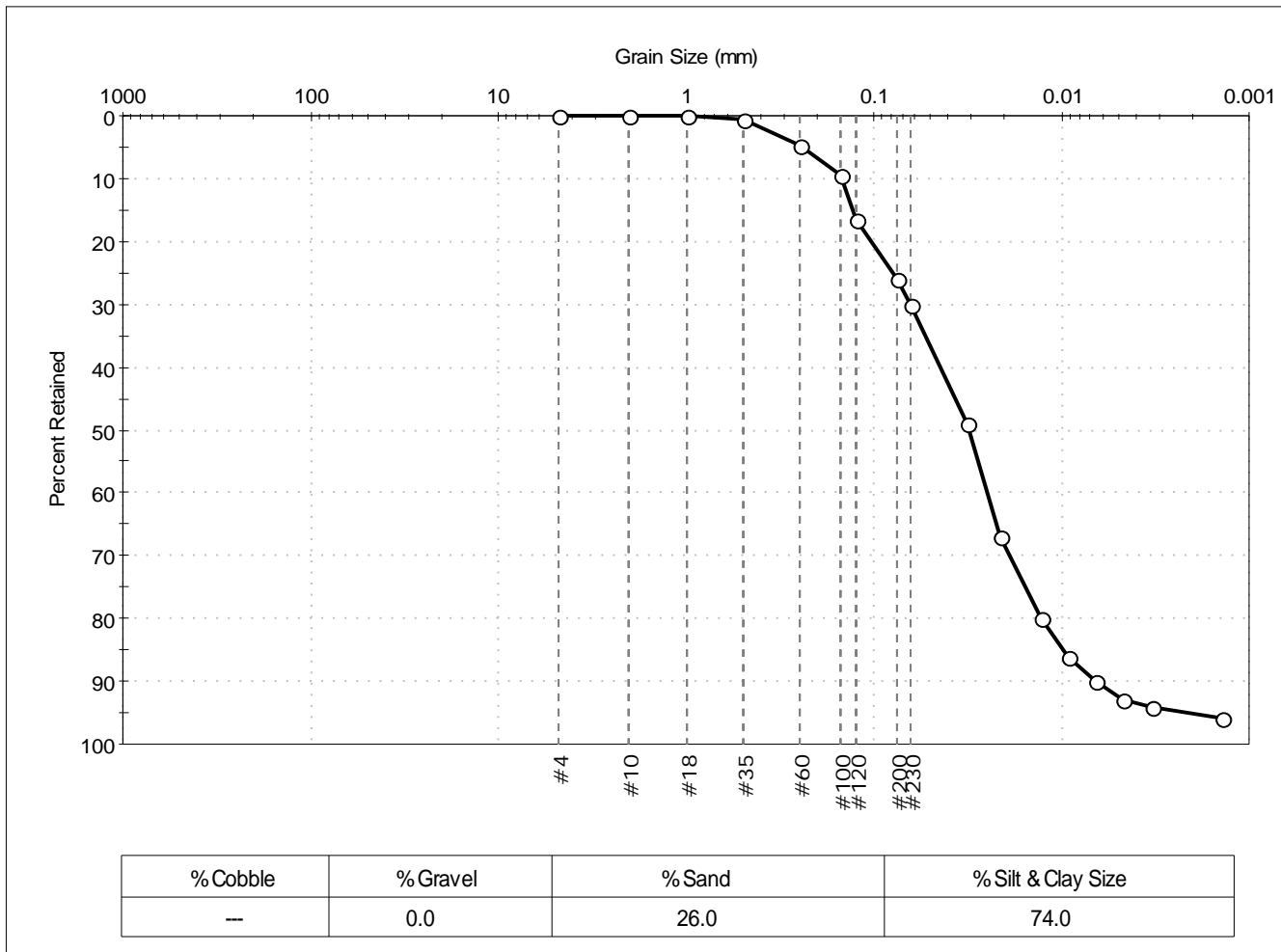
| <u>Classification</u> |                                   |
|-----------------------|-----------------------------------|
| <u>ASTM</u>           | N/A                               |
| <u>AASHTO</u>         | Silty Gravel and Sand (A-2-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                    | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 211-14LTM                                   | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0324                                  | Test Date: 10/29/14         | Test Id: 310537           |                        |
| Depth: ---   |                             |                           |                        |
| Test Comment: ---                                      |                             |                           |                        |
| Sample Description: Wet, very dark gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                    |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 9            |               |          |
| #120       | 0.12               | 16           |               |          |
| #200       | 0.075              | 26           |               |          |
| #230       | 0.063              | 30           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0317             | 49           |               |          |
| ---        | 0.0211             | 67           |               |          |
| ---        | 0.0128             | 80           |               |          |
| ---        | 0.0092             | 86           |               |          |
| ---        | 0.0066             | 90           |               |          |
| ---        | 0.0047             | 93           |               |          |
| ---        | 0.0033             | 94           |               |          |
| ---        | 0.0014             | 96           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1299 mm | D <sub>30</sub> = 0.0188 mm |
| D <sub>60</sub> = 0.0440 mm | D <sub>15</sub> = 0.0097 mm |
| D <sub>50</sub> = 0.0310 mm | D <sub>10</sub> = 0.0066 mm |
| C <sub>u</sub> = 6.667      | C <sub>c</sub> = 1.217      |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

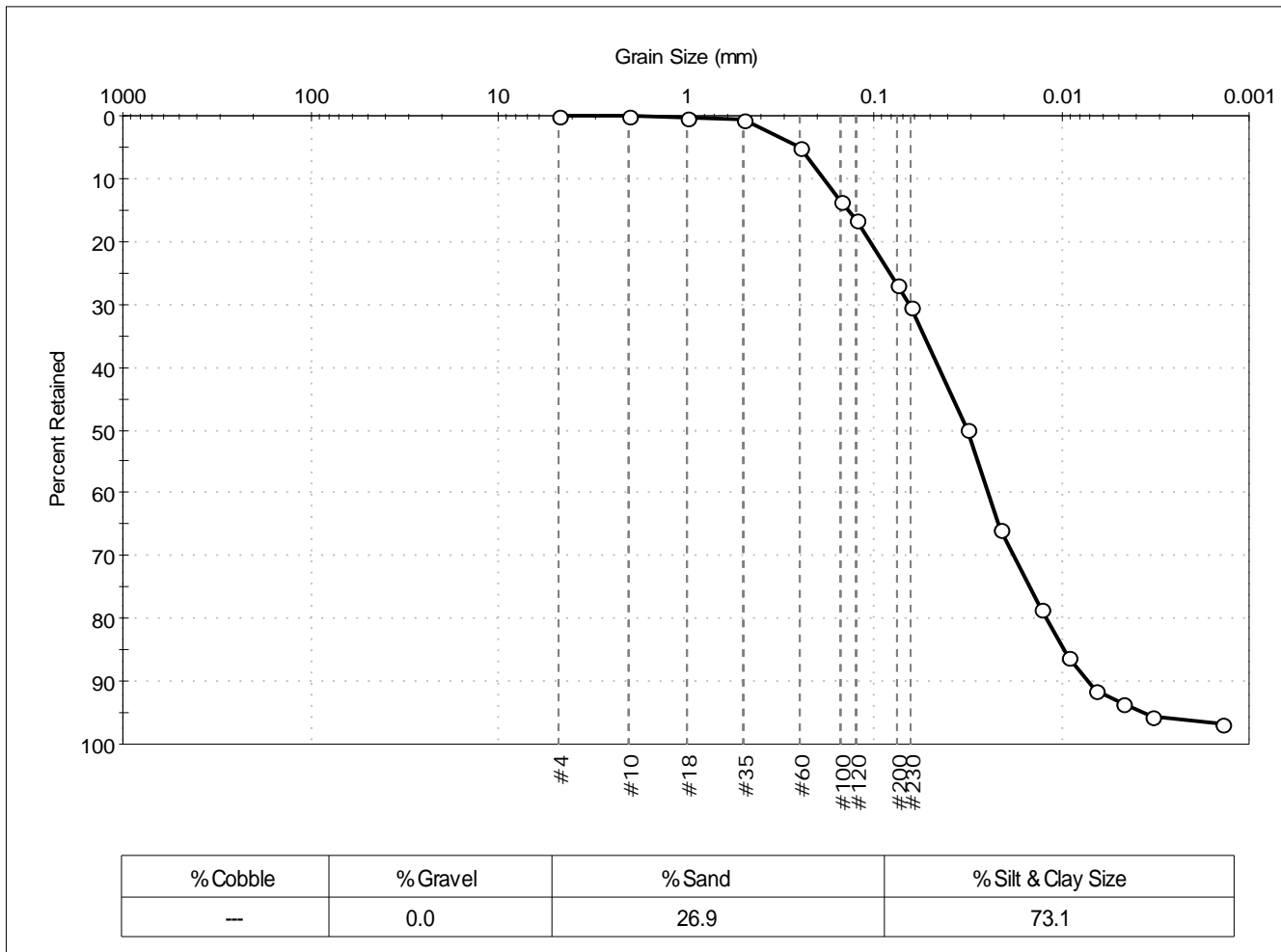
| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |





|  |                             |                           |                        |
|--|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                    | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 211-14LTM                                   | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0324DUP                               | Test Date: 11/04/14         | Checked By: jdt           |                        |
| Depth: ---   | Test Id: 310538             |                           |                        |
| Test Comment: ---                                      |                             |                           |                        |
| Sample Description: Wet, very dark gray silt with sand |                             |                           |                        |
| Sample Comment: ---                                    |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 0            |               |          |
| #18        | 1.00               | 0            |               |          |
| #35        | 0.50               | 1            |               |          |
| #60        | 0.25               | 5            |               |          |
| #100       | 0.15               | 14           |               |          |
| #120       | 0.12               | 17           |               |          |
| #200       | 0.075              | 27           |               |          |
| #230       | 0.063              | 31           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0316             | 50           |               |          |
| ---        | 0.0214             | 66           |               |          |
| ---        | 0.0128             | 79           |               |          |
| ---        | 0.0092             | 86           |               |          |
| ---        | 0.0066             | 91           |               |          |
| ---        | 0.0047             | 94           |               |          |
| ---        | 0.0033             | 96           |               |          |
| ---        | 0.0014             | 97           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.1383 mm | D <sub>30</sub> = 0.0180 mm |
| D <sub>60</sub> = 0.0449 mm | D <sub>15</sub> = 0.0097 mm |
| D <sub>50</sub> = 0.0314 mm | D <sub>10</sub> = 0.0072 mm |
| C <sub>u</sub> = 6.236      | C <sub>c</sub> = 1.002      |

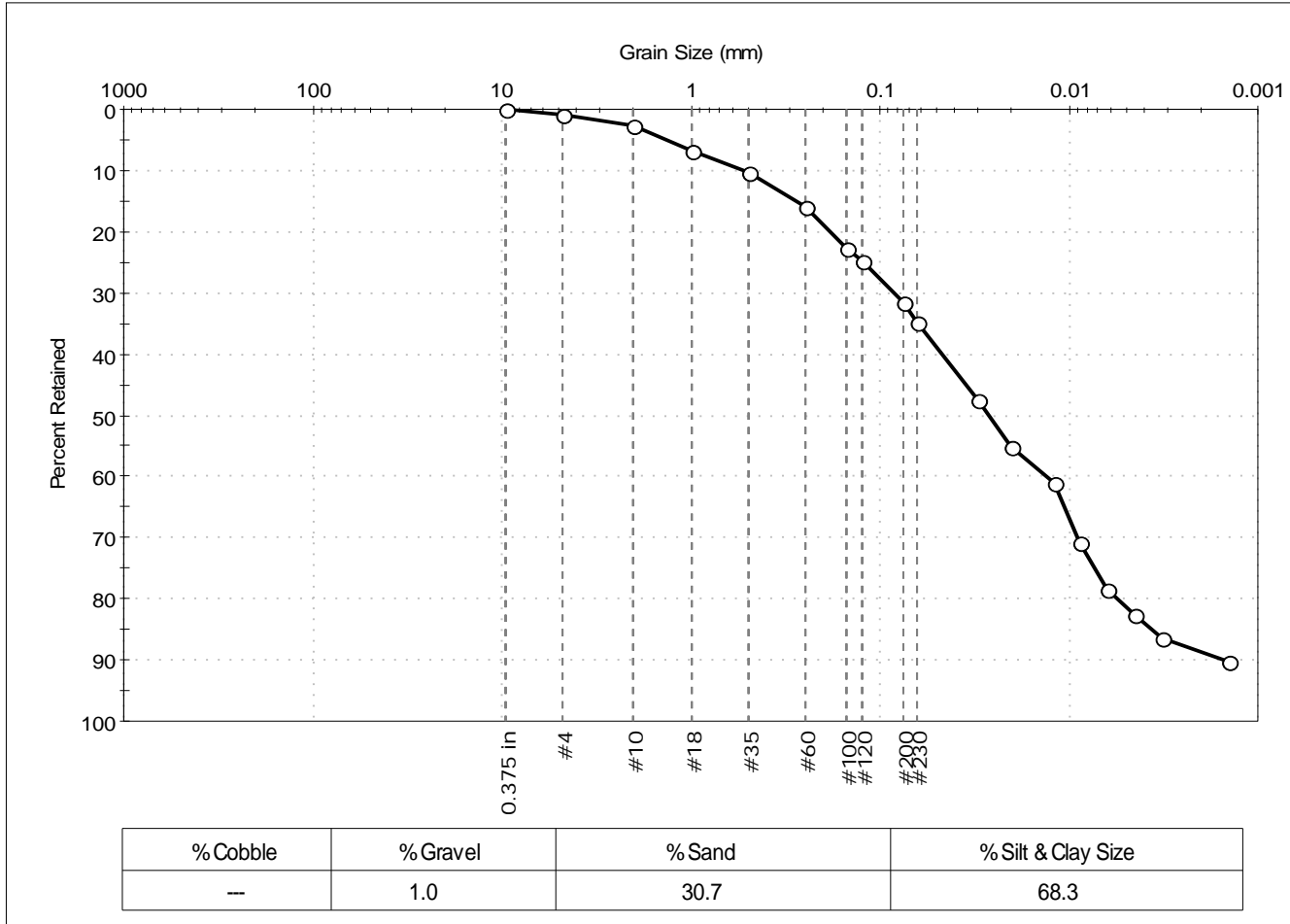
| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 211-14LTM                                | Sample Type: bag            | Tested By: jbr            | Checked By: jdt        |
| Sample ID: NBH14-0325                               | Test Date: 11/03/14         | Test Id: 310539           |                        |
| Depth: ---  |                             |                           |                        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 1            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 16           |               |          |
| #100       | 0.15               | 23           |               |          |
| #120       | 0.12               | 25           |               |          |
| #200       | 0.075              | 32           |               |          |
| #230       | 0.063              | 35           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0303             | 47           |               |          |
| ---        | 0.0204             | 55           |               |          |
| ---        | 0.0120             | 61           |               |          |
| ---        | 0.0088             | 71           |               |          |
| ---        | 0.0063             | 79           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 86           |               |          |
| ---        | 0.0014             | 90           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.2809 mm | D <sub>30</sub> = 0.0090 mm |
| D <sub>60</sub> = 0.0468 mm | D <sub>15</sub> = 0.0036 mm |
| D <sub>50</sub> = 0.0266 mm | D <sub>10</sub> = 0.0015 mm |
| C <sub>u</sub> = 31.200     | C <sub>c</sub> = 1.154      |

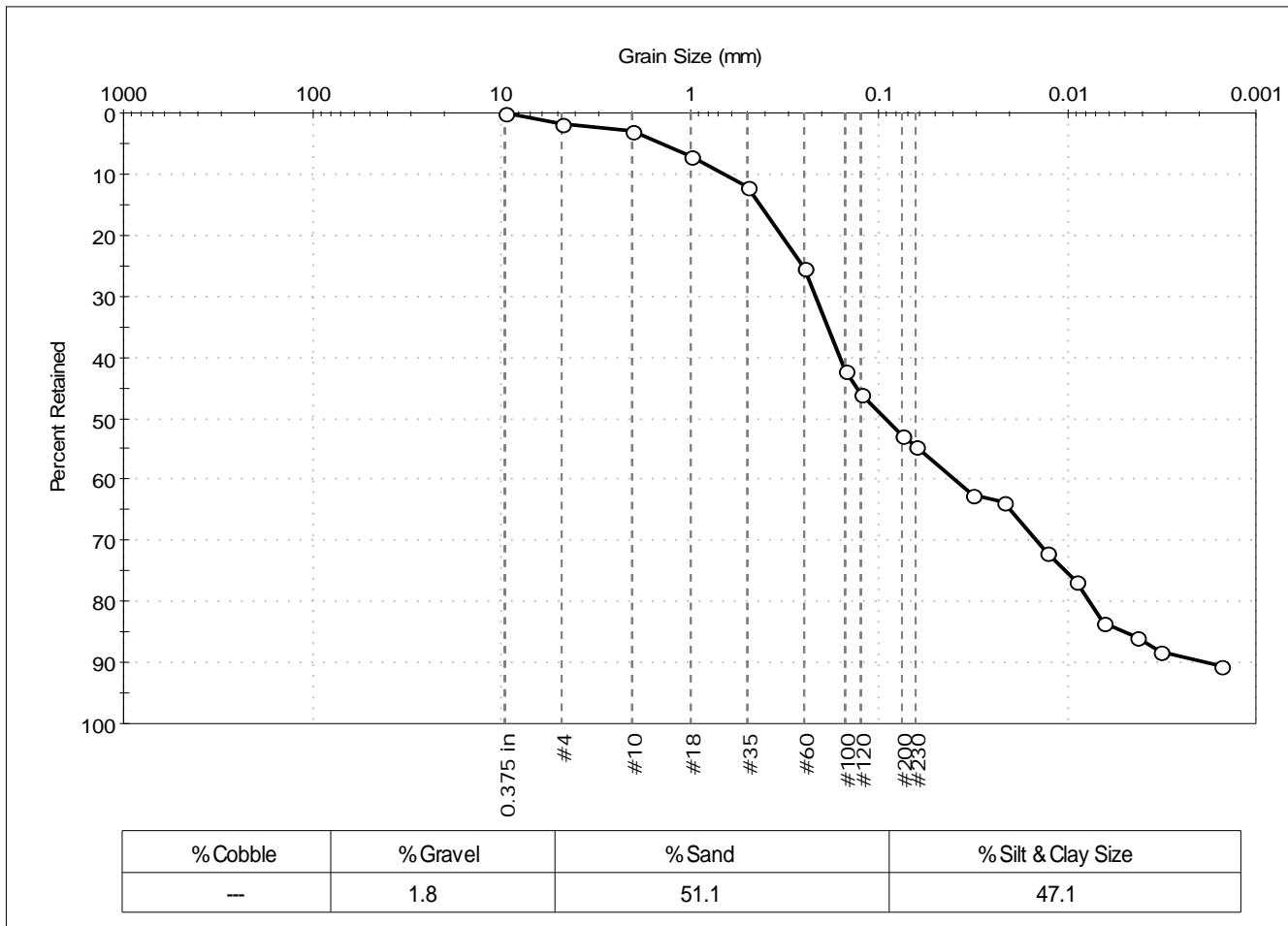
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                        |
|---|------------------------|
| Client: Battelle Memorial Institute                 | Project No: GTX-302366 |
| Project: New Bedford Harbor                         |                        |
| Location: New Bedford, MA                           |                        |
| Boring ID: 204-14LTM                                | Sample Type: bag       |
| Sample ID: NBH14-0326                               | Test Date: 11/03/14    |
| Depth: ---  | Test Id: 310540        |
| Test Comment: ---                                   | Tested By: jbr         |
| Sample Description: Wet, dark olive gray silty sand | Checked By: jdt        |
| Sample Comment: ---                                 |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 3            |               |          |
| #18        | 1.00               | 7            |               |          |
| #35        | 0.50               | 12           |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 42           |               |          |
| #120       | 0.12               | 46           |               |          |
| #200       | 0.075              | 53           |               |          |
| #230       | 0.063              | 55           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0317             | 63           |               |          |
| ---        | 0.0217             | 64           |               |          |
| ---        | 0.0127             | 72           |               |          |
| ---        | 0.0090             | 77           |               |          |
| ---        | 0.0065             | 84           |               |          |
| ---        | 0.0043             | 86           |               |          |
| ---        | 0.0032             | 88           |               |          |
| ---        | 0.0015             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4287 mm | D <sub>30</sub> = 0.0144 mm |
| D <sub>60</sub> = 0.1607 mm | D <sub>15</sub> = 0.0051 mm |
| D <sub>50</sub> = 0.0928 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 84.579     | C <sub>c</sub> = 0.679      |

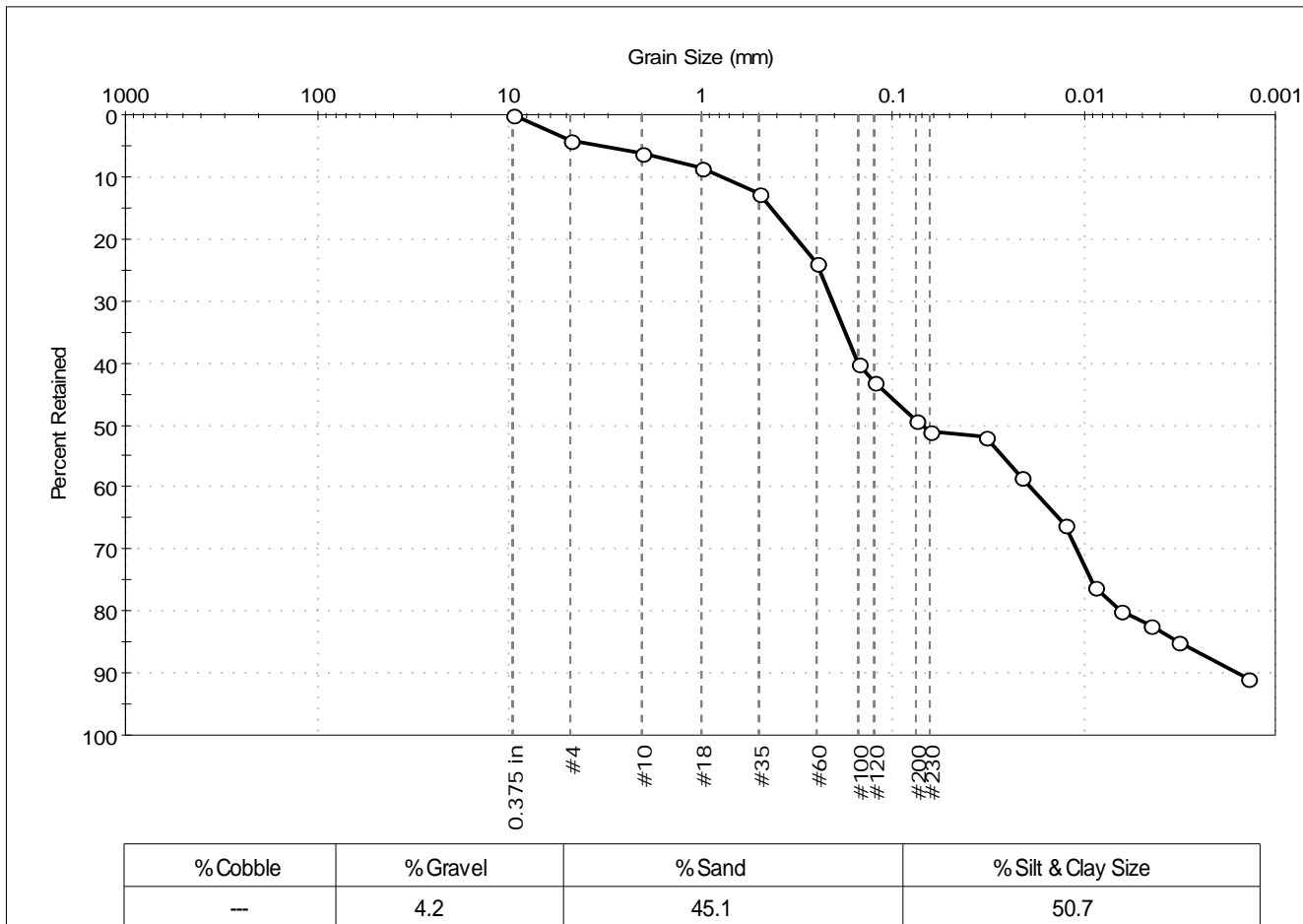
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|   |                             |                           |                        |
|---|-----------------------------|---------------------------|------------------------|
| Client: Battelle Memorial Institute                 | Project: New Bedford Harbor | Location: New Bedford, MA | Project No: GTX-302366 |
| Boring ID: 204-14LTM                                | Sample Type: bag            | Tested By: jbr            |                        |
| Sample ID: NBH14-0327                               | Test Date: 11/18/14         | Checked By: jdt           |                        |
| Depth: ---  | Test Id: 310541             |                           |                        |
| Test Comment: ---                                   |                             |                           |                        |
| Sample Description: Wet, dark olive gray sandy silt |                             |                           |                        |
| Sample Comment: ---                                 |                             |                           |                        |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 4            |               |          |
| #10        | 2.00               | 6            |               |          |
| #18        | 1.00               | 9            |               |          |
| #35        | 0.50               | 13           |               |          |
| #60        | 0.25               | 24           |               |          |
| #100       | 0.15               | 40           |               |          |
| #120       | 0.12               | 43           |               |          |
| #200       | 0.075              | 49           |               |          |
| #230       | 0.063              | 51           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0326             | 52           |               |          |
| ---        | 0.0210             | 58           |               |          |
| ---        | 0.0124             | 66           |               |          |
| ---        | 0.0088             | 76           |               |          |
| ---        | 0.0064             | 80           |               |          |
| ---        | 0.0045             | 82           |               |          |
| ---        | 0.0032             | 85           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.4314 mm | D <sub>30</sub> = 0.0108 mm |
| D <sub>60</sub> = 0.1502 mm | D <sub>15</sub> = 0.0032 mm |
| D <sub>50</sub> = 0.0699 mm | D <sub>10</sub> = 0.0016 mm |
| C <sub>u</sub> = 93.875     | C <sub>c</sub> = 0.485      |

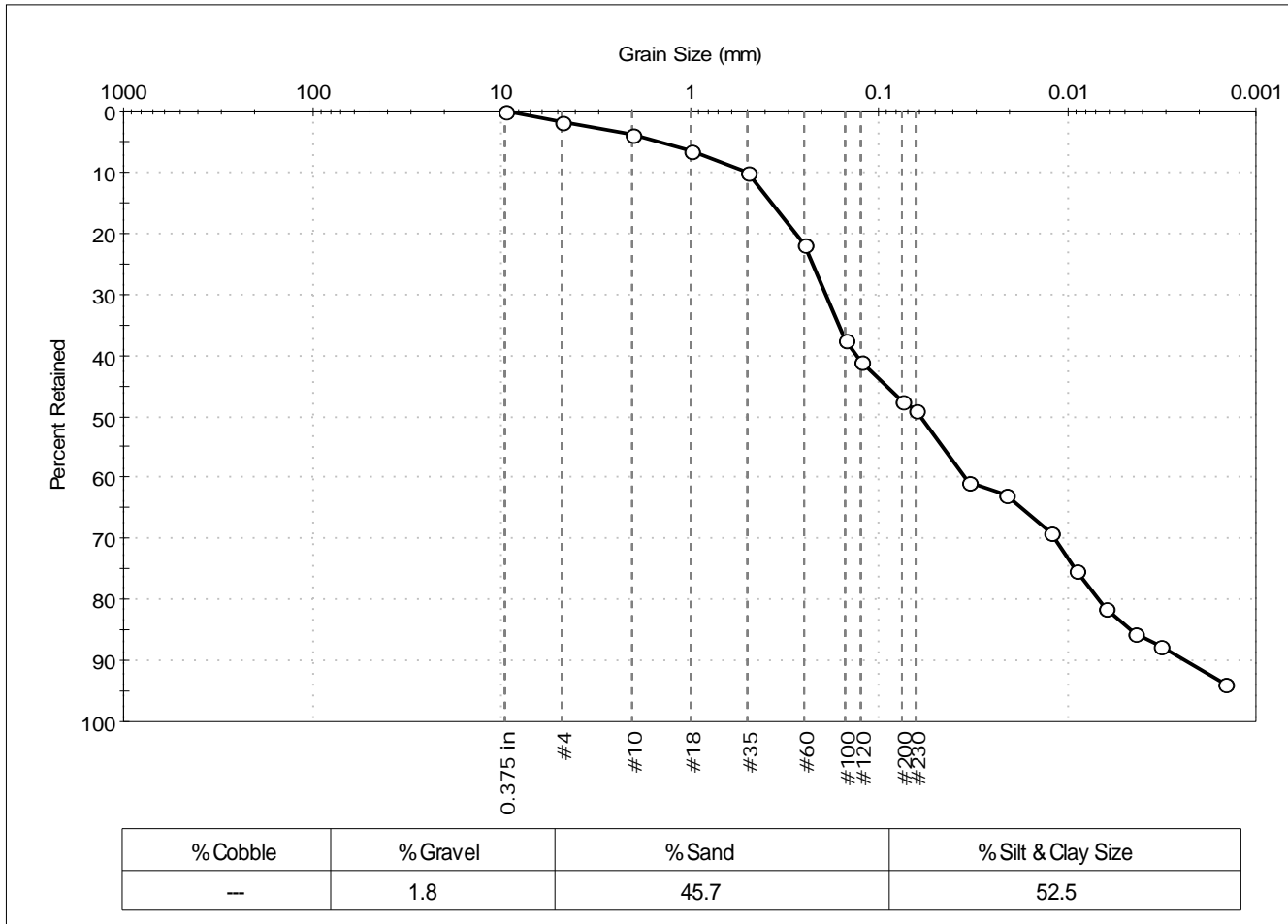
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : <b>ROUNDED</b>  |
| Sand/Gravel Hardness : <b>HARD</b>           |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                     |                                 |              |            |
|---------------------|---------------------------------|--------------|------------|
| Client:             | Battelle Memorial Institute     |              |            |
| Project:            | New Bedford Harbor              |              |            |
| Location:           | New Bedford, MA                 | Project No:  | GTX-302366 |
| Boring ID:          | 204-14LTM                       | Sample Type: | bag        |
| Sample ID:          | NBH14-0328                      | Test Date:   | 11/18/14   |
| Depth:              | ---                             | Test Id:     | 310546     |
| Test Comment:       | ---                             |              |            |
| Sample Description: | Wet, dark olive gray sandy silt |              |            |
| Sample Comment:     | ---                             |              |            |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| 0.375 in   | 9.50               | 0            |               |          |
| #4         | 4.75               | 2            |               |          |
| #10        | 2.00               | 4            |               |          |
| #18        | 1.00               | 6            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 22           |               |          |
| #100       | 0.15               | 38           |               |          |
| #120       | 0.12               | 41           |               |          |
| #200       | 0.075              | 48           |               |          |
| #230       | 0.063              | 49           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0333             | 61           |               |          |
| ---        | 0.0210             | 63           |               |          |
| ---        | 0.0123             | 69           |               |          |
| ---        | 0.0090             | 75           |               |          |
| ---        | 0.0063             | 81           |               |          |
| ---        | 0.0044             | 86           |               |          |
| ---        | 0.0032             | 88           |               |          |
| ---        | 0.0015             | 94           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3714 mm | D <sub>30</sub> = 0.0116 mm |
| D <sub>60</sub> = 0.1311 mm | D <sub>15</sub> = 0.0046 mm |
| D <sub>50</sub> = 0.0599 mm | D <sub>10</sub> = 0.0024 mm |
| C <sub>u</sub> = 54.625     | C <sub>c</sub> = 0.428      |

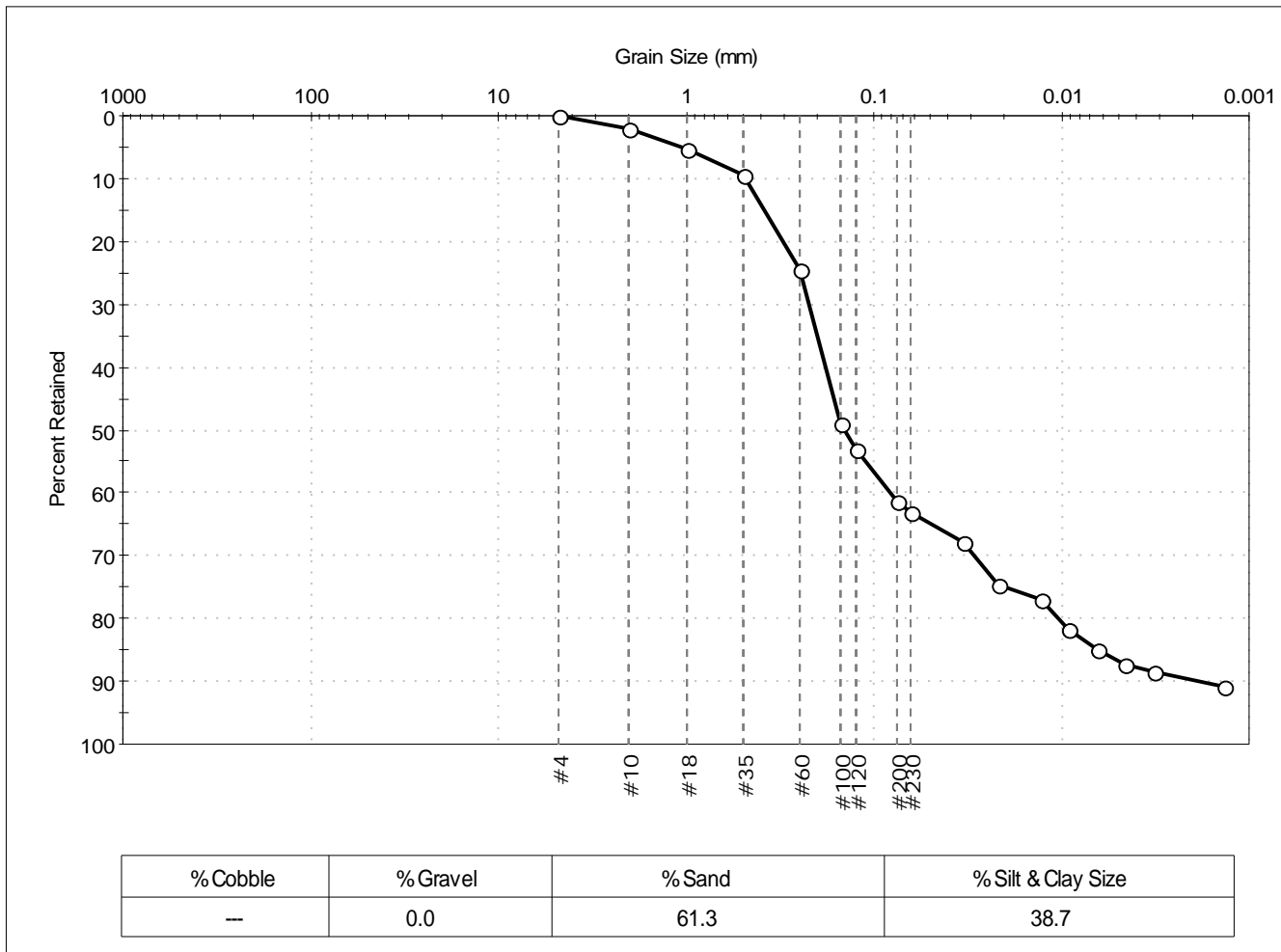
| <u>Classification</u>        |     |
|------------------------------|-----|
| ASTM                         | N/A |
| AASHTO Silty Soils (A-4 (0)) |     |

| <u>Sample/Test Description</u>               |
|--|
| Sand/Gravel Particle Shape : ---             |
| Sand/Gravel Hardness : ---                   |
| Dispersion Device : Apparatus A - Mech Mixer |
| Dispersion Period : 1 minute                 |
| Specific Gravity : 2.65                      |
| Separation of Sample: #230 Sieve             |



|                                     |                             |  |                        |
|-------------------------------------|-----------------------------|--|------------------------|
| Client: Battelle Memorial Institute | Project: New Bedford Harbor | Location: New Bedford, MA                          | Project No: GTX-302366 |
| Boring ID: 204-14LTM                | Sample Type: bag            | Tested By: jbr                                     | Checked By: jdt        |
| Sample ID: NBH14-0329               | Test Date: 10/27/14         | Test Id: 310547                                    |                        |
| Depth: ---                          | Test Comment: ---           | Sample Description: Wet, very dark gray silty sand | Sample Comment: ---    |

## Particle Size Analysis - ASTM D422



| Sieve Name | Sieve Size, mm     | Pct Retained | Spec. Percent | Complies |
|------------|--------------------|--------------|---------------|----------|
| #4         | 4.75               | 0            |               |          |
| #10        | 2.00               | 2            |               |          |
| #18        | 1.00               | 5            |               |          |
| #35        | 0.50               | 10           |               |          |
| #60        | 0.25               | 25           |               |          |
| #100       | 0.15               | 49           |               |          |
| #120       | 0.12               | 53           |               |          |
| #200       | 0.075              | 61           |               |          |
| #230       | 0.063              | 63           |               |          |
| ---        | Particle Size (mm) | Pct Retained | Spec. Percent | Complies |
| ---        | 0.0336             | 68           |               |          |
| ---        | 0.0218             | 75           |               |          |
| ---        | 0.0127             | 77           |               |          |
| ---        | 0.0091             | 82           |               |          |
| ---        | 0.0065             | 85           |               |          |
| ---        | 0.0046             | 87           |               |          |
| ---        | 0.0033             | 89           |               |          |
| ---        | 0.0014             | 91           |               |          |

| <u>Coefficients</u>         |                             |
|-----------------------------|-----------------------------|
| D <sub>85</sub> = 0.3886 mm | D <sub>30</sub> = 0.0294 mm |
| D <sub>60</sub> = 0.1806 mm | D <sub>15</sub> = 0.0065 mm |
| D <sub>50</sub> = 0.1429 mm | D <sub>10</sub> = 0.0019 mm |
| C <sub>u</sub> = 95.053     | C <sub>c</sub> = 2.519      |

| <u>Classification</u> |                       |
|-----------------------|-----------------------|
| <u>ASTM</u>           | N/A                   |
| <u>AASHTO</u>         | Silty Soils (A-4 (0)) |

| <u>Sample/Test Description</u>               |  |
|--|--|
| Sand/Gravel Particle Shape : ---             |  |
| Sand/Gravel Hardness : ---                   |  |
| Dispersion Device : Apparatus A - Mech Mixer |  |
| Dispersion Period : 1 minute                 |  |
| Specific Gravity : 2.65                      |  |
| Separation of Sample: #230 Sieve             |  |



**Appendix D**  
Total Organic Carbon Laboratory Data Report



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L1422692   |
| Client:         | Geo Testing Express<br>125 Nagog Park<br>Acton, MA 01720 |
| ATTN:           | Joe Tomei  |
| Phone:          | (978) 893-1241   |
| Project Name:   | NEW BEDFORD HARBOR LTM VI                                |
| Project Number: | * 7;   |
| Report Date:    | 10/16/14   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



Project Name: NEW BEDFORD HARBOR LTM VI

Lab Number: L1422692

Project Number: \* 7;

Report Date: 10/16/14

| Alpha Sample ID | Client ID  | Matrix   | Sample Location | Collection Date/Time | Receive Date |
|-----------------|------------|----------|-----------------|----------------------|--------------|
| L1422692-01     | NBH14-0001 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 15:24       | 09/26/14     |
| L1422692-02     | NBH14-0005 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 14:24       | 09/26/14     |
| L1422692-03     | NBH14-0009 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 11:16       | 09/26/14     |
| L1422692-04     | NBH14-0013 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 12:08       | 09/26/14     |
| L1422692-05     | NBH14-0017 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 08:13       | 09/26/14     |
| L1422692-06     | NBH14-0021 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 11:38       | 09/26/14     |
| L1422692-07     | NBH14-0025 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 09:37       | 09/26/14     |
| L1422692-08     | NBH14-0029 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 10:40       | 09/26/14     |
| L1422692-09     | NBH14-0033 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 15:25       | 09/26/14     |
| L1422692-10     | NBH14-0037 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 14:03       | 09/26/14     |
| L1422692-11     | NBH14-0041 | SEDIMENT | NEW BEDFORD, MA | 09/22/14 13:06       | 09/26/14     |
| L1422692-12     | NBH14-0045 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 15:43       | 09/26/14     |
| L1422692-13     | NBH14-0049 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 14:57       | 09/26/14     |
| L1422692-14     | NBH14-0053 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 13:53       | 09/26/14     |
| L1422692-15     | NBH14-0061 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 10:12       | 09/26/14     |
| L1422692-16     | NBH14-0065 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 09:09       | 09/26/14     |
| L1422692-17     | NBH14-0073 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 14:27       | 09/26/14     |
| L1422692-18     | NBH14-0077 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 13:39       | 09/26/14     |
| L1422692-19     | NBH14-0081 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 12:26       | 09/26/14     |
| L1422692-20     | NBH14-0085 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 11:29       | 09/26/14     |
| L1422692-21     | NBH14-0089 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 10:32       | 09/26/14     |
| L1422692-22     | NBH14-0093 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 09:53       | 09/26/14     |
| L1422692-23     | NBH14-0097 | SEDIMENT | NEW BEDFORD, MA | 09/23/14 08:57       | 09/26/14     |

D-2

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** \* 7;

**Lab Number:** L1422692  
**Report Date:** 10/16/14

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

---

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** \* 7;

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**Case Narrative (continued)**

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Elizabeth Porta

Title: Technical Director/Representative

Date: 10/16/14

# **INORGANICS & MISCELLANEOUS**



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

Lab ID: L1422692-01  
 Client ID: NBH14-0001  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Sediment

Date Collected: 09/22/14 15:24  
 Date Received: 09/26/14  
 Field Prep: Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 8.09   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 8.66   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-02  
**Client ID:** NBH14-0005  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 14:24  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.08   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 6.01   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-03  
**Client ID:** NBH14-0009  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 11:16  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.16   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.80   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-04  
**Client ID:** NBH14-0013  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 12:08  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.26   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 6.14   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-05  
**Client ID:** NBH14-0017  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 08:13  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.74   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.05   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-06  
**Client ID:** NBH14-0021  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 11:38  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.391  |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 0.356  |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |





**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-07  
**Client ID:** NBH14-0025  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 09:37  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.953  |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 0.806  |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

Lab ID: L1422692-08  
 Client ID: NBH14-0029  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Sediment

Date Collected: 09/22/14 10:40  
 Date Received: 09/26/14  
 Field Prep: Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.36   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 2.32   |           | %     | 0.010 | --  | 1               | -             | 10/09/14 18:37 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

Lab ID: L1422692-09  
 Client ID: NBH14-0033  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Sediment

Date Collected: 09/22/14 15:25  
 Date Received: 09/26/14  
 Field Prep: Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.44   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 3.54   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-10  
**Client ID:** NBH14-0037  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 14:03  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.03   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.07   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-11  
**Client ID:** NBH14-0041  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/22/14 13:06  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.52   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.26   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

Lab ID: L1422692-12  
 Client ID: NBH14-0045  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Sediment

Date Collected: 09/23/14 15:43  
 Date Received: 09/26/14  
 Field Prep: Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.82   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.29   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |





**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-13  
**Client ID:** NBH14-0049  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 14:57  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.95   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 5.03   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-14  
**Client ID:** NBH14-0053  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 13:53  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.984  |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.09   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-15  
**Client ID:** NBH14-0061  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 10:12  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.09   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.03   |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

**Lab ID:** L1422692-16  
**Client ID:** NBH14-0065  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 09:09  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.299  |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 0.285  |           | %     | 0.010 | --  | 1               | -             | 10/10/14 20:08 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI**Lab Number:** L1422692**Project Number:** \* 7;**Report Date:** 10/16/14**SAMPLE RESULTS**

Lab ID: L1422692-17  
 Client ID: NBH14-0073  
 Sample Location: NEW BEDFORD, MA  
 Matrix: Sediment

Date Collected: 09/23/14 14:27  
 Date Received: 09/26/14  
 Field Prep: Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.08   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.08   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-18  
**Client ID:** NBH14-0077  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 13:39  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.34   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.34   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-19  
**Client ID:** NBH14-0081  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 12:26  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.223  |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 0.202  |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-20  
**Client ID:** NBH14-0085  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 11:29  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.40   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.46   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-21  
**Client ID:** NBH14-0089  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 10:32  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.774  |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 0.713  |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-22  
**Client ID:** NBH14-0093  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 09:53  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.63   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 3.35   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**SAMPLE RESULTS**

**Lab ID:** L1422692-23  
**Client ID:** NBH14-0097  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Sediment

**Date Collected:** 09/23/14 08:57  
**Date Received:** 09/26/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.47   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.59   |           | %     | 0.010 | --  | 1               | -             | 10/13/14 16:20 | 1,9060            | LC      |



Project Name: NEW BEDFORD HARBOR LTM VI

Lab Number: L1422692

Project Number: GTX-302366

Report Date: 10/16/14

**Method Blank Analysis**  
**Batch Quality Control**

| Parameter  | Result | Qualifier | Units | RL    | MDL | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytical<br>Method | Analyst |
|--|--------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 17-23 Batch: WG731306-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/13/14 16:20   | 1,9060               | LC      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/13/14 16:20   | 1,9060               | LC      |
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 09-16 Batch: WG731309-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/10/14 20:08   | 1,9060               | LC      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/10/14 20:08   | 1,9060               | LC      |
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 01-08 Batch: WG731314-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/09/14 18:37   | 1,9060               | LC      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/09/14 18:37   | 1,9060               | LC      |



### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

| Parameter  | Native Sample | MS Added | MS Found | MS %Recovery | MSD Qual | MSD Found | MSD %Recovery | MSD Qual | Recovery Limits | RPD | RPD Qual | RPD Limits |
|--|---------------|----------|----------|--------------|----------|-----------|---------------|----------|-----------------|-----|----------|------------|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 17-23    QC Batch ID: WG731306-4    QC Sample: L1422692-18    Client ID: NBH14-0077 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 1.34          | 1.64     | 3.07     | 105          | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon (Rep2)  | 1.34          | 1.34     | 2.68     | 100          | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 09-16    QC Batch ID: WG731309-4    QC Sample: L1422692-09    Client ID: NBH14-0033 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 3.44          | 1.96     | 5.51     | 106          | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon (Rep2)  | 3.54          | 2.25     | 5.81     | 101          | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-08    QC Batch ID: WG731314-4    QC Sample: L1422692-01    Client ID: NBH14-0001 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 8.09          | 1.08     | 9.14     | 97           | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon (Rep2)  | 8.66          | 1.07     | 9.57     | 85           | -        | -         | -             | -        | 75-125          | -   | -        | 25         |

## Lab Duplicate Analysis

Batch Quality Control

Project Name: NEW BEDFORD HARBOR LTM VI

Project Number: GTX-302366

Lab Number: L1422692

Report Date: 10/16/14

| Parameter   | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 17-23 QC Batch ID: WG731306-3 QC Sample: L1422692-18 Client ID: NBH14-0077 |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 1.34          | 1.35             | %     | 1   |      | 25         |
| Total Organic Carbon (Rep2)   | 1.34          | 1.23             | %     | 9   |      | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 09-16 QC Batch ID: WG731309-3 QC Sample: L1422692-09 Client ID: NBH14-0033 |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 3.44          | 3.53             | %     | 3   |      | 25         |
| Total Organic Carbon (Rep2)   | 3.54          | 3.53             | %     | 0   |      | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-08 QC Batch ID: WG731314-3 QC Sample: L1422692-01 Client ID: NBH14-0001 |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 8.09          | 8.04             | %     | 1   |      | 25         |
| Total Organic Carbon (Rep2)   | 8.66          | 8.22             | %     | 5   |      | 25         |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG731306-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 106               |             | 75-125             |
| Total Organic Carbon (Rep2) | 119               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG731309-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 105               |             | 75-125             |
| Total Organic Carbon (Rep2) | 100               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG731314-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 86                |             | 75-125             |
| Total Organic Carbon (Rep2) | 100               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

| Container ID | Container Type          | Cooler | pH  | Temp deg C | Pres | Seal   | Analysis(*)           |
|--------------|-------------------------|--------|-----|------------|------|--------|-----------------------|
| L1422692-01A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-02A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-03A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-04A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-05A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-06A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-07A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-08A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-09A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-10A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-11A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-12A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-13A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-14A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-15A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-16A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-17A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-18A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-19A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-20A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-21A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-22A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1422692-23A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

## GLOSSARY

### Acronyms

|      |  |
|------|--|
| EDL  | -Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).                        |
| EPA  | -Environmental Protection Agency.  |
| LCS  | -Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.   |
| LCSD | -Laboratory Control Sample Duplicate: Refer to LCS.  |
| LFB  | -Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.  |
| MDL  | -Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.   |
| MS   | -Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.  |
| MSD  | -Matrix Spike Sample Duplicate: Refer to MS.   |
| NA   | -Not Applicable.   |
| NC   | -Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.  |
| NI   | -Not Ignitable.  |
| RL   | -Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.  |
| RPD  | -Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM  | -Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.  |

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

Report Format: Data Usability Report





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

#### Data Qualifiers

- G** -The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** -The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** -The lower value for the two columns has been reported due to obvious interference.
- M** -Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** -Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** -The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** -The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** -Analytical results are from sample re-analysis.
- RE** -Analytical results are from sample re-extraction.
- S** -Analytical results are from modified screening analysis.
- J** -Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** -Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1422692  
**Report Date:** 10/16/14

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

Last revised April 15, 2014

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**The following analytes are not included in our NELAP Scope of Accreditation:**

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

### Mansfield Facility

**EPA 8270D:** Biphenyl.

**EPA 2540D:** TSS

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:**

### Drinking Water

**EPA 200.8:** Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

### Non-Potable Water

**EPA 200.8:** Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

**EPA 200.7:** Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;

**EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC,**

**SM426C, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.

**Battelle** Chain of Custody  
The Business of Innovation

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-8797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 16:24 | NBH14-0001 |           | SED    | 120-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 |           | SED    | 125-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 |           | SED    | 130-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 |           | SED    | 134-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 |           | SED    | 150-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 11:38 | NBH14-0021 |           | SED    | 253-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 |           | SED    | 216-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 |           | SED    | 220-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 |           | SED    | 235-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 |           | SED    | 240-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/22/2014 | 13:06 | NBH14-0041 |           | SED    | 245-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 |           | SED    | 148-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 |           | SED    | 140-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 |           | SED    | 202-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 |           | SED    | 147-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 |           | SED    | 135-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 |           | SED    | 333-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 13:39 | NBH14-0077 |           | SED    | 339-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 |           | SED    | 346-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 |           | SED    | 340-14LTM |  |      | 1   | X    |            |      |                             |                                |

Relinquished By (name/date/time):

Received By (name/date/time):

*Jessica Tenzar* 9/25/14 1500

rel *John* 9/21/14 0100  
1 of 2<sup>D-40</sup>  
monitored lab 9/21/14 0100

*Ken [Signature]* 9/26/14 10:10

**Battelle**  
The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 |           | SED    | 341-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 |           | SED    | 334-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 |           | SED    | 335-14LTM |  |      | 1   | X    |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

Received By (name/date/time):

*Jessica Tenzar* 9/25/14 1500 with 9/27/14 0400 <sup>2 of 2</sup> D-41 *manipulated lab* 9/27/14 0400

*Kim Clark* APL 9/25/14 10:16



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L1423076   |
| Client:         | Geo Testing Express<br>125 Nagog Park<br>Acton, MA 01720 |
| ATTN:           | Joe Tomei  |
| Phone:          | (978) 893-1241   |
| Project Name:   | NEW BEDFORD HARBOR LTM VI                                |
| Project Number: | GTX-302366   |
| Report Date:    | 10/22/14   |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b> | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|------------------|---------------|----------------------------|---------------------------------|---------------------|
| L1423076-01                | NBH14-0101       | SOIL          | NEW BEDFORD, MA            | 09/24/14 10:17                  | 09/30/14            |
| L1423076-02                | NBH14-0105       | SOIL          | NEW BEDFORD, MA            | 09/24/14 09:18                  | 09/30/14            |
| L1423076-03                | NBH14-0109       | SOIL          | NEW BEDFORD, MA            | 09/24/14 10:56                  | 09/30/14            |
| L1423076-04                | NBH14-0113       | SOIL          | NEW BEDFORD, MA            | 09/24/14 12:10                  | 09/30/14            |
| L1423076-05                | NBH14-0117       | SOIL          | NEW BEDFORD, MA            | 09/24/14 13:15                  | 09/30/14            |
| L1423076-06                | NBH14-0121       | SOIL          | NEW BEDFORD, MA            | 09/24/14 14:24                  | 09/30/14            |
| L1423076-07                | NBH14-0125       | SOIL          | NEW BEDFORD, MA            | 09/25/14 08:15                  | 09/30/14            |
| L1423076-08                | NBH14-0129       | SOIL          | NEW BEDFORD, MA            | 09/25/14 09:49                  | 09/30/14            |
| L1423076-09                | NBH14-0133       | SOIL          | NEW BEDFORD, MA            | 09/25/14 11:00                  | 09/30/14            |
| L1423076-10                | NBH14-0137       | SOIL          | NEW BEDFORD, MA            | 09/25/14 11:32                  | 09/30/14            |
| L1423076-11                | NBH14-0141       | SOIL          | NEW BEDFORD, MA            | 09/25/14 12:58                  | 09/30/14            |
| L1423076-12                | NBH14-0145       | SOIL          | NEW BEDFORD, MA            | 09/25/14 14:03                  | 09/30/14            |
| L1423076-13                | NBH14-0149       | SOIL          | NEW BEDFORD, MA            | 09/25/14 14:56                  | 09/30/14            |
| L1423076-14                | NBH14-0153       | SOIL          | NEW BEDFORD, MA            | 09/25/14 08:19                  | 09/30/14            |
| L1423076-15                | NBH14-0157       | SOIL          | NEW BEDFORD, MA            | 09/25/14 09:06                  | 09/30/14            |
| L1423076-16                | NBH14-0161       | SOIL          | NEW BEDFORD, MA            | 09/25/14 09:55                  | 09/30/14            |
| L1423076-17                | NBH14-0165       | SOIL          | NEW BEDFORD, MA            | 09/25/14 12:58                  | 09/30/14            |
| L1423076-18                | NBH14-0169       | SOIL          | NEW BEDFORD, MA            | 09/25/14 14:11                  | 09/30/14            |
| L1423076-19                | NBH14-0173       | SOIL          | NEW BEDFORD, MA            | 09/25/14 15:14                  | 09/30/14            |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

---

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**Case Narrative (continued)**

Total Organic Carbon

The L1423076-02 Sample Replicate RPD for Total Organic Carbon is outside the acceptance criteria of 30%. A double-burn re-analysis was performed with confirming results. The result is reported from the initial analysis only. The elevated RPD has been attributed to the non-homogeneous nature of the sample.

The L1423076-13 Sample Replicate RPD for Total Organic Carbon is outside the acceptance criteria of 30%. A double-burn re-analysis was performed with confirming results. The result is reported from the initial analysis only. The elevated RPD has been attributed to the non-homogeneous nature of the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Elizabeth Porta

Title: Technical Director/Representative

Date: 10/22/14

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-01  
**Client ID:** NBH14-0101  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 10:17  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.417  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.402  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-02  
**Client ID:** NBH14-0105  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 09:18  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.14   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.60   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-03  
**Client ID:** NBH14-0109  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 10:56  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.51   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.57   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-04  
**Client ID:** NBH14-0113  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 12:10  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.140  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.157  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-05  
**Client ID:** NBH14-0117  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 13:15  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.469  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.353  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-06  
**Client ID:** NBH14-0121  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 14:24  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.076  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.073  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-07  
**Client ID:** NBH14-0125  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 08:15  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.12   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.71   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-08  
**Client ID:** NBH14-0129  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 09:49  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.05   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.88   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-09  
**Client ID:** NBH14-0133  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 11:00  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.07   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.02   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-10  
**Client ID:** NBH14-0137  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 11:32  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.06   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 2.94   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-11  
**Client ID:** NBH14-0141  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 12:58  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.06   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.95   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-12  
**Client ID:** NBH14-0145  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 14:03  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.47   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.51   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-13  
**Client ID:** NBH14-0149  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 14:56  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.54   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.07   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-14  
**Client ID:** NBH14-0153  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 08:19  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.40   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.38   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-15  
**Client ID:** NBH14-0157  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 09:06  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 7.68   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 7.77   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-16  
**Client ID:** NBH14-0161  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 09:55  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 7.66   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 7.79   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-17  
**Client ID:** NBH14-0165  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 12:58  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.221  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.294  |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-18  
**Client ID:** NBH14-0169  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 14:11  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.76   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 4.51   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**SAMPLE RESULTS**

**Lab ID:** L1423076-19  
**Client ID:** NBH14-0173  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 15:14  
**Date Received:** 09/30/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.06   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 4.75   |           | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |



Project Name: NEW BEDFORD HARBOR LTM VI

Lab Number: L1423076

Project Number: GTX-302366

Report Date: 10/22/14

**Method Blank Analysis**  
Batch Quality Control

| Parameter   | Result Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|------------------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| Total Organic Carbon - Mansfield Lab for sample(s): 01-19 Batch: WG733403-1 |                  |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)   | ND               | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)   | ND               | %     | 0.010 | --  | 1               | -             | 10/20/14 18:26 | 1,9060            | CM      |

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

| Parameter   | Native Sample | MS Added | MS Found | MS %Recovery | MSD Qual | MSD Found | MSD %Recovery | MSD Qual | Recovery Limits | RPD | RPD Qual | RPD Limits |
|---|---------------|----------|----------|--------------|----------|-----------|---------------|----------|-----------------|-----|----------|------------|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG733403-4 QC Sample: L1423076-01 Client ID: NBH14-0101 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)   | 0.417         | 1.32     | 1.73     | 99           | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon (Rep2)   | 0.402         | 1.02     | 1.40     | 98           | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG733403-6 QC Sample: L1423076-10 Client ID: NBH14-0137 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)   | 3.06          | 0.55     | 3.48     | 76           | -        | -         | -             | -        | 75-125          | -   | -        | 25         |
| Total Organic Carbon (Rep2)   | 2.94          | 1.02     | 4.05     | 108          | -        | -         | -             | -        | 75-125          | -   | -        | 25         |

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR LTM VI

**Project Number:** GTX-302366

**Lab Number:** L1423076

**Report Date:** 10/22/14

| Parameter  | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|--|---------------|------------------|-------|-----|------|------------|
| <b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG733403-3 QC Sample: L1423076-01 Client ID: NBH14-0101</b> |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)  | 0.417         | 0.395            | %     | 5   |      | 25         |
| Total Organic Carbon (Rep2)  | 0.402         | 0.379            | %     | 6   |      | 25         |
| <b>Total Organic Carbon - Mansfield Lab Associated sample(s): 01-19 QC Batch ID: WG733403-5 QC Sample: L1423076-10 Client ID: NBH14-0137</b> |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)  | 3.06          | 3.12             | %     | 2   |      | 25         |
| Total Organic Carbon (Rep2)  | 2.94          | 2.90             | %     | 1   |      | 25         |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

**S.R.M. Standard Quality Control**

Standard Reference Material (SRM): WG733403-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 116               |             | 75-125             |
| Total Organic Carbon (Rep2) | 102               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

| Container ID | Container Type          | Cooler | pH  | Temp deg C | Pres | Seal   | Analysis(*)           |
|--------------|-------------------------|--------|-----|------------|------|--------|-----------------------|
| L1423076-01A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-02A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-03A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-04A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-05A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-06A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-07A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-08A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-09A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-10A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-11A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-12A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-13A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-14A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-15A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-16A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-17A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-18A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423076-19A | Glass 120ml unpreserved | A      | N/A | 3.6        | Y    | Absent | A2-TOC-9060-2REPS(28) |

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

## GLOSSARY

### Acronyms

|      |   |
|------|---|
| EDL  | - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).                        |
| EPA  | - Environmental Protection Agency.  |
| LCS  | - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.   |
| LCSD | - Laboratory Control Sample Duplicate: Refer to LCS.  |
| LFB  | - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.  |
| MDL  | - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.   |
| MS   | - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.  |
| MSD  | - Matrix Spike Sample Duplicate: Refer to MS.   |
| NA   | - Not Applicable.   |
| NC   | - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.  |
| NI   | - Not Ignitable.  |
| RL   | - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.  |
| RPD  | - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM  | - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.  |

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a "Total" result is defined as the summation of results for individual isomers or Aroclors. If a "Total" result is requested, the results of its individual components will also be reported. This is applicable to "Total" results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**Report Format:** Data Usability Report





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

#### Data Qualifiers

- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423076  
**Report Date:** 10/22/14

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

Last revised April 15, 2014

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**The following analytes are not included in our NELAP Scope of Accreditation:**

### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

### Mansfield Facility

**EPA 8270D:** Biphenyl.

**EPA 2540D:** TSS

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:**

### Drinking Water

**EPA 200.8:** Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

### Non-Potable Water

**EPA 200.8:** Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

**EPA 200.7:** Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;

**EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.

**Battelle**  
The Business of Innovation

## Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | 01        | SED    | 349-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | 02        | SED    | 352-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 03        | SED    | 345-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 04        | SED    | 318-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 05        | SED    | 311-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 06        | SED    | 306-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 07        | SED    | 221-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 08        | SED    | 249-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 09        | SED    | 317-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 10        | SED    | 309-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 11        | SED    | 310-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 12        | SED    | 304-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 13        | SED    | 250-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | 14        | SED    | 105-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | 15        | SED    | 109-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 16        | SED    | 115-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 17        | SED    | 154-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 18        | SED    | 139-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 19        | SED    | 131-14LTM |  |      | 1   | X    |            |      |                             |                                |

Relinquished By (name/date/time):

Received By (name/date/time):

*Jessica M Tenzar* 9/29/14 15:30  
*rel [signature]* 10/1/14 0400 rec'd man held lab 10/1/14 0400

1075

*[Signature]* 9/29/14 15:30



## ANALYTICAL REPORT

|                 |  |
|-----------------|--|
| Lab Number:     | L1423331   |
| Client:         | Geo Testing Express<br>125 Nagog Park<br>Acton, MA 01720 |
| ATTN:           | Joe Tomei  |
| Phone:          | (978) 893-1241   |
| Project Name:   | NEW BEDFORD HARBOR LTM VI                                |
| Project Number: | GTX-302366   |
| Report Date:    | 10/23/14   |

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Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

| Alpha Sample ID | Client ID  | Matrix | Sample Location | Collection Date/Time | Receive Date |
|-----------------|------------|--------|-----------------|----------------------|--------------|
| L1423331-01     | NBH14-0057 | SOIL   | NEW BEDFORD, MA | 09/30/14 10:09       | 10/02/14     |
| L1423331-02     | NBH14-0069 | SOIL   | NEW BEDFORD, MA | 09/30/14 10:25       | 10/02/14     |
| L1423331-03     | NBH14-0177 | SOIL   | NEW BEDFORD, MA | 09/26/14 07:39       | 10/02/14     |
| L1423331-04     | NBH14-0181 | SOIL   | NEW BEDFORD, MA | 09/26/14 08:36       | 10/02/14     |
| L1423331-05     | NBH14-0185 | SOIL   | NEW BEDFORD, MA | 09/26/14 09:50       | 10/02/14     |
| L1423331-06     | NBH14-0189 | SOIL   | NEW BEDFORD, MA | 09/26/14 11:00       | 10/02/14     |
| L1423331-07     | NBH14-0193 | SOIL   | NEW BEDFORD, MA | 09/26/14 12:49       | 10/02/14     |
| L1423331-08     | NBH14-0197 | SOIL   | NEW BEDFORD, MA | 09/26/14 13:38       | 10/02/14     |
| L1423331-09     | NBH14-0199 | SOIL   | NEW BEDFORD, MA | 09/26/14 14:24       | 10/02/14     |
| L1423331-10     | NBH14-0203 | SOIL   | NEW BEDFORD, MA | 09/26/14 15:17       | 10/02/14     |
| L1423331-11     | NBH14-0207 | SOIL   | NEW BEDFORD, MA | 09/26/14 14:32       | 10/02/14     |
| L1423331-12     | NBH14-0211 | SOIL   | NEW BEDFORD, MA | 09/26/14 13:36       | 10/02/14     |
| L1423331-13     | NBH14-0215 | SOIL   | NEW BEDFORD, MA | 09/26/14 08:21       | 10/02/14     |
| L1423331-14     | NBH14-0219 | SOIL   | NEW BEDFORD, MA | 09/26/14 08:50       | 10/02/14     |
| L1423331-15     | NBH14-0220 | SOIL   | NEW BEDFORD, MA | 09/26/14 09:24       | 10/02/14     |
| L1423331-16     | NBH14-0224 | SOIL   | NEW BEDFORD, MA | 09/26/14 10:54       | 10/02/14     |
| L1423331-17     | NBH14-0228 | SOIL   | NEW BEDFORD, MA | 09/26/14 11:50       | 10/02/14     |
| L1423331-18     | NBH14-0232 | SOIL   | NEW BEDFORD, MA | 09/25/14 14:16       | 10/02/14     |
| L1423331-19     | NBH14-0233 | SOIL   | NEW BEDFORD, MA | 09/26/14 08:56       | 10/02/14     |
| L1423331-20     | NBH14-0234 | SOIL   | NEW BEDFORD, MA | 09/24/14 14:40       | 10/02/14     |
| L1423331-21     | NBH14-0237 | SOIL   | NEW BEDFORD, MA | 09/29/14 15:14       | 10/02/14     |
| L1423331-22     | NBH14-0241 | SOIL   | NEW BEDFORD, MA | 09/29/14 15:54       | 10/02/14     |
| L1423331-23     | NBH14-0245 | SOIL   | NEW BEDFORD, MA | 09/29/14 08:06       | 10/02/14     |
| L1423331-24     | NBH14-0249 | SOIL   | NEW BEDFORD, MA | 09/29/14 09:06       | 10/02/14     |

| <b>Alpha<br/>Sample ID</b> | <b>Client ID</b> | <b>Matrix</b> | <b>Sample<br/>Location</b> | <b>Collection<br/>Date/Time</b> | <b>Receive Date</b> |
|----------------------------|------------------|---------------|----------------------------|---------------------------------|---------------------|
| L1423331-25                | NBH14-0253       | SOIL          | NEW BEDFORD, MA            | 09/29/14 10:01                  | 10/02/14            |
| L1423331-26                | NBH14-0257       | SOIL          | NEW BEDFORD, MA            | 09/29/14 12:47                  | 10/02/14            |
| L1423331-27                | NBH14-0261       | SOIL          | NEW BEDFORD, MA            | 09/29/14 14:39                  | 10/02/14            |
| L1423331-28                | NBH14-0265       | SOIL          | NEW BEDFORD, MA            | 09/29/14 15:26                  | 10/02/14            |
| L1423331-29                | NBH14-0269       | SOIL          | NEW BEDFORD, MA            | 09/29/14 08:13                  | 10/02/14            |
| L1423331-30                | NBH14-0273       | SOIL          | NEW BEDFORD, MA            | 09/29/14 09:08                  | 10/02/14            |
| L1423331-31                | NBH14-0277       | SOIL          | NEW BEDFORD, MA            | 09/29/14 09:52                  | 10/02/14            |
| L1423331-32                | NBH14-0281       | SOIL          | NEW BEDFORD, MA            | 09/29/14 10:45                  | 10/02/14            |
| L1423331-33                | NBH14-0285       | SOIL          | NEW BEDFORD, MA            | 09/29/14 11:15                  | 10/02/14            |
| L1423331-34                | NBH14-0289       | SOIL          | NEW BEDFORD, MA            | 09/29/14 12:27                  | 10/02/14            |
| L1423331-35                | NBH14-0302       | SOIL          | NEW BEDFORD, MA            | 09/30/14 08:00                  | 10/02/14            |
| L1423331-36                | NBH14-0306       | SOIL          | NEW BEDFORD, MA            | 09/30/14 09:02                  | 10/02/14            |
| L1423331-37                | NBH14-0310       | SOIL          | NEW BEDFORD, MA            | 09/30/14 09:59                  | 10/02/14            |
| L1423331-38                | NBH14-0314       | SOIL          | NEW BEDFORD, MA            | 09/30/14 11:47                  | 10/02/14            |
| L1423331-39                | NBH14-0318       | SOIL          | NEW BEDFORD, MA            | 09/30/14 12:41                  | 10/02/14            |
| L1423331-40                | NBH14-0322       | SOIL          | NEW BEDFORD, MA            | 09/30/14 13:44                  | 10/02/14            |
| L1423331-41                | NBH14-0326       | SOIL          | NEW BEDFORD, MA            | 09/30/14 14:36                  | 10/02/14            |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

---

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**Case Narrative (continued)**

Total Organic Carbon

The WG733445-6 MS recoveries, performed on L1423331-21, are outside the 75-125% acceptance criteria for Total Organic Carbon (Rep1 - 64%), possibly due to sample matrix. The associated SRM recoveries are within criteria indicating the sample batch was in control, and all sample results were accepted.

The WG733478-4 MS recoveries, performed on L1423331-03, are outside the 75-125% acceptance criteria for Total Organic Carbon (Rep1 - 137%) and Total Organic Carbon (Rep2 - 73%), possibly due to sample matrix. The associated SRM recoveries are within criteria indicating the sample batch was in control, and all sample results were accepted.

The WG733721-3 MS recoveries, performed on L1423331-33, are outside the 75-125% acceptance criteria for Total Organic Carbon (Rep2 - 136%), possibly due to sample matrix. The associated SRM recoveries are within criteria indicating the sample batch was in control, and all sample results were accepted.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Elizabeth Porta

Title: Technical Director/Representative

Date: 10/23/14

# **INORGANICS & MISCELLANEOUS**

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-01  
**Client ID:** NBH14-0057  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 10:09  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.08   |           | %     | 0.010 | --  | 1               | -             | 10/21/14 19:31 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.12   |           | %     | 0.010 | --  | 1               | -             | 10/21/14 19:31 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-02  
**Client ID:** NBH14-0069  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 10:25  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.736  |           | %     | 0.010 | --  | 1               | -             | 10/21/14 23:45 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.713  |           | %     | 0.010 | --  | 1               | -             | 10/21/14 23:45 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-03  
**Client ID:** NBH14-0177  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 07:39  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.08   |           | %     | 0.010 | --  | 1               | -             | 10/21/14 19:53 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.76   |           | %     | 0.010 | --  | 1               | -             | 10/21/14 19:53 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-04  
**Client ID:** NBH14-0181  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 08:36  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.54   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:35 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.68   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:35 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-05  
**Client ID:** NBH14-0185  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 09:50  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.66   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:45 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.43   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:45 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-06  
**Client ID:** NBH14-0189  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 11:00  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.58   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:56 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.66   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 09:56 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-07  
**Client ID:** NBH14-0193  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 12:49  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.41   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:02 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.60   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:02 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-08  
**Client ID:** NBH14-0197  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 13:38  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.90   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:13 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 4.09   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:13 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-09  
**Client ID:** NBH14-0199  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 14:24  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.95   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:55 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.47   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:55 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-10  
**Client ID:** NBH14-0203  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 15:17  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.13   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:06 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.46   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:06 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-11  
**Client ID:** NBH14-0207  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 14:32  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 7.01   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:11 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.77   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:11 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-12  
**Client ID:** NBH14-0211  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 13:36  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.42   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:27 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.52   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:27 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-13  
**Client ID:** NBH14-0215  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 08:21  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.72   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:33 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.30   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 11:33 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-14  
**Client ID:** NBH14-0219  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 08:50  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.98   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:17 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.76   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:17 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-15  
**Client ID:** NBH14-0220  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 09:24  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.04   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:28 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.22   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:28 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-16  
**Client ID:** NBH14-0224  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 10:54  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.622  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:50 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.557  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:50 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-17  
**Client ID:** NBH14-0228  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 11:50  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 8.91   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:50 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.94   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 12:50 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-18  
**Client ID:** NBH14-0232  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/25/14 14:16  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.37   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 14:07 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.06   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 14:07 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-19  
**Client ID:** NBH14-0233  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/26/14 08:56  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.26   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:29 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.32   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:29 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-20  
**Client ID:** NBH14-0234  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/24/14 14:40  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.068  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:39 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.066  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 13:39 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-21  
**Client ID:** NBH14-0237  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 15:14  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.73   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 4.08   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-22  
**Client ID:** NBH14-0241  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 15:54  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.00   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 4.23   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-23  
**Client ID:** NBH14-0245  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 08:06  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 6.27   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 6.26   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-24  
**Client ID:** NBH14-0249  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 09:06  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.53   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.45   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-25  
**Client ID:** NBH14-0253  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 10:01  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.65   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 5.51   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-26  
**Client ID:** NBH14-0257  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 12:47  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.639  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.539  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-27  
**Client ID:** NBH14-0261  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 14:39  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.09   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.859  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-28  
**Client ID:** NBH14-0265  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 15:26  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.00   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.99   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-29  
**Client ID:** NBH14-0269  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 08:13  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 0.369  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 0.323  |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-30  
**Client ID:** NBH14-0273  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 09:08  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.39   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.59   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-31  
**Client ID:** NBH14-0277  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 09:52  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.35   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 1.22   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-32  
**Client ID:** NBH14-0281  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 10:45  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.99   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |
| Total Organic Carbon (Rep2)                 | 3.05   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | CM      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-33  
**Client ID:** NBH14-0285  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 11:15  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.41   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.35   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-34  
**Client ID:** NBH14-0289  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/29/14 12:27  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.64   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.71   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-35  
**Client ID:** NBH14-0302  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 08:00  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.62   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 2.07   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-36  
**Client ID:** NBH14-0306  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 09:02  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 5.30   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.87   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-37  
**Client ID:** NBH14-0310  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 09:59  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 2.30   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 2.77   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-38  
**Client ID:** NBH14-0314  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 11:47  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 4.58   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 4.08   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-39  
**Client ID:** NBH14-0318  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 12:41  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.02   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 2.57   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |





**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-40  
**Client ID:** NBH14-0322  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 13:44  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 1.31   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 1.10   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**SAMPLE RESULTS**

**Lab ID:** L1423331-41  
**Client ID:** NBH14-0326  
**Sample Location:** NEW BEDFORD, MA  
**Matrix:** Soil

**Date Collected:** 09/30/14 14:36  
**Date Received:** 10/02/14  
**Field Prep:** Not Specified

| Parameter                                   | Result | Qualifier | Units | RL    | MDL | Dilution Factor | Date Prepared | Date Analyzed  | Analytical Method | Analyst |
|---|--------|-----------|-------|-------|-----|-----------------|---------------|----------------|-------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab</b> |        |           |       |       |     |                 |               |                |                   |         |
| Total Organic Carbon (Rep1)                 | 3.27   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |
| Total Organic Carbon (Rep2)                 | 2.47   |           | %     | 0.010 | --  | 1               | -             | 10/22/14 10:18 | 1,9060            | LC      |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

**Method Blank Analysis**  
**Batch Quality Control**

| Parameter  | Result | Qualifier | Units | RL    | MDL | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytical<br>Method | Analyst |
|--|--------|-----------|-------|-------|-----|--------------------|------------------|------------------|----------------------|---------|
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 21-32 Batch: WG733445-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/22/14 10:18   | 1,9060               | CM      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/22/14 10:18   | 1,9060               | CM      |
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 01-20 Batch: WG733478-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/21/14 18:20   | 1,9060               | CM      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/21/14 18:20   | 1,9060               | CM      |
| <b>Total Organic Carbon - Mansfield Lab for sample(s): 33-41 Batch: WG733721-1</b> |        |           |       |       |     |                    |                  |                  |                      |         |
| Total Organic Carbon (Rep1)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/22/14 10:18   | 1,9060               | LC      |
| Total Organic Carbon (Rep2)  | ND     |           | %     | 0.010 | --  | 1                  | -                | 10/22/14 10:18   | 1,9060               | LC      |

### Matrix Spike Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR LTM VI

**Lab Number:** L1423331

**Project Number:** GTX-302366

**Report Date:** 10/23/14

| Parameter  | Native Sample | MS Added | MS Found | MS %Recovery | MSD Qual | MSD Found | MSD %Recovery | MSD Qual | Recovery Limits | RPD | RPD Qual | RPD Limits |
|--|---------------|----------|----------|--------------|----------|-----------|---------------|----------|-----------------|-----|----------|------------|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 21-32    QC Batch ID: WG733445-4    QC Sample: L1424265-01    Client ID: MS Sample  |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 0.025         | 1.12     | 1.14     | 99           |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon (Rep2)  | 0.017         | 0.834    | 0.848    | 100          |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 21-32    QC Batch ID: WG733445-6    QC Sample: L1423331-21    Client ID: NBH14-0237 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 4.73          | 1.21     | 5.51     | 64           | Q        | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon (Rep2)  | 4.08          | 1.25     | 5.17     | 87           |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-20    QC Batch ID: WG733478-4    QC Sample: L1423331-03    Client ID: NBH14-0177 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 3.08          | 1.67     | 5.36     | 137          | Q        | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon (Rep2)  | 3.76          | 1        | 4.49     | 73           | Q        | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-20    QC Batch ID: WG733478-5    QC Sample: L1423331-20    Client ID: NBH14-0234 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 0.068         | 0.818    | 0.902    | 102          |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon (Rep2)  | 0.066         | 0.821    | 0.915    | 103          |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 33-41    QC Batch ID: WG733721-3    QC Sample: L1423331-33    Client ID: NBH14-0285 |               |          |          |              |          |           |               |          |                 |     |          |            |
| Total Organic Carbon (Rep1)  | 1.41          | 1.49     | 3.10     | 114          |          | -         | -             |          | 75-125          | -   |          | 25         |
| Total Organic Carbon (Rep2)  | 1.35          | 1.16     | 2.94     | 136          | Q        | -         | -             |          | 75-125          | -   |          | 25         |

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

| Parameter   | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Total Organic Carbon - Mansfield Lab Associated sample(s): 21-32 QC Batch ID: WG733445-3 QC Sample: L1424265-01 Client ID: DUP Sample |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 0.025         | 0.022            | %     | 13  |      | 25         |
| Total Organic Carbon (Rep2)   | 0.017         | 0.028            | %     | 49  | Q    | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 21-32 QC Batch ID: WG733445-5 QC Sample: L1423331-21 Client ID: NBH14-0237 |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 4.73          | 3.70             | %     | 24  |      | 25         |
| Total Organic Carbon (Rep2)   | 4.08          | 4.38             | %     | 7   |      | 25         |
| Total Organic Carbon - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG733478-3 QC Sample: L1423331-03 Client ID: NBH14-0177 |               |                  |       |     |      |            |
| Total Organic Carbon (Rep1)   | 3.08          | 3.13             | %     | 2   |      | 25         |
| Total Organic Carbon (Rep2)   | 3.76          | 3.11             | %     | 19  |      | 25         |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG733445-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 110               |             | 75-125             |
| Total Organic Carbon (Rep2) | 112               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG733478-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 100               |             | 75-125             |
| Total Organic Carbon (Rep2) | 107               |             | 75-125             |



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### S.R.M. Standard Quality Control

Standard Reference Material (SRM): WG733721-2

| <b>Parameter</b>            | <b>% Recovery</b> | <b>Qual</b> | <b>QC Criteria</b> |
|-----------------------------|-------------------|-------------|--------------------|
| Total Organic Carbon (Rep1) | 84                |             | 75-125             |
| Total Organic Carbon (Rep2) | 102               |             | 75-125             |

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

| Container ID | Container Type          | Cooler | pH  | Temp deg C | Pres | Seal   | Analysis(*)           |
|--------------|-------------------------|--------|-----|------------|------|--------|-----------------------|
| L1423331-01A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-02A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-03A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-04A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-05A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-06A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-07A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-08A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-09A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-10A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-11A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-12A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-13A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-14A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-15A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-16A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-17A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-18A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-19A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-20A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-21A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-22A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-23A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-24A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-25A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-26A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-27A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

### Container Information

| Container ID | Container Type          | Cooler | pH  | Temp deg C | Pres | Seal   | Analysis(*)           |
|--------------|-------------------------|--------|-----|------------|------|--------|-----------------------|
| L1423331-28A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-29A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-30A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-31A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-32A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-33A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-34A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-35A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-36A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-37A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-38A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-39A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-40A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |
| L1423331-41A | Glass 120ml unpreserved | A      | N/A | 5.4        | Y    | Absent | A2-TOC-9060-2REPS(28) |

\*Values in parentheses indicate holding time in days

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

## GLOSSARY

### Acronyms

|      |   |
|------|---|
| EDL  | - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).                        |
| EPA  | - Environmental Protection Agency.  |
| LCS  | - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.   |
| LCSD | - Laboratory Control Sample Duplicate: Refer to LCS.  |
| LFB  | - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.  |
| MDL  | - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.   |
| MS   | - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.  |
| MSD  | - Matrix Spike Sample Duplicate: Refer to MS.   |
| NA   | - Not Applicable.   |
| NC   | - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.  |
| NI   | - Not Ignitable.  |
| RL   | - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.  |
| RPD  | - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM  | - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.  |

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**Report Format:** Data Usability Report



**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

#### Data Qualifiers

- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** NEW BEDFORD HARBOR LTM VI  
**Project Number:** GTX-302366

**Lab Number:** L1423331  
**Report Date:** 10/23/14

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

Last revised April 15, 2014

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### The following analytes are not included in our NELAP Scope of Accreditation:

#### Westborough Facility

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

#### Mansfield Facility

**EPA 8270D:** Biphenyl.

**EPA 2540D:** TSS

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

---

### The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

#### Drinking Water

**EPA 200.8:** Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

#### Non-Potable Water

**EPA 200.8:** Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

**EPA 200.7:** Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;

**EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4,**

**SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



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The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF  
(Please report data to GeoTesting Express)

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | 01        | SED    | 151-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | 02        | SED    | 155-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 03        | SED    | 247-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 04        | SED    | 242-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 05        | SED    | 241-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 06        | SED    | 237-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 07        | SED    | 236-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 08        | SED    | 231-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 09        | SED    | 230-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 10        | SED    | 117-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 11        | SED    | 114-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 12        | SED    | 111-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 13        | SED    | 152-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 14        | SED    | 152-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 15        | SED    | 138-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 16        | SED    | 126-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 17        | SED    | 108-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 18        | SED    | 139-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 19        | SED    | 242-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 20        | SED    | 306-14LTM |  |      | 1   | X    |            |      |                             |                                |

Relinquished By (name/date/time):

*Paul Scheld* 1-OCT-14 12:30

Received By (name/date/time):

*[Signature]* 10/2/14

*[Signature]* 10/3/14 0400 rec'd manurel 60 10/3/14 0400

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**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF  
(Please report data to GeoTesting Express)

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:14 | NBH14-0237 | -21       | SED    | 222-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 15:54 | NBH14-0241 | -22       | SED    | 224-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | -23       | SED    | 128-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | -24       | SED    | 123-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | -25       | SED    | 121-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | -26       | SED    | 218-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | -27       | SED    | 208-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | -28       | SED    | 207-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | -29       | SED    | 332-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | -30       | SED    | 338-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | -31       | SED    | 331-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | -32       | SED    | 323-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | -33       | SED    | 324-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | -34       | SED    | 325-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | -35       | SED    | 225-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 9:02  | NBH14-0306 | -36       | SED    | 226-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | -37       | SED    | 227-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | -38       | SED    | 217-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | -39       | SED    | 212-14LTM |  |      | 1   | X    |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | -40       | SED    | 211-14LTM |  |      | 1   | X    |            |      |                             |                                |

Relinquished By (name/date/time):

*Paul Schell* 1-Oct-14 12:30

Received By(name/date/time):

*[Signature]* 10/2/14

10/3/14 0400 rec'd manhandled lab 10/3/14 0400

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**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Mary Davis (508)439-5171  
Alpha Analytical, Inc.  
8 Walkup Drive  
Westborough, MA 01581

Samplers Signature: PSD & MRF  
(Please report data to GeoTesting Express)

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 14:36 | NBH14-0326 | -41       | SED    | 204-14LTM |  |      | 1   | X    |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Paul Smith* 10/14/14 12:30

Received By(name/date/time):

*[Signature]* 10/2/14

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**Appendix E**  
Total PCB Analytical Laboratory Data

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**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0493*  
*Package DP-14-0675*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061

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**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*


*Batch 14-0493*  
*Package DP-14-0675*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061











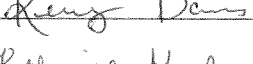
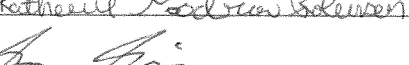

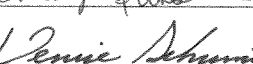












Analyst Approval:  Rich Restucci  
2014.11.18 11:55:55 -05'00'

QC Chemist Approval:  Carla Devine  
2014.12.09 10:32:51 -05'00'

Project Manager Approval:  Carole McCarthy  
2014.12.11 07:40:45 -05'00'

**Battelle**  
*The Business of Innovation*

## 2014 Signature Page

| Name (print)               | Name (signature)   | Initials  |
|----------------------------|--|---|
| Matt Schumitz              |             | MNS   |
| Ellyn M Webb               |             | EMW   |
| Carla Devine               |             | CRD   |
| Roxanne M. Brackett        |            | RMB   |
| Robert Lizotte, Jr.        |             | BL  |
| Lauren M Griffith          |             | LMG   |
| Kevin M. McInerney         |            | KMC   |
| <del>Michael McGee</del>   | <del></del> |   |
| Rich Restucci              |             | RR  |
| Stephanie Hart             |             | SAH   |
| Kerry Davis                |            | KPD   |
| Katherine Goodrow Robinson |          | KGR   |
| Sam Guimaraes              |           | SAG   |
| Emily Fraser               |           | EF  |
| Denise Schumitz            |           | DAS   |
| Jonathan Thorn             |           | JRT   |
| Christie Usher             |           | CU  |
| Caitlyn Farragher          |           | CNF   |
| Mart J. Benotti            |           |  |
| William H Brown            |           | WB  |
| Dawn Trapp                 |           | DBT   |
| Carolee S. Lynn McLain     |           | CSM   |
| Weidong Li                 |           | W.L   |
| Jeannine Seyfert           |           | JS  |
| FRANCO PALA                |           | FP  |

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0493*  
*Package DP-14-0675*

|          |   |     |
|----------|---|-----|
| <b>1</b> | <b><i>Work Plan</i></b><br>Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.  | 1   |
| <b>2</b> | <b><i>Tables</i></b><br>Analytical Data Tables, Qualifier Definitions.  | 23  |
| <b>3</b> | <b><i>Miscellaneous Documentation</i></b><br>Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.                      | 34  |
| <b>4</b> | <b><i>Sample Preparation Records</i></b><br>Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.  | 51  |
| <b>5</b> | <b><i>Analytical Calibrations</i></b><br>Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check. | 83  |
| <b>6</b> | <b><i>Analytical Data</i></b><br>Raw Data Quantification Reports.   | 168 |
| <b>7</b> | <b><i>Chromatograms</i></b><br>Sample And Standard Chromatograms.   | N/A |
| <b>8</b> | <b><i>Unused Data</i></b>   | N/A |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** USACE-NAE New Bedford Harbor LTM MDL Study  
**Project Number:** 100053747  
**Client:** USACE/NAE  
696 Virginia Road  
Concord, MA 01742  
USA  
**Client Contact Information:** Peter Hugh  
Engineering Technical Lead  
(978) 318-8452(V)  
NA  
NA  
**Effective Date of QAPP:** 10/9/2014  
**Version Number:** 100053747(S)-02  
**Project Manager:** Peven-McCarthy, Carole  
**Laboratory Task Manager:** Peven-McCarthy, Carole  
**Deliverable Due Date:** 11/3/2014

### 2.0 SCOPE OF WORK

**Overview:** A project-specific MDL study is required for this project.  
**Matrix:** Soil/Sediment

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store frozen.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** NA  
**Archiving:** NA  
**Disposal:** NA

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

NA

| Samples Expected: | Samples Per Batch: | Batches Expected: |
|-------------------|--------------------|-------------------|
|                   | 20                 |                   |

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

| Type: | Description:                      | Count:      | Rgt: | Reference:                                    | Comment: |
|-------|-----------------------------------|-------------|------|---|----------|
| PB    | Laboratory control reagent blank. | 1 per batch | --   | NA  |          |
| LCS   | Laboratory Control Sample         | 1 per batch | No   | NA  |          |
| MDL   | Method Detection Limits           | 8 per batch | Yes  | 140304-02: Mud Dump Reference N4415 Lot:N4415 |          |

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

|                           |  |
|---------------------------|--|
| SOP No.-Rev:              | <b>5-192-14</b>  |
| SOP Title:                | <i>Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis</i> |
| Sample Size:              | 10 g   |
| SIS and LCS/MS Compounds: | Defined in Table 2.  |
| Deviations:               | NA   |
| Comments:                 | NA   |

**Table 2: SIS and LCS/MS Spiking Level**

| Standard Type       | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment     |
|---------------------|-------------------|-------------------|-------------|-------------|
| PCB Surrogate       | ID59 SIS          | ~ 100 ng          | 100 uL      | NA          |
| ECD LCS/MS Solution | HX10 LCS/MS       | ~ 38 - 150 ng     | 75 uL       | LCS         |
| PDL spike ECD       | ID73 LCS/MS       | ~ 7.5 - 30.0 ng   | 150 uL      | MDL samples |

#### 2.1.3.2 Cleanup

## WORK/QUALITY ASSURANCE PROJECT PLAN

- |    |              |   |
|----|--------------|---|
| 1) | SOP No.-Rev: | <b>5-328-04</b>   |
|    | SOP Title:   | <i>Removal (cleanup) of Sulfur from Environmental Sample Extracts</i> |
|    | Deviations:  | NA  |
|    | Comments:    | NA  |
| 2) | SOP No.-Rev: | <b>5-327-04</b>   |
|    | SOP Title:   | <i>Florisil Cleanup of Environmental Sample Extracts</i>              |
|    | Deviations:  | Elute with Hexane only  |
|    | Comments:    | NA  |

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

| Standard Type | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment |
|---------------|-------------------|-------------------|-------------|---------|
| PCB IS        | IE11 RIS          | ~ 100 ng          | 100 uL      | NA      |

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- |    |             |   |
|----|-------------|---|
| 1) | SOP_No-Rev: | <b>5-128-13</b>   |
|    | SOP_Title:  | <i>Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection</i> |
|    | Deviations: | NA  |
|    | Comments:   | Report SIS corrected data   |

### 2.2. DELIVERABLES

|                          |           |
|--------------------------|-----------|
| <b>Deliverables Due:</b> | 11/3/2014 |
| <b>LIMS Reports:</b>     | Yes       |
| <b>Histograms:</b>       | No        |
| <b>Excel Tables:</b>     | Yes       |
| <b>EICs:</b>             | No        |
| <b>Chromatograms:</b>    | No        |

## WORK/QUALITY ASSURANCE PROJECT PLAN

**EDDs:** *Yes*

**Comments:**

Required 30 day TAT.

EDD required.

Full data package (pdf) required for external validation.

Detailed quant reports are not required.

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

| Staff Member             | Role                    | Comment |
|--------------------------|-------------------------|---------|
| Carole S. Peven-McCarthy | Project Manager         | NA      |
| Samuel A. Guimaraes      | Sample Preparation      | NA      |
| Richard P. Restucci Jr   | GC/ECD Analysis         | NA      |
| Matt D. Schumitz         | Sample Custody          | NA      |
| Carla R. Devine          | Quality Control Officer | NA      |

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

| Activity:           | Start Date: | End Date:  | TAT (days): | Comment: |
|---------------------|-------------|------------|-------------|----------|
| Sample Receipt      | 10/03/2014  | NA         | 0           | NA       |
| Sample Preparation  | 10/06/2014  | 10/09/2014 | 3           | NA       |
| Instrument Analysis | 10/09/2014  | 10/24/2014 | 15          | NA       |



## WORK/QUALITY ASSURANCE PROJECT PLAN

| Activity:              | Start Date: | End Date:  | TAT<br>(days): | Comment: |
|------------------------|-------------|------------|----------------|----------|
| Quality Control Review | 10/27/2014  | 10/29/2014 | 2              | NA       |
| Final Data Reporting   | 10/29/2014  | 10/31/2014 | 2              | NA       |

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

| Labor Activity:        | Hours/<br>Batch: | Batches: | Total<br>Hours: | Comment: |
|------------------------|------------------|----------|-----------------|----------|
| Sample Receipt         | 1                | 1        | 1               | NA       |
| Sample Preparation     | 24               | 1        | 24              | NA       |
| <i>Extraction</i>      | 20               |          |                 |          |
| <i>glassware</i>       | 4                |          |                 |          |
| Instrument Analysis    | 16               | 1        | 16              | NA       |
| <i>GC/ECD</i>          | 16               |          |                 |          |
| Quality Control Review | 3                | 1        | 3               | NA       |
| Final Data Reporting   | 1                | 1        | 1               | NA       |

### 7.0 STAFF DEVELOPMENT

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**Attachment 1: Target Samples**

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

|                                |  |
|--------------------------------|--|
| <b>Project Test Code Name:</b> | Master_128   |
| <b>SOP Reference:</b>          | 5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection |
| <b>Description:</b>            | Pesticide / PCB by GC/ECD  |
| <b>Matrix:</b>                 | S - Solid Samples, like soil or sediment, prepared and analyzed under the same class of detection limits.  |
| <b>Detection Limit Study:</b>  | 5-128-2013-ssMDL-SF  |
| <b>Instrument:</b>             | ECD  |
| <b>MQO Criteria</b>            | USACE/NBH LTMP   |
| <b>Standard Report:</b>        | Standard Result Report   |

| Method Specific Reporting    |            | Holding Times (days)        |                    | Data Flags                           |
|------------------------------|------------|-----------------------------|--------------------|--------------------------------------|
| <b>Result Units:</b>         | ng/g       | <b>Unit Conversion:</b>     | (none)             | <b>Sample:</b> 14 <b>DL_Flag:</b> U  |
| <b>Weight Basis:</b>         | DRY        | <b>Result Format:</b>       | Significant Figure | <b>Frozen:</b> 365 <b>RL_Flag:</b> J |
| <b>Standard Basis:</b>       | SIS        | <b># of Figures/Digits:</b> | 3                  | <b>Extract:</b> 40 <b>PB_Flag:</b> B |
| <b>Oil Weight Basis:</b>     | No         | <b>Oil Weight Source:</b>   | Oil Weight         | <b>DIL_Flag:</b> D                   |
| <b>U-Value Substitution:</b> | U-Flag=NED | <b>Histograms:</b>          | No                 | <b>HT_Flag:</b> T                    |
| <b>ECD_Reporting:</b>        | Yes        |                             |                    |                                      |
| <b>ECD_Result:</b>           | Higher     | <b>ECD_Flag</b>             | p                  |                                      |
| <b>RPD_Limit (&lt;%):</b>    | 40         | <b>ECD_Manual_Flag:</b>     | m                  |                                      |

| No: | Analyte: | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|----------|--------------|------|----------|----------|---------|--------|
| 1   | Cl2(8)   | Cl2(8)       | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 2   | Cl3(18)  | Cl3(18)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 3   | Cl3(28)  | Cl3(28)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 4   | Cl4(44)  | Cl4(44)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 5   | Cl4(52)  | Cl4(52)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 6   | Cl4(66)  | Cl4(66)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 7   | Cl5(101) | Cl5(101)     | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 8   | Cl5(105) | Cl5(105)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 9   | Cl5(118) | Cl5(118)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 10  | Cl6(128) | Cl6(128)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 11  | Cl6(138) | Cl6(138)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 12  | Cl6(153) | Cl6(153)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 13  | Cl7(170) | Cl7(170)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 14  | Cl7(180) | Cl7(180)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 15  | Cl7(187) | Cl7(187)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 16  | Cl8(195) | Cl8(195)     | T    | Cl6(161) | Cl6(152) | No      | No     |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

| No: | Analyte:  | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|-----------|--------------|------|----------|----------|---------|--------|
| 17  | CI9(206)  | CI9(206)     | T    | CI6(161) | CI6(152) | No      | No     |
| 18  | CI10(209) | CI10(209)    | T    | CI6(161) | CI6(152) | No      | No     |
| 1   | CI3(34)   | CI3(34)      | SIS  | CI5(96)  |          | No      | No     |
| 2   | CI6(152)  | CI6(152)     | SIS  | CI6(161) |          | No      | No     |

**Total Analytes:** 20

**Subtract Peaks:**

None

**Sum Peaks:**

None

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

**ICAL Acceptance Criteria:**

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

**Continuing Calibration Verification Criteria:**

**CCV Name:** 5-128

| Frequency Hrs: | Mean PD(%): | Individual PD(%): | RIS/SIS RT Window (min): | Area Limit Low(%): | Area Limit High(%): | Comment: |
|----------------|-------------|-------------------|--------------------------|--------------------|---------------------|----------|
| 24 (N)         | 15 (N)      | 20 (N)            | 0.25 (N)                 | -50                | 100 (N)             | NA       |

**Independent Calibration Verification:**

**ICC Name:** 5-128

| Mean PD Limit(%): | Ind. PD Limit(%): | RIS/SIS Window Limit (Secs): | Area Limit High(%): | Area Limit Low(%): | Comment: |
|-------------------|-------------------|------------------------------|---------------------|--------------------|----------|
| 20 (N)            | 20 (N)            | 0.25 (N)                     | -50                 | 100 (N)            | NA       |

**Mass Discrimination Criteria:**

None

**Degradation Check Criteria:**

**Degradation Check Name:** 5-128

| DDT Breakdown Limit (%): | Endrin Breakdown Limit(%): | Total Breakdown Limit(%): | Comment: |
|--------------------------|----------------------------|---------------------------|----------|
| 20 (N)                   | 20 (N)                     | 20 (N)                    |          |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Procedural Blank                       | Samples must be greater than five times the blank concentration (>5xPB).  | B                     | Review with Project Manager; re-analyze or justify results in project records.               |
| PB Measurement Quality Objective       | Organic results in the Procedural Blank are less than the ssRL (<ssRL)  | N                     |  |
| Laboratory Control Sample              | Recovery values 70-130%.  | N                     | Review with project manager; re-analyze or justify reporting the results in project records. |
| Matrix Spike Recovery                  | Organics 70-130%. Analyte concentration in MS must be >5 times reported background concentration.   | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  | Organics Results in the Target is less than 5 times the Original  | n                     |  |
| Matrix Spike/Spike Duplicate Precision | Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration.   | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  | Organics Results in the Target is less than 5 times the Original  | n                     |  |
| Standard Reference Material Accuracy   | Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL). | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  | Organics Results in the Target is less than 5 times the MDL   | n                     |  |
| Analytical Duplicate Precision         | Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL.   | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  | Organics Results in the Original is less than 10 times the MDL  | n                     |  |
| Analytical Triplicate Precision        | Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL.   | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  | Organics Results in the Original is less than 10 times the MDL  | n                     |  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Surrogate Compound Recovery            | Recovery results between 40% and 120%.  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records.   |
| Control Oil                            | RPD < 30% for at least 90% of analytes  | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Instrument Calibration                 | 5-128-13: R-squared greater than or equal to 0.995<br>Mean RSD less than or equal to 15%,<br>Individual RSD less than or equal to 25% | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Independent Calibration Check Solution | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 20%.                              | N                     | Review with Project Manager; re-analyze or justify in project records.   |
| Continuing Calibration Verification    | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 15%.                              | N                     |  |



## Sample Receipt Form

Approved:  Authorized:

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

### SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA

COC Forms:  Shipped with samples  No Forms

### Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler |              | None | Intact         | Intact              | 1.0    | 23   |

### Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0117 (NA) BDO IDs Assigned: M8152 - M8174

Samples logged in by: Schumitz, Matt Date/Time: 09/26/2014 12:00 AM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

Project Number:

Client:

Received by:

Schumitz, Matt

Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8152   | NBH14-0001        | 09/22/14 15:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8153   | NBH14-0005        | 09/22/14 14:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8154   | NBH14-0009        | 09/22/14 11:16   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8155   | NBH14-0013        | 09/22/14 12:08   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8156   | NBH14-0017        | 09/22/14 8:13    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8157   | NBH14-0021        | 09/22/14 11:38   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8158   | NBH14-0025        | 09/22/14 9:37    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8159   | NBH14-0029        | 09/22/14 10:40   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8160   | NBH14-0033        | 09/22/14 15:25   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8161   | NBH14-0037        | 09/22/14 14:03   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8162   | NBH14-0041        | 09/22/14 13:06   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8163   | NBH14-0045        | 09/23/14 15:43   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8164   | NBH14-0049        | 09/23/14 14:57   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8165   | NBH14-0053        | 09/23/14 13:53   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8166   | NBH14-0061        | 09/23/14 10:12   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8167   | NBH14-0065        | 09/23/14 9:09    | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8168   | NBH14-0073        | 09/23/14 14:27   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8169   | NBH14-0077        | 09/23/14 13:39   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8170   | NBH14-0081        | 09/23/14 12:26   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8171   | NBH14-0085        | 09/23/14 11:29   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8172   | NBH14-0089        | 09/23/14 10:32   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8173   | NBH14-0093        | 09/23/14 9:53    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8174   | NBH14-0097        | 09/23/14 8:57    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |

Total Samples: 23

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

E-18

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |  |  |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|--|--|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |  |  |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |

Relinquished By (name/date/time):

Received By(name/date/time):

*[Signature]* 9/26/14 9:15

*[Signature]* 9/26/14 9:15

**Battelle**  
*The Business of Innovation*

### Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532


Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061


Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-19

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):  
 9/26/14 9:18

Received By(name/date/time):  
 9/26/14

# Sample Receipt Form

Approved:  Authorized

Project Number: 100043429 Client: USACE  
Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM  
No. of Shipping Containers: 1

## SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
COC Forms:  Shipped with samples  No Forms

## Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal          | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|---------------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler | NA           | Custody Seals | Intact         | Intact              | 1.2    | 60   |

## Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.2 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0113 (NA) BDO IDs Assigned: M8347 - M8406  
Samples logged in by: Schumitz, Matt Date/Time: 10/01/2014 12:00 AM  
Approved By: Devine, Carla Approved On: 12/5/2014 9:32:00 AM  
Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8347   | NBH14-0057        | 09/30/14 10:09   | 10/02/14 10:08 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8348   | NBH14-0069        | 09/30/14 10:25   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8349   | NBH14-0181        | 09/26/14 8:36    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8350   | NBH14-0185        | 09/26/14 9:50    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8351   | NBH14-0189        | 09/26/14 11:00   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8352   | NBH14-0193        | 09/26/14 12:49   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8353   | NBH14-0197        | 09/26/14 13:38   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8354   | NBH14-0199        | 09/26/14 14:24   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8355   | NBH14-0203        | 09/26/14 15:17   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8356   | NBH14-0207        | 09/26/14 14:32   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8357   | NBH14-0211        | 09/26/14 13:36   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8358   | NBH14-0215        | 09/26/14 8:21    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8359   | NBH14-0219        | 09/26/14 8:50    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8360   | NBH14-0220        | 09/26/14 9:24    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8361   | NBH14-0224        | 09/26/14 10:54   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8362   | NBH14-0228        | 09/26/14 11:50   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8363   | NBH14-0232        | 09/25/14 14:16   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8364   | NBH14-0233        | 09/26/14 8:56    | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8365   | NBH14-0234        | 09/24/14 14:40   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8366   | NBH14-0237        | 09/29/14 15:14   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8367   | NBH14-0241        | 09/29/14 15:54   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8368   | NBH14-0245        | 09/29/14 8:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8369   | NBH14-0249        | 09/29/14 9:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8370   | NBH14-0253        | 09/29/14 10:01   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8371   | NBH14-0257        | 09/29/14 12:47   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8372   | NBH14-0261        | 09/29/14 14:39   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8373   | NBH14-0265        | 09/29/14 15:26   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8374   | NBH14-0269        | 09/29/14 8:13    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8375   | NBH14-0273        | 09/29/14 9:08    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8376   | NBH14-0277        | 09/29/14 9:52    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8377   | NBH14-0281        | 09/29/14 10:45   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8378   | NBH14-0285        | 09/29/14 11:15   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8379   | NBH14-0289        | 09/29/14 12:27   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8380   | NBH14-0302        | 09/30/14 8:00    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8381   | NBH14-0306        | 09/30/14 9:02    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8382   | NBH14-0310        | 09/30/14 9:59    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8383   | NBH14-0314        | 09/30/14 11:47   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8384   | NBH14-0318        | 09/30/14 12:41   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8385   | NBH14-0322        | 09/30/14 13:44   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8386   | NBH14-0326        | 09/30/14 14:36   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8387   | NBH14-0101        | 09/24/14 10:17   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8388   | NBH14-0105        | 09/24/14 9:18    | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8389   | NBH14-0109        | 09/24/14 10:56   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8390   | NBH14-0113        | 09/24/14 12:10   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8391   | NBH14-0117        | 09/24/14 13:15   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8392   | NBH14-0121        | 09/24/14 14:24   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8393   | NBH14-0125        | 09/25/14 8:15    | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8394   | NBH14-0129        | 09/25/14 9:49    | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8395   | NBH14-0133        | 09/25/14 11:00   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8396   | NBH14-0137        | 09/25/14 11:32   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8397   | NBH14-0141        | 09/25/14 12:58   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8398   | NBH14-0145        | 09/25/14 14:03   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8399   | NBH14-0149        | 09/25/14 14:56   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8400   | NBH14-0153        | 09/25/14 8:19    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8401   | NBH14-0157        | 09/25/14 9:06    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8402   | NBH14-0161        | 09/25/14 9:55    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |



## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8403   | NBH14-0165        | 09/25/14 12:58   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8404   | NBH14-0169        | 09/25/14 14:11   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8405   | NBH14-0173        | 09/25/14 15:14   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8406   | NBH14-0177        | 09/26/14 7:39    | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

Total Samples: 60

# Chain of Custody

**Battelle**

The Business of Innovation

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | M0347     | SED    | 151-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | " "       | SED    | 155-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 49        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 50        | SED    | 241-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 51        | SED    | 237-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 52        | SED    | 236-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 53        | SED    | 231-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 54        | SED    | 230-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 55        | SED    | 117-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 56        | SED    | 114-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 57        | SED    | 111-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 58        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 59        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 60        | SED    | 138-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 61        | SED    | 126-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 62        | SED    | 108-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 63        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 64        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 65        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/29/2014 | 15:14 | NBH14-0237 | 66        | SED    | 222-14LTM | 1  | X    |     |      |            |      |                 |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By (name/date/time):

*MS* 10-1-14 1700

**Battelle**  
The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Samplers Signature: PSD & MRF

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |     |     |     |            |     |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|-----|-----|-----|------------|-----|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4°C | TOC | 4°C | Grain Size | 4°C | Benthic Infauna | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 | M8367     | SED    | 224-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | " 68      | SED    | 128-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | 69        | SED    | 123-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | 70        | SED    | 121-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | 71        | SED    | 218-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | 72        | SED    | 208-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | 73        | SED    | 207-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | 74        | SED    | 332-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | 75        | SED    | 338-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | 76        | SED    | 331-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | 77        | SED    | 323-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | 78        | SED    | 324-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | 79        | SED    | 325-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | 80        | SED    | 225-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 9:02  | NBH14-0306 | 81        | SED    | 226-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | 82        | SED    | 227-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | 83        | SED    | 217-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | 84        | SED    | 212-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | 85        | SED    | 211-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 14:36 | NBH14-0326 | 86        | SED    | 204-14LTM | 1  | X   |     |     |            |     |                 |                                |

Relinquished By (name/date/time): Matt & Jyl 10/1/14 1700

Received By (name/date/time): MMF 10-1-14 1700

**Battelle**  
The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | Benthic Infauna | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | M8287     | SED    | 349-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | " " 88    | SED    | 352-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 89        | SED    | 345-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 90        | SED    | 318-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 91        | SED    | 311-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 92        | SED    | 306-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 93        | SED    | 221-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 94        | SED    | 249-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 95        | SED    | 317-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 96        | SED    | 309-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 97        | SED    | 310-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 98        | SED    | 304-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 99        | SED    | 250-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | M8400     | SED    | 105-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | " " 01    | SED    | 109-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 02        | SED    | 115-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 03        | SED    | 154-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 04        | SED    | 139-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 05        | SED    | 131-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 06        | SED    | 247-14LTM | 1  | X    |     |      |            |                 |                                |

Relinquished By (name/date/time): Matt K Zyl 10/1/14 1700

Received By (name/date/time): MMR 10-1-14 1700

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# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** Procedural Blank

**Battelle ID** CD580PB-P  
**Sample Type** PB  
**Collection Date** 10/20/2014  
**Extraction Date** 10/20/2014  
**Analysis Date** 10/26/2014  
**Analytical Instrument** ECD  
**% Moisture** 9.75  
**% Lipid** NA  
**Matrix** SEDIMENT  
**Sample Size** 9.18  
**Size Unit-Basis** G\_DRY  
**Units** NG/G\_DRY

---

|           |         |
|-----------|---------|
| Cl2(8)    | 0.261 U |
| Cl3(18)   | 0.262 U |
| Cl3(28)   | 0.262 U |
| Cl4(44)   | 0.262 U |
| Cl4(52)   | 0.261 U |
| Cl4(66)   | 0.261 U |
| Cl5(101)  | 0.261 U |
| Cl5(105)  | 0.262 U |
| Cl5(118)  | 0.262 U |
| Cl6(128)  | 0.262 U |
| Cl6(138)  | 0.262 U |
| Cl6(153)  | 0.262 U |
| Cl7(170)  | 0.262 U |
| Cl7(180)  | 0.262 U |
| Cl7(187)  | 0.262 U |
| Cl8(195)  | 0.262 U |
| Cl9(206)  | 0.261 U |
| Cl10(209) | 0.262 U |

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**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| Cl3(34)  | 77 |
| Cl6(152) | 84 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

|                              |                              |
|------------------------------|------------------------------|
| <b>Client ID</b>             | Laboratory Control<br>Sample |
| <b>Battelle ID</b>           | CD581LCS-P                   |
| <b>Sample Type</b>           | LCS                          |
| <b>Collection Date</b>       | 10/20/2014                   |
| <b>Extraction Date</b>       | 10/20/2014                   |
| <b>Analysis Date</b>         | 10/26/2014                   |
| <b>Analytical Instrument</b> | ECD                          |
| <b>% Moisture</b>            | 9.75                         |
| <b>% Lipid</b>               | NA                           |
| <b>Matrix</b>                | SEDIMENT                     |
| <b>Sample Size</b>           | 9.81                         |
| <b>Size Unit-Basis</b>       | G_DRY                        |
| <b>Units</b>                 | NG/G_DRY                     |

|           |      | Target | % REC | Qual |
|-----------|------|--------|-------|------|
| Cl2(8)    | 3.70 | 3.82   | 97    |      |
| Cl3(18)   | 3.81 | 3.82   | 100   |      |
| Cl3(28)   | 3.58 | 3.82   | 94    |      |
| Cl4(44)   | 3.69 | 3.82   | 97    |      |
| Cl4(52)   | 3.90 | 3.82   | 102   |      |
| Cl4(66)   | 3.67 | 3.82   | 96    |      |
| Cl5(101)  | 3.78 | 3.82   | 99    |      |
| Cl5(105)  | 3.85 | 3.82   | 101   |      |
| Cl5(118)  | 3.88 | 3.82   | 102   |      |
| Cl6(128)  | 3.81 | 3.82   | 100   |      |
| Cl6(138)  | 3.99 | 3.82   | 104   |      |
| Cl6(153)  | 3.90 | 3.82   | 102   |      |
| Cl7(170)  | 3.64 | 3.82   | 95    |      |
| Cl7(180)  | 3.79 | 3.82   | 99    |      |
| Cl7(187)  | 3.88 | 3.82   | 102   |      |
| Cl8(195)  | 3.66 | 3.82   | 96    |      |
| Cl9(206)  | 3.56 | 3.82   | 93    |      |
| Cl10(209) | 3.81 | 3.82   | 100   |      |

### Surrogate Recoveries (%)

|          |    |
|----------|----|
| Cl3(34)  | 80 |
| Cl6(152) | 89 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0001 | NBH14-0005 | NBH14-0009 | NBH14-0013 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8152-P    | M8153-P    | M8154-P    | M8155-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/22/2014 | 09/22/2014 | 09/22/2014 | 09/22/2014 |
| <b>Extraction Date</b>       | 10/20/2014 | 10/20/2014 | 10/20/2014 | 10/20/2014 |
| <b>Analysis Date</b>         | 10/26/2014 | 10/26/2014 | 10/26/2014 | 10/26/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 10.00      | 6.00       | 1.50       | 15.00      |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.88       | 0.95       | 0.99       | 0.85       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |         |         |         |         |
|-----------|---------|---------|---------|---------|
| Cl2(8)    | 988 D   | 1390 D  | 2250 D  | 2970 D  |
| Cl3(18)   | 2150 D  | 3070 D  | 4700 D  | 5060 D  |
| Cl3(28)   | 5690 D  | 8120 D  | 8840 D  | 11000 D |
| Cl4(44)   | 1470 D  | 2370 D  | 3180 D  | 4610 D  |
| Cl4(52)   | 7480 D  | 12300 D | 13100 D | 12500 D |
| Cl4(66)   | 834 D   | 1450 D  | 1510 D  | 2110 D  |
| Cl5(101)  | 1620 D  | 2400 D  | 2630 D  | 3910 D  |
| Cl5(105)  | 280     | 378     | 423     | 720 D   |
| Cl5(118)  | 2200 D  | 2740 D  | 3520 D  | 6040 D  |
| Cl6(128)  | 264     | 313     | 376     | 526 D   |
| Cl6(138)  | 1480 Dp | 1800 Dp | 2090 D  | 2780 D  |
| Cl6(153)  | 2480 D  | 3150 D  | 3370 D  | 4850 D  |
| Cl7(170)  | 260     | 297     | 352     | 464 D   |
| Cl7(180)  | 373     | 462 D   | 536 D   | 739 D   |
| Cl7(187)  | 404     | 509 D   | 560 D   | 620 D   |
| Cl8(195)  | 60.1    | 65.0    | 69.9    | 63.2    |
| Cl9(206)  | 62.0    | 76.2    | 69.6    | 86.9    |
| Cl10(209) | 18.8    | 20.6    | 15.6    | 26.8    |

### Surrogate Recoveries (%)

|          |     |    |     |     |
|----------|-----|----|-----|-----|
| Cl3(34)  | 113 | 98 | 101 | 113 |
| Cl6(152) | 79  | 86 | 76  | 80  |



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The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0065 | NBH14-0207 | NBH14-0211 | NBH14-0220 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8167-P    | M8356-P    | M8357-P    | M8360-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/23/2014 | 09/26/2014 | 09/26/2014 | 09/26/2014 |
| <b>Extraction Date</b>       | 10/20/2014 | 10/20/2014 | 10/20/2014 | 10/20/2014 |
| <b>Analysis Date</b>         | 10/26/2014 | 10/26/2014 | 10/26/2014 | 10/26/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 1.03       | 11.68      | 12.06      | 21.94      |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.99       | 0.90       | 0.93       | 0.82       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |         |         |        |
|-----------|--------|---------|---------|--------|
| Cl2(8)    | 12.4   | 4070 D  | 7750 D  | 483 D  |
| Cl3(18)   | 31.0   | 9280 D  | 17900 D | 1020 D |
| Cl3(28)   | 78.1   | 19600 D | 16000 D | 2810 D |
| Cl4(44)   | 26.1   | 4880 D  | 6980 D  | 1040 D |
| Cl4(52)   | 123    | 31500 D | 45500 D | 4040 D |
| Cl4(66)   | 22.0   | 2380 D  | 2840 D  | 819 D  |
| Cl5(101)  | 38.4   | 3840 D  | 2480 D  | 1430 D |
| Cl5(105)  | 7.99   | 325     | 108     | 308    |
| Cl5(118)  | 51.0   | 2930 D  | 2580 D  | 1710 D |
| Cl6(128)  | 6.04   | 360     | 156     | 314    |
| Cl6(138)  | 34.8   | 2040 D  | 3100 D  | 1180 D |
| Cl6(153)  | 50.5   | 4060 D  | 5720 D  | 1620 D |
| Cl7(170)  | 3.66   | 434     | 337     | 225    |
| Cl7(180)  | 5.97   | 615 D   | 562 D   | 339    |
| Cl7(187)  | 6.86   | 778 D   | 1210 D  | 253    |
| Cl8(195)  | 2.56 U | 109     | 89.3    | 40.6   |
| Cl9(206)  | 2.55 U | 135     | 146     | 47.1   |
| Cl10(209) | 2.56 U | 35.5    | 37.6    | 14.9   |

### Surrogate Recoveries (%)

|          |    |    |     |     |
|----------|----|----|-----|-----|
| Cl3(34)  | 91 | 83 | 118 | 110 |
| Cl6(152) | 87 | 93 | 101 | 101 |

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The Business of Innovation

Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

| Client ID             | NBH14-0224 | NBH14-0228 | NBH14-0232 | NBH14-0245 |
|-----------------------|------------|------------|------------|------------|
| Battelle ID           | M8361-P    | M8362-P    | M8363-P    | M8368-P    |
| Sample Type           | SA         | SA         | SA         | SA         |
| Collection Date       | 09/26/2014 | 09/26/2014 | 09/25/2014 | 09/29/2014 |
| Extraction Date       | 10/20/2014 | 10/20/2014 | 10/20/2014 | 10/20/2014 |
| Analysis Date         | 10/26/2014 | 10/26/2014 | 10/26/2014 | 10/26/2014 |
| Analytical Instrument | ECD        | ECD        | ECD        | ECD        |
| % Moisture            | 0.93       | 19.79      | 3.50       | 21.84      |
| % Lipid               | NA         | NA         | NA         | NA         |
| Matrix                | SED        | SED        | SED        | SED        |
| Sample Size           | 1.10       | 0.87       | 0.97       | 0.78       |
| Size Unit-Basis       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| Units                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |        |        |         |
|-----------|--------|--------|--------|---------|
| Cl2(8)    | 106    | 747 D  | 828 D  | 9420 D  |
| Cl3(18)   | 286 D  | 1600 D | 1870 D | 19000 D |
| Cl3(28)   | 518 D  | 2120 D | 4110 D | 24600 D |
| Cl4(44)   | 139    | 798 D  | 1480 D | 9680 D  |
| Cl4(52)   | 834 D  | 3680 D | 6930 D | 36600 D |
| Cl4(66)   | 83.1   | 324 D  | 880 D  | 3580 D  |
| Cl5(101)  | 178 D  | 288    | 1390 D | 5680 D  |
| Cl5(105)  | 32.8   | 59.4   | 338    | 507     |
| Cl5(118)  | 228    | 344 D  | 2430 D | 6180 D  |
| Cl6(128)  | 29.4   | 49.3   | 382    | 561     |
| Cl6(138)  | 139    | 355 p  | 1580 D | 2920 D  |
| Cl6(153)  | 214    | 465 D  | 2260 D | 5270 D  |
| Cl7(170)  | 20.8   | 53.0   | 273    | 466 D   |
| Cl7(180)  | 33.9   | 85.0   | 400    | 794 D   |
| Cl7(187)  | 36.4   | 162 p  | 336    | 885 D   |
| Cl8(195)  | 1.77 J | 44.3 p | 45.5   | 115     |
| Cl9(206)  | 3.09   | 112    | 60.5   | 141     |
| Cl10(209) | 2.31 U | 94.1   | 22.6   | 38.5    |

### Surrogate Recoveries (%)

|          |    |     |     |    |
|----------|----|-----|-----|----|
| Cl3(34)  | 92 | 105 | 119 | 86 |
| Cl6(152) | 73 | 85  | 87  | 84 |

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The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0249 | NBH14-0253 | NBH14-0101 | NBH14-0153 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8369-P    | M8370-P    | M8387-P    | M8400-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/29/2014 | 09/29/2014 | 09/24/2014 | 09/25/2014 |
| <b>Extraction Date</b>       | 10/20/2014 | 10/20/2014 | 10/20/2014 | 10/20/2014 |
| <b>Analysis Date</b>         | 10/26/2014 | 10/26/2014 | 10/26/2014 | 10/27/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 11.11      | 4.48       | 0.45       | 33.50      |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.88       | 0.96       | 10.01      | 0.69       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |         |         |          |         |
|-----------|---------|---------|----------|---------|
| Cl2(8)    | 1970 D  | 4390 D  | 0.188 pJ | 2700 D  |
| Cl3(18)   | 5510 D  | 9680 D  | 0.254 U  | 8230 D  |
| Cl3(28)   | 9560 D  | 14900 D | 1.12     | 12500 D |
| Cl4(44)   | 2910 D  | 3860 D  | 0.129 pJ | 4380 D  |
| Cl4(52)   | 16900 D | 26800 D | 0.768 p  | 27100 D |
| Cl4(66)   | 1480 D  | 1980 D  | 0.930    | 2260 D  |
| Cl5(101)  | 2310 D  | 2770 D  | 0.956    | 3040 D  |
| Cl5(105)  | 278     | 490 D   | 0.305    | 226     |
| Cl5(118)  | 2160 D  | 2610 D  | 1.79     | 2340 D  |
| Cl6(128)  | 287     | 386 D   | 0.331 p  | 282     |
| Cl6(138)  | 1480 Dp | 1960 D  | 1.40     | 1830 D  |
| Cl6(153)  | 2550 D  | 3030 D  | 1.30     | 3110 D  |
| Cl7(170)  | 278     | 369     | 0.254 U  | 329     |
| Cl7(180)  | 435     | 450 D   | 0.254 pU | 531     |
| Cl7(187)  | 453     | 488 D   | 0.191 pJ | 620 D   |
| Cl8(195)  | 57.9    | 73.2    | 0.254 U  | 76.4    |
| Cl9(206)  | 74.3    | 88.6    | 0.252 U  | 104     |
| Cl10(209) | 18.6    | 22.8    | 0.254 U  | 26.6    |

### Surrogate Recoveries (%)

|          |    |    |    |    |
|----------|----|----|----|----|
| Cl3(34)  | 86 | 76 | 89 | 81 |
| Cl6(152) | 90 | 90 | 83 | 97 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0157 | NBH14-0161 | NBH14-0169 | NBH14-0173 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8401-P    | M8402-P    | M8404-P    | M8405-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/25/2014 | 09/25/2014 | 09/25/2014 | 09/25/2014 |
| <b>Extraction Date</b>       | 10/20/2014 | 10/20/2014 | 10/20/2014 | 10/20/2014 |
| <b>Analysis Date</b>         | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 3.11       | 2.91       | 11.21      | 2.93       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.98       | 0.98       | 0.91       | 0.99       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |         |          |        |        |
|-----------|---------|----------|--------|--------|
| Cl2(8)    | 4320 D  | 195000 D | 836 D  | 848 D  |
| Cl3(18)   | 17900 D | 226000 D | 1880 D | 2180 D |
| Cl3(28)   | 24400 D | 83700 D  | 3730 D | 3580 D |
| Cl4(44)   | 8820 D  | 53600 D  | 1360 D | 1520 D |
| Cl4(52)   | 56700 D | 309000 D | 6450 D | 7110 D |
| Cl4(66)   | 4390 D  | 51.6 U   | 1010 D | 802 D  |
| Cl5(101)  | 5110 D  | 19900 D  | 1480 D | 1320 D |
| Cl5(105)  | 364     | 482 D    | 356    | 236    |
| Cl5(118)  | 3770 D  | 7600 D   | 2440 D | 1850 D |
| Cl6(128)  | 340 D   | 1690 D   | 341    | 239    |
| Cl6(138)  | 3040 D  | 10700 D  | 1520 D | 1180 D |
| Cl6(153)  | 7270 D  | 14000 D  | 2100 D | 1800 D |
| Cl7(170)  | 411 D   | 2520 Dp  | 263    | 195    |
| Cl7(180)  | 727 D   | 4050 D   | 396    | 297    |
| Cl7(187)  | 1320 D  | 4380 D   | 355    | 274    |
| Cl8(195)  | 156     | 527 D    | 49.4   | 37.2   |
| Cl9(206)  | 214     | 623 D    | 55.8   | 45.0   |
| Cl10(209) | 57.5    | 120 D    | 18.0   | 14.7   |

### Surrogate Recoveries (%)

|          |    |       |     |     |
|----------|----|-------|-----|-----|
| Cl3(34)  | 93 | 0 NDH | 112 | 115 |
| Cl6(152) | 84 | 0 NDH | 89  | 95  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0065 | NBH14-0065 |                 |
|------------------------------|------------|------------|-----------------|
| <b>Battelle ID</b>           | M8167-P    | M8167DUP-P |                 |
| <b>Sample Type</b>           | SA         | QADU       |                 |
| <b>Collection Date</b>       | 09/23/2014 | 09/23/2014 |                 |
| <b>Extraction Date</b>       | 10/20/2014 | 10/20/2014 |                 |
| <b>Analysis Date</b>         | 10/26/2014 | 10/26/2014 |                 |
| <b>Analytical Instrument</b> | ECD        | ECD        |                 |
| <b>% Moisture</b>            | 1.03       | 0.51       |                 |
| <b>% Lipid</b>               | NA         | NA         |                 |
| <b>Matrix</b>                | SED        | SED        |                 |
| <b>Sample Size</b>           | 0.99       | 1.00       |                 |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      |                 |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | <b>RPD Qual</b> |

---

|           |        |        |      |
|-----------|--------|--------|------|
| Cl2(8)    | 12.4   | 12.2   | 1.6  |
| Cl3(18)   | 31.0   | 29.0   | 6.7  |
| Cl3(28)   | 78.1   | 77.0   | 1.4  |
| Cl4(44)   | 26.1   | 26.7   | 2.3  |
| Cl4(52)   | 123    | 121    | 1.6  |
| Cl4(66)   | 22.0   | 25.5   | 14.7 |
| Cl5(101)  | 38.4   | 36.5   | 5.1  |
| Cl5(105)  | 7.99   | 7.29   | 9.2  |
| Cl5(118)  | 51.0   | 52.4   | 2.7  |
| Cl6(128)  | 6.04   | 7.19   | 17.4 |
| Cl6(138)  | 34.8   | 38.0   | 8.8  |
| Cl6(153)  | 50.5   | 51.8   | 2.5  |
| Cl7(170)  | 3.66   | 3.85   | 5.1  |
| Cl7(180)  | 5.97   | 6.52   | 8.8  |
| Cl7(187)  | 6.86   | 6.98   | 1.7  |
| Cl8(195)  | 2.56 U | 2.54 U |      |
| Cl9(206)  | 2.55 U | 2.53 U |      |
| Cl10(209) | 2.56 U | 2.54 U |      |

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**Surrogate Recoveries (%)**

|          |    |    |  |
|----------|----|----|--|
| Cl3(34)  | 91 | 88 |  |
| Cl6(152) | 87 | 82 |  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                | NBH14-0101 | NBH14-0101 |        |       |      |
|--------------------------|------------|------------|--------|-------|------|
| Battelle ID              | M8387-P    | M8387MS-P  |        |       |      |
| Sample Type              | SA         | MS         |        |       |      |
| Collection Date          | 09/24/2014 | 09/24/2014 |        |       |      |
| Extraction Date          | 10/20/2014 | 10/20/2014 |        |       |      |
| Analysis Date            | 10/26/2014 | 10/26/2014 |        |       |      |
| Analytical Instrument    | ECD        | ECD        |        |       |      |
| % Moisture               | 0.45       | 0.00       |        |       |      |
| % Lipid                  | NA         | NA         |        |       |      |
| Matrix                   | SED        | SED        |        |       |      |
| Sample Size              | 10.01      | 5.01       |        |       |      |
| Size Unit-Basis          | G_DRY      | G_DRY      |        |       |      |
| Units                    | NG/G_DRY   | NG/G_DRY   | Target | % REC | Qual |
| Cl2(8)                   | 0.188 pJ   | 11.7       | 12.48  | 92    |      |
| Cl3(18)                  | 0.254 U    | 12.2       | 12.48  | 98    |      |
| Cl3(28)                  | 1.12       | 13.2       | 12.48  | 97    |      |
| Cl4(44)                  | 0.129 pJ   | 13.6       | 12.48  | 108   |      |
| Cl4(52)                  | 0.768 p    | 12.6       | 12.48  | 95    |      |
| Cl4(66)                  | 0.930      | 13.3       | 12.48  | 99    |      |
| Cl5(101)                 | 0.956      | 10.3       | 12.48  | 75    |      |
| Cl5(105)                 | 0.305      | 13.4       | 12.48  | 105   |      |
| Cl5(118)                 | 1.79       | 14.0       | 12.48  | 98    |      |
| Cl6(128)                 | 0.331 p    | 12.6       | 12.48  | 98    |      |
| Cl6(138)                 | 1.40       | 14.2       | 12.48  | 103   |      |
| Cl6(153)                 | 1.30       | 14.1       | 12.48  | 103   |      |
| Cl7(170)                 | 0.254 U    | 12.6       | 12.48  | 101   |      |
| Cl7(180)                 | 0.254 pU   | 12.7       | 12.48  | 101   |      |
| Cl7(187)                 | 0.191 pJ   | 12.9       | 12.48  | 102   |      |
| Cl8(195)                 | 0.254 U    | 12.8       | 12.48  | 103   |      |
| Cl9(206)                 | 0.252 U    | 12.9       | 12.48  | 103   |      |
| Cl10(209)                | 0.254 U    | 13.8       | 12.48  | 111   |      |
| Surrogate Recoveries (%) |            |            |        |       |      |
| Cl3(34)                  | 89         | 91         |        |       |      |
| Cl6(152)                 | 83         | 91         |        |       |      |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** NBH14-0101

**Battelle ID** M8387MSD-P

**Sample Type** MSD

**Collection Date** 09/24/2014

**Extraction Date** 10/20/2014

**Analysis Date** 10/27/2014

**Analytical Instrument** ECD

**% Moisture** 0.49

**% Lipid** NA

**Matrix** SED

**Sample Size** 4.98

**Size Unit-Basis** G\_DRY

**Units** NG/G\_DRY **Target % REC Qual RPD Qual**

|           |        | Target | % REC | Qual | RPD  | Qual |
|-----------|--------|--------|-------|------|------|------|
| CI2(8)    | 11.8   | 12.55  | 93    |      | 1.1  |      |
| CI3(18)   | 12.0   | 12.55  | 96    |      | 2.1  |      |
| CI3(28)   | 13.1   | 12.55  | 95    |      | 2.1  |      |
| CI4(44)   | 13.5   | 12.55  | 107   |      | 0.9  |      |
| CI4(52)   | 13.4   | 12.55  | 101   |      | 6.1  |      |
| CI4(66)   | 13.3   | 12.55  | 99    |      | 0.0  |      |
| CI5(101)  | 10.5   | 12.55  | 76    |      | 1.3  |      |
| CI5(105)  | 13.2   | 12.55  | 103   |      | 1.9  |      |
| CI5(118)  | 14.4   | 12.55  | 100   |      | 2.0  |      |
| CI6(128)  | 12.8 p | 12.55  | 99    |      | 1.0  |      |
| CI6(138)  | 13.8   | 12.55  | 99    |      | 4.0  |      |
| CI6(153)  | 14.3   | 12.55  | 104   |      | 1.0  |      |
| CI7(170)  | 12.2   | 12.55  | 97    |      | 4.0  |      |
| CI7(180)  | 12.6   | 12.55  | 100   |      | 1.0  |      |
| CI7(187)  | 13.1   | 12.55  | 103   |      | 1.0  |      |
| CI8(195)  | 12.1   | 12.55  | 96    |      | 7.0  |      |
| CI9(206)  | 11.7   | 12.55  | 93    |      | 10.2 |      |
| CI10(209) | 12.4   | 12.55  | 99    |      | 11.4 |      |

**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| CI3(34)  | 89 |
| CI6(152) | 90 |



## Glossary of Data Qualifiers

**Flag: Application:**

---

- B Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
- D Dilution Run. Initial run outside linear range of instrument.
- E Estimate, result is greater than the highest concentration level in the calibration.
- H Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
- J Analyte detected below the sample-specific Reporting Limit (RL).
- m Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
- ME Significant Matrix Interference - Estimated value.
- MI Significant Matrix Interference - value could not be determined or estimated.
- n Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
- N Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
- NA Not applicable
- p Dual column value exceeds RPD criteria, dual column quantitative analysis only.
- T Holding Time (HT) exceeded.
- U Analyte not detected at 3:1 signal:noise ratio.

**QA/QC Summary  
Batch 14-0493**

|                   |   |
|-------------------|---|
| Project:          | USACE/NAE – New Bedford Harbor Long Term Monitoring |
| Parameters:       | PCB Congeners (NOAA 18)                             |
| Laboratory:       | Battelle, Norwell, MA                               |
| Matrix:           | Sediment  |
| Data Set:         | DP-14-0675  |
| Analytical SOP:   | 5-128   |
| Method Reference: | EPA Method 8081B and 8082A (modified)               |

**Sample Custody**

| Collection Date | Receipt Date   | Temp (°C) |
|-----------------|----------------|-----------|
| 9/22-30/2014    | 9/26,10/1/2014 | 1.0,1.2   |

|                    |   |
|--------------------|---|
| Corrective Actions | NA  |
| Sample Storage     | The sediment samples were stored frozen until extraction. |
| Related samples    | NA  |

**METHOD SUMMARIES**

|                    |  |
|--------------------|--|
| Sample Preparation | <p>Prior to sediment extraction, an aliquot of approximately 30 g of wet sediment was placed on clean, labeled aluminum foil, covered and placed in a laboratory laminar flow hood to dry the sample to &lt;50% moisture. Aliquots of these dried samples were weighed into sample extraction vessels for sample extraction. Approximately 1 to 10 g sediment was weighed out for extraction (sample weight based on historical analysis results). The sediments were spiked with surrogates, extracted three times with methylene chloride, and the extracts combined, dried over anhydrous sodium sulfate, and concentrated. The concentrated extracts were processed through Florisil to isolate the PCBs, followed by activated copper treatment to remove sulfur. The cleaned extract was concentrated and fortified with internal standard (IS) compounds prior to analysis by GC/ECD.</p> |
| Prep Comments      | No comments.   |

|                   |   |
|-------------------|---|
| Analysis          | <p>PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration.</p>  |
| Analysis Comments | <ul style="list-style-type: none"> <li>Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from</li> </ul> |

**QA/QC Summary  
Batch 14-0493**

|  |   |
|--|---|
|  | <p>additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.</p> <ul style="list-style-type: none"> <li>• In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.</li> <li>• In cases where p qualifiers are present, integrations and data were reviewed.</li> <li>• Method MM0417B is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak. Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.</li> </ul> |
|--|---|

| Holding Times | Extraction Date(s) | Analysis Date(s)  |
|---------------|--------------------|---|
|               | 10/20/2014         | 10/26-27/2014; 10/29-30/2014;<br>10/31/2014; 11/15/2014 |

|                       |  |
|-----------------------|--|
| Procedural Blank (PB) | A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination. |
| Blank value <5x ssMDL | No exceedences noted.  |
| Samples >5X PB        | No comments.   |

|                          |   |
|--------------------------|---|
| Laboratory Control Spike | A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. |
| 70-130% recovery         | No exceedences noted.   |
|                          | No comments.  |

|  |   |
|--|---|
| Matrix Spike (MS)/Matrix Spike Duplicate (MSD) | A MS/MSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. |
| 70-130% recovery                               | No exceedences noted  |
| <30% RPD                                       | No comments.  |
| Spike must be >5x bkgd conc.                   |   |

**QA/QC Summary  
Batch 14-0493**

|                        |   |
|------------------------|---|
| Sample Duplicate (DUP) | A laboratory duplicate of one sediment was prepared with the analytical batch. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. <b>NOTE: This QC sample was inadvertently included in the sample batch instead of the requested SRM.</b> |
| <30% RPD               | No exceedences noted.   |
| Conc must be >10X MDL  | No comments.  |

|                    |  |
|--------------------|--|
| Surrogate Recovery | Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency.  |
| 40-120% recovery   | Two exceedences noted.<br>Original, undiluted sample M8402-P(2) exhibits high levels of target analytes which interfere with SIS and IS. The primary dilution is used as the primary file for this sample, where the SIS are diluted out. SIS are appropriately H qualified. The data for this sample are not surrogate corrected. |

|                            |  |
|----------------------------|--|
| Initial Calibration (ICAL) | The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF). |
| $R^2 \geq 0.995$           | No exceedences noted.<br>No comments.  |

|  |   |
|--|---|
| Independent Calibration Check (ICC)        | The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL. |
| $\leq 20\%$ difference individual and mean | No exceedences noted.<br>No comments.   |

|  |   |
|--|---|
| Continuing Calibration Verification (CCV)                      | Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid. |
| $\leq 20\%$ difference individual; $\leq 15\%$ difference mean | No exceedences noted.<br>No comments.   |

## Report Project Data Set MOOs

**Project Title:** USACE/NAE - New Bedford Harbor LTM

**Data Set Number:** DP-14-0675

**Project Number:** 100053747

**Prep Batch Number:** 14-0493

**Test Code (Matrix Type):** Master\_128(S)

| QC_PARAMETER:                          | Exceed: | Contg.: | JUSTIFICATION:   |
|--|---------|---------|--|
| Procedural Blank                       | 0       | 0       | None   |
| PB Measurement Quality Objective       | 0       | 0       | None   |
| Laboratory Control Sample              | 0       | 0       | None   |
| Matrix Spike Recovery                  | 0       | 0       | None   |
| Matrix Spike/Spike Duplicate Precision | 0       | 0       | None   |
| Standard Reference Material Accuracy   | NA      | NA      | NA   |
| Analytical Duplicate Precision         | 0       | 0       | None   |
| Analytical Triplicate Precision        | NA      | NA      | NA   |
| Surrogate Compound Recovery            | 2       | 0       | Original, undiluted sample M8402-P(2) exhibits high levels of target analytes which interfere with SIS and IS. The primary dilution is used as the primary file for this sample, where the SIS are diluted out. SIS are appropriately H qualified. |
| Control Oil                            | NA      | NA      | NA   |
| Instrument Calibration                 | 0       | 0       | None   |
| Independent Calibration Check Solution | 0       | 0       | None   |
| Continuing Calibration Verification    | 0       | 0       | None   |

RR 02/16/2015

## BATTELLE - DUXBURY OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** USACE/NAE - New Bedford Harbor LTM      **Data Set Number:** DP-14-0675  
**Project Number:** 100053747      **Prep Batch Number:** 14-0493  
**Entered By:** Richard Restucci Jr      **Entered On:** 11/18/2014  
**Test Code (Matrix Type):** Master\_128(S)

Integrations by Rich Restucci.  
RR 11/18/14

Method MM0417B is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak.

Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.  
RR 11/18/14

Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.  
RR 11/18/14

In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.  
RR 11/18/14

In cases where p qualifiers are present, integrations and data were reviewed.  
RR 11/18/14

**Task Leader Approval:**  Kevin McNerney  
2014.12.08 14:07:08 -05'00'

**Supervisor Approval:**  Carole McCarthy  
2014.12.09 07:45:33 -05'00'

**PM Approval:**  Carole McCarthy  
2014.12.09 07:45:33 -05'00'

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2021371 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2857033 |

L3  
(+)  
(-)

2225995  
4451990  
1112997

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|----------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | Cl5(96) | 2503423 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | Cl5(96) | 2558363 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | Cl5(96) | 2768412 |       |
| SM0418.S  | M7255.D  | M8152-P(2)    | SA    | Cl5(96) | 2637572 |       |
| SM0418.S  | M7256.D  | M8153-P(2)    | SA    | Cl5(96) | 2481340 |       |
| SM0418.S  | M7257.D  | M8154-P(2)    | SA    | Cl5(96) | 2883928 |       |
| SM0418.S  | M7258.D  | M8155-P(2)    | SA    | Cl5(96) | 2476290 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | Cl5(96) | 3609297 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | Cl5(96) | 3127952 |       |
| SM0418.S  | M7261.D  | M8356-P(2)    | SA    | Cl5(96) | 2905499 |       |
| SM0418.S  | M7262.D  | M8357-P(2)    | SA    | Cl5(96) | 2987928 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | Cl5(96) | 3503800 |       |
| SM0418.S  | M7264.D  | M8360-P(2)    | SA    | Cl5(96) | 2370713 |       |
| SM0418.S  | M7265.D  | M8361-P(2)    | SA    | Cl5(96) | 3844228 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | Cl5(96) | 3037866 |       |
| SM0418.S  | M7267.D  | M8363-P(2)    | SA    | Cl5(96) | 2787303 |       |
| SM0418.S  | M7268.D  | M8368-P(2)    | SA    | Cl5(96) | 2866852 |       |
| SM0418.S  | M7269.D  | M8369-P(2)    | SA    | Cl5(96) | 2390269 |       |
| SM0418.S  | M7270.D  | M8370-P(2)    | SA    | Cl5(96) | 2802792 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | Cl5(96) | 3096478 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | Cl5(96) | 2794790 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | Cl5(96) | 3335608 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | Cl5(96) | 3362143 |       |
| SM0418.S  | M7274A.D | M8400-P(2)    | SA    | Cl5(96) | 2497949 |       |
| SM0418.S  | M7274B.D | M8401-P(2)    | SA    | Cl5(96) | 2784850 |       |
| SM0418.S  | M7274D.D | M8404-P(2)    | SA    | Cl5(96) | 2764098 |       |
| SM0418.S  | M7274E.D | M8405-P(2)    | SA    | Cl5(96) | 2014377 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | Cl5(96) | 3176875 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | Cl5(96) | 3510574 |       |
| SM0418.S  | M7274H.D | M8402-P-D(4)  | SA    | Cl5(96) | 3643347 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | Cl5(96) | 3243028 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 1

| SEQUENCE: | FILE:    | LEVEL:       | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|----------|--------------|-------|---------|---------|-------|
| SM0418.S  | M7274J.D | M8405-P-D(4) | SA    | CI5(96) | 3234848 |       |
| SM0418.S  | M7274K.D | IE07         | CCV   | CI5(96) | 3216545 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4) | SA    | CI5(96) | 3406914 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4) | SA    | CI5(96) | 3482089 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4) | SA    | CI5(96) | 3382846 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4) | SA    | CI5(96) | 3070304 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4) | SA    | CI5(96) | 3597548 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4) | SA    | CI5(96) | 3055648 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4) | SA    | CI5(96) | 3289085 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4) | SA    | CI5(96) | 2992240 |       |
| SM0418.S  | M7285.D  | IE07         | CCV   | CI5(96) | 3560529 |       |
| SM0418.S  | M7286.D  | M8362-P-D(4) | SA    | CI5(96) | 2943758 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4) | SA    | CI5(96) | 3086995 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4) | SA    | CI5(96) | 3094014 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4) | SA    | CI5(96) | 3251142 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4) | SA    | CI5(96) | 3217440 |       |
| SM0418.S  | M7292.D  | IE08         | CCV   | CI5(96) | 3877495 |       |
| SM0419.S  | M7325.D  | IE07         | CCV   | CI5(96) | 3376347 |       |
| SM0419.S  | M7326.D  | M8152-P-D(5) | SA    | CI5(96) | 2767041 |       |
| SM0419.S  | M7327.D  | M8153-P-D(5) | SA    | CI5(96) | 2816223 |       |
| SM0419.S  | M7328.D  | M8154-P-D(5) | SA    | CI5(96) | 2949879 |       |
| SM0419.S  | M7329.D  | M8155-P-D(5) | SA    | CI5(96) | 2990561 |       |
| SM0419.S  | M7330.D  | M8356-P-D(5) | SA    | CI5(96) | 2938650 |       |
| SM0419.S  | M7331.D  | M8357-P-D(5) | SA    | CI5(96) | 3048346 |       |
| SM0419.S  | M7332.D  | M8368-P-D(5) | SA    | CI5(96) | 2889515 |       |
| SM0419.S  | M7333.D  | M8369-P-D(5) | SA    | CI5(96) | 2821161 |       |
| SM0419.S  | M7334.D  | M8370-P-D(5) | SA    | CI5(96) | 2973108 |       |
| SM0419.S  | M7335.D  | M8400-P-D(5) | SA    | CI5(96) | 3085883 |       |
| SM0419.S  | M7336.D  | IE08         | CCV   | CI5(96) | 3814908 |       |
| SM0419.S  | M7337.D  | M8401-P-D(5) | SA    | CI5(96) | 3115868 |       |
| SM0419.S  | M7338.D  | M8402-P-D(5) | SA    | CI5(96) | 3622059 |       |
| SM0419.S  | M7339.D  | M8404-P-D(5) | SA    | CI5(96) | 3100391 |       |
| SM0419.S  | M7340.D  | M8405-P-D(5) | SA    | CI5(96) | 3030324 |       |
| SM0419.S  | M7341.D  | IE07         | CCV   | CI5(96) | 3379095 |       |
| SM0420.S  | M7364.D  | IE07         | CCV   | CI5(96) | 2938384 |       |
| SM0420.S  | M7365.D  | M8402-P-D(7) | SA    | CI5(96) | 2245288 |       |
| SM0420.S  | M7366.D  | IE08         | CCV   | CI5(96) | 2882190 |       |
| SM0424.S  | M7603.D  | IE07         | CCV   | CI5(96) | 3483421 |       |
| SM0424.S  | M7613.D  | M8363-P-D(5) | SA    | CI5(96) | 2862754 |       |
| SM0424.S  | M7614.D  | IE08         | CCV   | CI5(96) | 3364116 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:    | AREA:   |
|-----------|---------|--------|-------|----------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161) | 4304957 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161) | 4562564 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161) | 4815577 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161) | 5366502 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161) | 5424577 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161) | 5785136 |

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 (+) 9631155  
 (-) 2407789

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|----------|---------------|-------|----------|---------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | Cl6(161) | 5353469 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | Cl6(161) | 5514363 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | Cl6(161) | 4492702 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | Cl6(161) | 4746649 |       |
| SM0418.S  | M7255.D  | M8152-P(2)    | SA    | Cl6(161) | 5230257 |       |
| SM0418.S  | M7256.D  | M8153-P(2)    | SA    | Cl6(161) | 5978963 |       |
| SM0418.S  | M7257.D  | M8154-P(2)    | SA    | Cl6(161) | 6152753 |       |
| SM0418.S  | M7258.D  | M8155-P(2)    | SA    | Cl6(161) | 7248097 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | Cl6(161) | 7247431 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | Cl6(161) | 6620840 |       |
| SM0418.S  | M7261.D  | M8356-P(2)    | SA    | Cl6(161) | 4701199 |       |
| SM0418.S  | M7262.D  | M8357-P(2)    | SA    | Cl6(161) | 4380345 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | Cl6(161) | 8118012 |       |
| SM0418.S  | M7264.D  | M8360-P(2)    | SA    | Cl6(161) | 4556617 |       |
| SM0418.S  | M7265.D  | M8361-P(2)    | SA    | Cl6(161) | 7925858 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | Cl6(161) | 5326577 |       |
| SM0418.S  | M7267.D  | M8363-P(2)    | SA    | Cl6(161) | 5087859 |       |
| SM0418.S  | M7268.D  | M8368-P(2)    | SA    | Cl6(161) | 4785445 |       |
| SM0418.S  | M7269.D  | M8369-P(2)    | SA    | Cl6(161) | 4951624 |       |
| SM0418.S  | M7270.D  | M8370-P(2)    | SA    | Cl6(161) | 5133630 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | Cl6(161) | 6330074 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | Cl6(161) | 5471518 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | Cl6(161) | 6582280 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | Cl6(161) | 7429783 |       |
| SM0418.S  | M7274A.D | M8400-P(2)    | SA    | Cl6(161) | 4430780 |       |
| SM0418.S  | M7274B.D | M8401-P(2)    | SA    | Cl6(161) | 5113679 |       |
| SM0418.S  | M7274D.D | M8404-P(2)    | SA    | Cl6(161) | 5765366 |       |
| SM0418.S  | M7274E.D | M8405-P(2)    | SA    | Cl6(161) | 5579760 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | Cl6(161) | 7784313 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | Cl6(161) | 8686728 |       |
| SM0418.S  | M7274H.D | M8402-P-D(4)  | SA    | Cl6(161) | 4687937 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | Cl6(161) | 7746904 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 1

| SEQUENCE: | FILE:    | LEVEL:       | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|----------|--------------|-------|----------|---------|-------|
| SM0418.S  | M7274J.D | M8405-P-D(4) | SA    | Cl6(161) | 7146689 |       |
| SM0418.S  | M7274K.D | IE07         | CCV   | Cl6(161) | 7289019 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4) | SA    | Cl6(161) | 8028174 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4) | SA    | Cl6(161) | 7903402 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4) | SA    | Cl6(161) | 8278172 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4) | SA    | Cl6(161) | 7326429 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4) | SA    | Cl6(161) | 8394196 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4) | SA    | Cl6(161) | 4919129 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4) | SA    | Cl6(161) | 8015995 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4) | SA    | Cl6(161) | 6558205 |       |
| SM0418.S  | M7285.D  | IE07         | CCV   | Cl6(161) | 8056736 |       |
| SM0418.S  | M7286.D  | M8362-P-D(4) | SA    | Cl6(161) | 6367899 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4) | SA    | Cl6(161) | 6755595 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4) | SA    | Cl6(161) | 8070732 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4) | SA    | Cl6(161) | 7835514 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4) | SA    | Cl6(161) | 7679457 |       |
| SM0418.S  | M7292.D  | IE08         | CCV   | Cl6(161) | 8907856 |       |
| SM0419.S  | M7325.D  | IE07         | CCV   | Cl6(161) | 7434625 |       |
| SM0419.S  | M7326.D  | M8152-P-D(5) | SA    | Cl6(161) | 5696514 |       |
| SM0419.S  | M7327.D  | M8153-P-D(5) | SA    | Cl6(161) | 6320722 |       |
| SM0419.S  | M7328.D  | M8154-P-D(5) | SA    | Cl6(161) | 6663226 |       |
| SM0419.S  | M7329.D  | M8155-P-D(5) | SA    | Cl6(161) | 6552986 |       |
| SM0419.S  | M7330.D  | M8356-P-D(5) | SA    | Cl6(161) | 6671910 |       |
| SM0419.S  | M7331.D  | M8357-P-D(5) | SA    | Cl6(161) | 6679027 |       |
| SM0419.S  | M7332.D  | M8368-P-D(5) | SA    | Cl6(161) | 6150244 |       |
| SM0419.S  | M7333.D  | M8369-P-D(5) | SA    | Cl6(161) | 5961579 |       |
| SM0419.S  | M7334.D  | M8370-P-D(5) | SA    | Cl6(161) | 6464020 |       |
| SM0419.S  | M7335.D  | M8400-P-D(5) | SA    | Cl6(161) | 6875052 |       |
| SM0419.S  | M7336.D  | IE08         | CCV   | Cl6(161) | 8230646 |       |
| SM0419.S  | M7337.D  | M8401-P-D(5) | SA    | Cl6(161) | 6757821 |       |
| SM0419.S  | M7338.D  | M8402-P-D(5) | SA    | Cl6(161) | 7357294 |       |
| SM0419.S  | M7339.D  | M8404-P-D(5) | SA    | Cl6(161) | 6862649 |       |
| SM0419.S  | M7340.D  | M8405-P-D(5) | SA    | Cl6(161) | 6863940 |       |
| SM0419.S  | M7341.D  | IE07         | CCV   | Cl6(161) | 7495292 |       |
| SM0420.S  | M7364.D  | IE07         | CCV   | Cl6(161) | 7017547 |       |
| SM0420.S  | M7365.D  | M8402-P-D(7) | SA    | Cl6(161) | 4957816 |       |
| SM0420.S  | M7366.D  | IE08         | CCV   | Cl6(161) | 5960128 |       |
| SM0424.S  | M7603.D  | IE07         | CCV   | Cl6(161) | 7849561 |       |
| SM0424.S  | M7613.D  | M8363-P-D(5) | SA    | Cl6(161) | 6512860 |       |
| SM0424.S  | M7614.D  | IE08         | CCV   | Cl6(161) | 7233456 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96)    | 12822282 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96)    | 12416297 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96)    | 13716870 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96)    | 14992953 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96)    | 15446142 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96)    | 15534608 |
|           |         |        |       | <b>L3</b>  | 13716870 |
|           |         |        |       | <b>(+)</b> | 27433739 |
|           |         |        |       | <b>(-)</b> | 6858435  |

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|----------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | CI5(96) | 13890681 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | CI5(96) | 13940421 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | CI5(96) | 14387734 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | CI5(96) | 13884990 |       |
| SM0418.S  | M7255.D  | M8152-P(2)    | SA    | CI5(96) | 14511731 |       |
| SM0418.S  | M7256.D  | M8153-P(2)    | SA    | CI5(96) | 13546422 |       |
| SM0418.S  | M7257.D  | M8154-P(2)    | SA    | CI5(96) | 12851167 |       |
| SM0418.S  | M7258.D  | M8155-P(2)    | SA    | CI5(96) | 12441652 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | CI5(96) | 15537356 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | CI5(96) | 17019126 |       |
| SM0418.S  | M7261.D  | M8356-P(2)    | SA    | CI5(96) | 19012656 |       |
| SM0418.S  | M7262.D  | M8357-P(2)    | SA    | CI5(96) | 16071084 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | CI5(96) | 16568807 |       |
| SM0418.S  | M7264.D  | M8360-P(2)    | SA    | CI5(96) | 12106572 |       |
| SM0418.S  | M7265.D  | M8361-P(2)    | SA    | CI5(96) | 16526564 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | CI5(96) | 12375657 |       |
| SM0418.S  | M7267.D  | M8363-P(2)    | SA    | CI5(96) | 13728083 |       |
| SM0418.S  | M7268.D  | M8368-P(2)    | SA    | CI5(96) | 16355129 |       |
| SM0418.S  | M7269.D  | M8369-P(2)    | SA    | CI5(96) | 15394826 |       |
| SM0418.S  | M7270.D  | M8370-P(2)    | SA    | CI5(96) | 18282342 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | CI5(96) | 14120078 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | CI5(96) | 13782385 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | CI5(96) | 13686861 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | CI5(96) | 18505949 |       |
| SM0418.S  | M7274A.D | M8400-P(2)    | SA    | CI5(96) | 17718049 |       |
| SM0418.S  | M7274B.D | M8401-P(2)    | SA    | CI5(96) | 18887710 |       |
| SM0418.S  | M7274D.D | M8404-P(2)    | SA    | CI5(96) | 13258912 |       |
| SM0418.S  | M7274E.D | M8405-P(2)    | SA    | CI5(96) | 13318212 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | CI5(96) | 16725519 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | CI5(96) | 17239597 |       |
| SM0418.S  | M7274H.D | M8402-P-D(4)  | SA    | CI5(96) | 25778192 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | CI5(96) | 17180000 |       |

## Internal Standard Area Report

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**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 2

| SEQUENCE: | FILE:    | LEVEL:       | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|----------|--------------|-------|---------|----------|-------|
| SM0418.S  | M7274J.D | M8405-P-D(4) | SA    | CI5(96) | 15400055 |       |
| SM0418.S  | M7274K.D | IE07         | CCV   | CI5(96) | 16037807 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4) | SA    | CI5(96) | 14052605 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4) | SA    | CI5(96) | 15867156 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4) | SA    | CI5(96) | 14300558 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4) | SA    | CI5(96) | 14612568 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4) | SA    | CI5(96) | 14517179 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4) | SA    | CI5(96) | 16252217 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4) | SA    | CI5(96) | 15128658 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4) | SA    | CI5(96) | 15340131 |       |
| SM0418.S  | M7285.D  | IE07         | CCV   | CI5(96) | 19063819 |       |
| SM0418.S  | M7286.D  | M8362-P-D(4) | SA    | CI5(96) | 14963886 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4) | SA    | CI5(96) | 15614619 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4) | SA    | CI5(96) | 15871908 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4) | SA    | CI5(96) | 14761140 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4) | SA    | CI5(96) | 15166553 |       |
| SM0418.S  | M7292.D  | IE08         | CCV   | CI5(96) | 17840261 |       |
| SM0419.S  | M7325.D  | IE07         | CCV   | CI5(96) | 17137537 |       |
| SM0419.S  | M7326.D  | M8152-P-D(5) | SA    | CI5(96) | 15194168 |       |
| SM0419.S  | M7327.D  | M8153-P-D(5) | SA    | CI5(96) | 14969586 |       |
| SM0419.S  | M7328.D  | M8154-P-D(5) | SA    | CI5(96) | 15313576 |       |
| SM0419.S  | M7329.D  | M8155-P-D(5) | SA    | CI5(96) | 14533596 |       |
| SM0419.S  | M7330.D  | M8356-P-D(5) | SA    | CI5(96) | 14948996 |       |
| SM0419.S  | M7331.D  | M8357-P-D(5) | SA    | CI5(96) | 15083826 |       |
| SM0419.S  | M7332.D  | M8368-P-D(5) | SA    | CI5(96) | 15093250 |       |
| SM0419.S  | M7333.D  | M8369-P-D(5) | SA    | CI5(96) | 15506392 |       |
| SM0419.S  | M7334.D  | M8370-P-D(5) | SA    | CI5(96) | 15005989 |       |
| SM0419.S  | M7335.D  | M8400-P-D(5) | SA    | CI5(96) | 15428932 |       |
| SM0419.S  | M7336.D  | IE08         | CCV   | CI5(96) | 19242427 |       |
| SM0419.S  | M7337.D  | M8401-P-D(5) | SA    | CI5(96) | 16535400 |       |
| SM0419.S  | M7338.D  | M8402-P-D(5) | SA    | CI5(96) | 16322694 |       |
| SM0419.S  | M7339.D  | M8404-P-D(5) | SA    | CI5(96) | 15509030 |       |
| SM0419.S  | M7340.D  | M8405-P-D(5) | SA    | CI5(96) | 16042110 |       |
| SM0419.S  | M7341.D  | IE07         | CCV   | CI5(96) | 17098743 |       |
| SM0420.S  | M7364.D  | IE07         | CCV   | CI5(96) | 13978204 |       |
| SM0420.S  | M7365.D  | M8402-P-D(7) | SA    | CI5(96) | 11702570 |       |
| SM0420.S  | M7366.D  | IE08         | CCV   | CI5(96) | 14899100 |       |
| SM0424.S  | M7603.D  | IE07         | CCV   | CI5(96) | 19118951 |       |
| SM0424.S  | M7613.D  | M8363-P-D(5) | SA    | CI5(96) | 15556028 |       |
| SM0424.S  | M7614.D  | IE08         | CCV   | CI5(96) | 20391286 |       |

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**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161)   | 28199596 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161)   | 27129752 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161)   | 29503850 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161)   | 34497986 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161)   | 34872167 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161)   | 28894537 |
|           |         |        |       | <b>L3</b>  | 29503850 |
|           |         |        |       | <b>(+)</b> | 59007699 |
|           |         |        |       | <b>(-)</b> | 14751925 |

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|----------|---------------|-------|----------|----------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | Cl6(161) | 30447371 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | Cl6(161) | 30692359 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | Cl6(161) | 29611578 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | Cl6(161) | 27061528 |       |
| SM0418.S  | M7255.D  | M8152-P(2)    | SA    | Cl6(161) | 22817839 |       |
| SM0418.S  | M7256.D  | M8153-P(2)    | SA    | Cl6(161) | 18882860 |       |
| SM0418.S  | M7257.D  | M8154-P(2)    | SA    | Cl6(161) | 19706908 |       |
| SM0418.S  | M7258.D  | M8155-P(2)    | SA    | Cl6(161) | 19123017 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | Cl6(161) | 35992629 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | Cl6(161) | 38749000 |       |
| SM0418.S  | M7261.D  | M8356-P(2)    | SA    | Cl6(161) | 21270500 |       |
| SM0418.S  | M7262.D  | M8357-P(2)    | SA    | Cl6(161) | 22120995 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | Cl6(161) | 37993668 |       |
| SM0418.S  | M7264.D  | M8360-P(2)    | SA    | Cl6(161) | 23766636 |       |
| SM0418.S  | M7265.D  | M8361-P(2)    | SA    | Cl6(161) | 37193038 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | Cl6(161) | 25520812 |       |
| SM0418.S  | M7267.D  | M8363-P(2)    | SA    | Cl6(161) | 22093566 |       |
| SM0418.S  | M7268.D  | M8368-P(2)    | SA    | Cl6(161) | 20039548 |       |
| SM0418.S  | M7269.D  | M8369-P(2)    | SA    | Cl6(161) | 22688283 |       |
| SM0418.S  | M7270.D  | M8370-P(2)    | SA    | Cl6(161) | 21393245 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | Cl6(161) | 33224675 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | Cl6(161) | 31704327 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | Cl6(161) | 31391845 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | Cl6(161) | 45692334 |       |
| SM0418.S  | M7274A.D | M8400-P(2)    | SA    | Cl6(161) | 22703015 |       |
| SM0418.S  | M7274B.D | M8401-P(2)    | SA    | Cl6(161) | 21321835 |       |
| SM0418.S  | M7274D.D | M8404-P(2)    | SA    | Cl6(161) | 21017691 |       |
| SM0418.S  | M7274E.D | M8405-P(2)    | SA    | Cl6(161) | 22281197 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | Cl6(161) | 40197084 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | Cl6(161) | 40703958 |       |
| SM0418.S  | M7274H.D | M8402-P-D(4)  | SA    | Cl6(161) | 32087613 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | Cl6(161) | 39175001 |       |

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**BATCH:** 14-0493

**METHOD:** MM0417B.M

**SIGNAL:** 2

| SEQUENCE: | FILE:    | LEVEL:       | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|----------|--------------|-------|----------|----------|-------|
| SM0418.S  | M7274J.D | M8405-P-D(4) | SA    | Cl6(161) | 34738680 |       |
| SM0418.S  | M7274K.D | IE07         | CCV   | Cl6(161) | 38634922 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4) | SA    | Cl6(161) | 33291203 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4) | SA    | Cl6(161) | 38113503 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4) | SA    | Cl6(161) | 32571241 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4) | SA    | Cl6(161) | 33562683 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4) | SA    | Cl6(161) | 31795320 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4) | SA    | Cl6(161) | 33831910 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4) | SA    | Cl6(161) | 36734170 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4) | SA    | Cl6(161) | 35625740 |       |
| SM0418.S  | M7285.D  | IE07         | CCV   | Cl6(161) | 46796149 |       |
| SM0418.S  | M7286.D  | M8362-P-D(4) | SA    | Cl6(161) | 34699727 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4) | SA    | Cl6(161) | 35348992 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4) | SA    | Cl6(161) | 37391478 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4) | SA    | Cl6(161) | 34597478 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4) | SA    | Cl6(161) | 35188862 |       |
| SM0418.S  | M7292.D  | IE08         | CCV   | Cl6(161) | 41573042 |       |
| SM0419.S  | M7325.D  | IE07         | CCV   | Cl6(161) | 43563283 |       |
| SM0419.S  | M7326.D  | M8152-P-D(5) | SA    | Cl6(161) | 35447285 |       |
| SM0419.S  | M7327.D  | M8153-P-D(5) | SA    | Cl6(161) | 36607115 |       |
| SM0419.S  | M7328.D  | M8154-P-D(5) | SA    | Cl6(161) | 36886426 |       |
| SM0419.S  | M7329.D  | M8155-P-D(5) | SA    | Cl6(161) | 33301359 |       |
| SM0419.S  | M7330.D  | M8356-P-D(5) | SA    | Cl6(161) | 36016798 |       |
| SM0419.S  | M7331.D  | M8357-P-D(5) | SA    | Cl6(161) | 36224030 |       |
| SM0419.S  | M7332.D  | M8368-P-D(5) | SA    | Cl6(161) | 35486816 |       |
| SM0419.S  | M7333.D  | M8369-P-D(5) | SA    | Cl6(161) | 36969050 |       |
| SM0419.S  | M7334.D  | M8370-P-D(5) | SA    | Cl6(161) | 34778869 |       |
| SM0419.S  | M7335.D  | M8400-P-D(5) | SA    | Cl6(161) | 36527958 |       |
| SM0419.S  | M7336.D  | IE08         | CCV   | Cl6(161) | 44008527 |       |
| SM0419.S  | M7337.D  | M8401-P-D(5) | SA    | Cl6(161) | 38967966 |       |
| SM0419.S  | M7338.D  | M8402-P-D(5) | SA    | Cl6(161) | 38141330 |       |
| SM0419.S  | M7339.D  | M8404-P-D(5) | SA    | Cl6(161) | 36256897 |       |
| SM0419.S  | M7340.D  | M8405-P-D(5) | SA    | Cl6(161) | 38881919 |       |
| SM0419.S  | M7341.D  | IE07         | CCV   | Cl6(161) | 42059798 |       |
| SM0420.S  | M7364.D  | IE07         | CCV   | Cl6(161) | 33572612 |       |
| SM0420.S  | M7365.D  | M8402-P-D(7) | SA    | Cl6(161) | 26308241 |       |
| SM0420.S  | M7366.D  | IE08         | CCV   | Cl6(161) | 33015851 |       |
| SM0424.S  | M7603.D  | IE07         | CCV   | Cl6(161) | 46749872 |       |
| SM0424.S  | M7613.D  | M8363-P-D(5) | SA    | Cl6(161) | 37851303 |       |
| SM0424.S  | M7614.D  | IE08         | CCV   | Cl6(161) | 47356837 |       |



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**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417F.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2038180 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2539311 |

L3 2225995  
 (+) 4451990  
 (-) 1112997

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|----------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | Cl5(96) | 2503423 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | Cl5(96) | 2558363 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | Cl5(96) | 2768412 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | Cl5(96) | 3596020 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | Cl5(96) | 3374379 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | Cl5(96) | 3503800 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | Cl5(96) | 2960462 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | Cl5(96) | 3096478 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | Cl5(96) | 2881746 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | Cl5(96) | 3284342 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | Cl5(96) | 3425966 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | Cl5(96) | 3575964 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | Cl5(96) | 3061896 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | Cl5(96) | 3564547 |       |
| SM0418.S  | M7274J.D | M8405-P-D(4)  | SA    | Cl5(96) | 3234848 |       |
| SM0418.S  | M7274K.D | IE07          | CCV   | Cl5(96) | 3219252 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4)  | SA    | Cl5(96) | 3406914 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4)  | SA    | Cl5(96) | 3482089 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4)  | SA    | Cl5(96) | 3506862 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4)  | SA    | Cl5(96) | 3113555 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4)  | SA    | Cl5(96) | 3540995 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4)  | SA    | Cl5(96) | 3728203 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4)  | SA    | Cl5(96) | 3458013 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4)  | SA    | Cl5(96) | 2992240 |       |
| SM0418.S  | M7285.D  | IE07          | CCV   | Cl5(96) | 3582175 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4)  | SA    | Cl5(96) | 3086995 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4)  | SA    | Cl5(96) | 3435517 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4)  | SA    | Cl5(96) | 3486398 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4)  | SA    | Cl5(96) | 3611020 |       |
| SM0418.S  | M7292.D  | IE08          | CCV   | Cl5(96) | 3887025 |       |
| SM0420.S  | M7364.D  | IE07          | CCV   | Cl5(96) | 2944764 |       |



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**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417F.M

**SIGNAL:** 1

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0420.S         | M7365.D      | M8402-P-D(7)  | SA           | CI5(96)      | 2245288      |              |
| SM0420.S         | M7366.D      | IE08          | CCV          | CI5(96)      | 2882190      |              |

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**BATCH:** 14-0493

**METHOD:** MM0417F.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 12872032 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 13386960 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 13612237 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 14869473 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 15494530 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 15194166 |

L3 13612237  
 (+) 27224474  
 (-) 6806118

| SEQUENCE: | FILE:    | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|----------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D  | HY06 ICC      | ICC   | Cl5(96) | 13936712 |       |
| SM0418.S  | M7252.D  | IE08          | CCV   | Cl5(96) | 13786769 |       |
| SM0418.S  | M7253.D  | CD580PB-P(0)  | PB    | Cl5(96) | 14176081 |       |
| SM0418.S  | M7254.D  | CD581LCS-P(0) | LCS   | Cl5(96) | 13871209 |       |
| SM0418.S  | M7259.D  | M8167-P(2)    | SA    | Cl5(96) | 15625241 |       |
| SM0418.S  | M7260.D  | M8167DUP-P(2) | QADU  | Cl5(96) | 17007082 |       |
| SM0418.S  | M7263.D  | IE07          | CCV   | Cl5(96) | 16567909 |       |
| SM0418.S  | M7266.D  | M8362-P(2)    | SA    | Cl5(96) | 12375657 |       |
| SM0418.S  | M7271.D  | M8387-P(2)    | SA    | Cl5(96) | 14299959 |       |
| SM0418.S  | M7272.D  | M8387MS-P(0)  | MS    | Cl5(96) | 13714712 |       |
| SM0418.S  | M7273.D  | M8387MSD-P(0) | MSD   | Cl5(96) | 13812909 |       |
| SM0418.S  | M7274.D  | IE08          | CCV   | Cl5(96) | 18214041 |       |
| SM0418.S  | M7274F.D | M8400-P-D(4)  | SA    | Cl5(96) | 16725519 |       |
| SM0418.S  | M7274G.D | M8401-P-D(4)  | SA    | Cl5(96) | 17016023 |       |
| SM0418.S  | M7274I.D | M8404-P-D(4)  | SA    | Cl5(96) | 16416173 |       |
| SM0418.S  | M7274J.D | M8405-P-D(4)  | SA    | Cl5(96) | 15400055 |       |
| SM0418.S  | M7274K.D | IE07          | CCV   | Cl5(96) | 16073399 |       |
| SM0418.S  | M7275.D  | M8152-P-D(4)  | SA    | Cl5(96) | 15026665 |       |
| SM0418.S  | M7276.D  | M8153-P-D(4)  | SA    | Cl5(96) | 15771960 |       |
| SM0418.S  | M7277.D  | M8154-P-D(4)  | SA    | Cl5(96) | 14149338 |       |
| SM0418.S  | M7278.D  | M8155-P-D(4)  | SA    | Cl5(96) | 14629868 |       |
| SM0418.S  | M7281.D  | M8356-P-D(4)  | SA    | Cl5(96) | 14451610 |       |
| SM0418.S  | M7282.D  | M8357-P-D(4)  | SA    | Cl5(96) | 16127020 |       |
| SM0418.S  | M7283.D  | M8360-P-D(4)  | SA    | Cl5(96) | 15128658 |       |
| SM0418.S  | M7284.D  | M8361-P-D(4)  | SA    | Cl5(96) | 15236400 |       |
| SM0418.S  | M7285.D  | IE07          | CCV   | Cl5(96) | 18940266 |       |
| SM0418.S  | M7287.D  | M8363-P-D(4)  | SA    | Cl5(96) | 15668119 |       |
| SM0418.S  | M7288.D  | M8368-P-D(4)  | SA    | Cl5(96) | 15574293 |       |
| SM0418.S  | M7289.D  | M8369-P-D(4)  | SA    | Cl5(96) | 14870318 |       |
| SM0418.S  | M7290.D  | M8370-P-D(4)  | SA    | Cl5(96) | 15106152 |       |
| SM0418.S  | M7292.D  | IE08          | CCV   | Cl5(96) | 17874408 |       |
| SM0420.S  | M7364.D  | IE07          | CCV   | Cl5(96) | 13887062 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0493

**METHOD:** MM0417F.M

**SIGNAL:** 2

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0420.S         | M7365.D      | M8402-P-D(7)  | SA           | CI5(96)      | 11672286     |              |
| SM0420.S         | M7366.D      | IE08          | CCV          | CI5(96)      | 15017810     |              |

## BATTELLE - DUXBURY OPERATIONS SAMPLE PREPARATION RECORDS

|   |                              |
|---|------------------------------|
| <b><u>Project Title(s)</u></b>                | <b><u>Project No.(s)</u></b> |
| USACE/NAE - New Bedford Harbor LTM Study      | 100053747                    |
| <b>14-0493</b>                                |                              |
| <b>USACE-NAE New Bedford Harbor LTM Study</b> |                              |
| <b>SED</b>                                    |                              |
| SOP Numbers (see workplan for modifications)  |                              |
| ExtractionSOP No.                             | 5-192                        |
| CleanupSOP No.                                | 5-327                        |
| CleanupSOP No.                                | 5-328                        |

| This Batch Contains The Following Samples: |            |         |            |         |
|--|------------|---------|------------|---------|
| CD580PB-P                                  | M8167-P    | M8362-P | M8387MS-P  | M8405-P |
| CD581LCS-P                                 | M8167DUP-P | M8363-P | M8387MSD-P |         |
| M8152-P                                    | M8356-P    | M8368-P | M8400-P    |         |
| M8153-P                                    | M8357-P    | M8369-P | M8401-P    |         |
| M8154-P                                    | M8360-P    | M8370-P | M8402-P    |         |
| M8155-P                                    | M8361-P    | M8387-P | M8404-P    |         |

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Samuel Guimaraes

| Approved By:     | Date       | Initials |
|------------------|------------|----------|
| Samuel Guimaraes | 11/17/2014 | SG       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|   |  |
|---|--|
| <b>Requested On/By:</b> 10/17/2014 SG         | <b>Purpose:</b> Sample Preparation       |
| <b>Relinquished On/By:</b> 10/17/2014 SAH     | <b>Last Activity:</b> Return             |
| <b>Accepted On/By:</b> 10/17/2014 SG          | <b>Returned On/To:</b> 10/17/2014 MDS    |
| <b>Stored In Facility:</b> Sample Preparation | <b>Returned To Facility:</b> Custody: NA |
| <b>Stored Until:</b> 10/17/2014               |  |
| <b>Stored Comment:</b> NA                     | <b>Returned Comment:</b> NA              |

| No.                  | BDO-ID: | Ctrs | *  | Condition:                 | Custody Comment: |
|----------------------|---------|------|----|----------------------------|------------------|
| 1                    | M8152   | 1    | -- | Intact                     | NA               |
| 2                    | M8153   | 1    | -- | Intact                     | NA               |
| 3                    | M8154   | 1    | -- | Intact                     | NA               |
| 4                    | M8155   | 1    | -- | Intact                     | NA               |
| 5                    | M8167   | 1    | -- | Intact                     | NA               |
| 6                    | M8356   | 1    | -- | Intact                     | NA               |
| 7                    | M8357   | 1    | -- | Intact                     | NA               |
| 8                    | M8360   | 1    | -- | Intact                     | NA               |
| 9                    | M8361   | 1    | -- | Intact                     | NA               |
| 10                   | M8362   | 1    | -- | Intact                     | NA               |
| 11                   | M8363   | 1    | -- | Intact                     | NA               |
| 12                   | M8368   | 1    | -- | Intact                     | NA               |
| 13                   | M8369   | 1    | -- | Intact                     | NA               |
| 14                   | M8370   | 1    | -- | Intact                     | NA               |
| 15                   | M8387   | 1    | -- | Intact                     | NA               |
| 16                   | M8400   | 1    | -- | Intact                     | NA               |
| 17                   | M8401   | 1    | -- | Intact                     | NA               |
| 18                   | M8402   | 1    | -- | Intact                     | NA               |
| 19                   | M8404   | 1    | -- | Intact                     | NA               |
| 20                   | M8405   | 1    | -- | Intact                     | NA               |
| <b>Total Samples</b> |         | 20   |    | * "C" = Consumed Container |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE IDENTIFICATION PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Description                          |
|------------|--------------------------------------|
| CD580PB-P  | Procedural Blank                     |
| CD581LCS-P | Laboratory Control Sample            |
| M8152-P    | NBH14-0001                           |
| M8153-P    | NBH14-0005                           |
| M8154-P    | NBH14-0009                           |
| M8155-P    | NBH14-0013                           |
| M8167-P    | NBH14-0065                           |
| M8167DUP-P | Lab Duplicate of NBH14-0065          |
| M8356-P    | NBH14-0207                           |
| M8357-P    | NBH14-0211                           |
| M8360-P    | NBH14-0220                           |
| M8361-P    | NBH14-0224                           |
| M8362-P    | NBH14-0228                           |
| M8363-P    | NBH14-0232                           |
| M8368-P    | NBH14-0245                           |
| M8369-P    | NBH14-0249                           |
| M8370-P    | NBH14-0253                           |
| M8387-P    | NBH14-0101                           |
| M8387MS-P  | Matrix Spike of NBH14-0101           |
| M8387MSD-P | Matrix Spike Duplicate of NBH14-0101 |
| M8400-P    | NBH14-0153                           |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

**BATTELLE - DUXBURY OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study  
SED**

| <b>Sample ID</b> | <b>Description</b> |
|------------------|--------------------|
| M8401-P          | NBH14-0157         |
| M8402-P          | NBH14-0161         |
| M8404-P          | NBH14-0169         |
| M8405-P          | NBH14-0173         |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD580PB-P  | NA    | -- | NA           | NA              | NA          | 10.17              | 90.25     | 9.75       | 9.18               |
| CD581LCS-P | NA    | -- | NA           | NA              | NA          | 10.87              | 90.25     | 9.75       | 9.81               |
| M8152-P    | 1     | -- | 1.09         | 2.09            | 1.99        | 0.98               | 90.00     | 10.00      | 0.88               |
| M8153-P    | 1     | -- | 1.09         | 3.09            | 2.97        | 1.01               | 94.00     | 6.00       | 0.95               |
| M8154-P    | 1     | -- | 1.10         | 3.10            | 3.07        | 1.00               | 98.50     | 1.50       | 0.99               |
| M8155-P    | 1     | -- | 1.11         | 3.11            | 2.81        | 1.00               | 85.00     | 15.00      | 0.85               |
| M8167-P    | 1     | -- | 1.12         | 3.06            | 3.04        | 1.00               | 98.97     | 1.03       | 0.99               |
| M8167DUP-P | 1     | -- | 1.10         | 3.06            | 3.05        | 1.01               | 99.49     | 0.51       | 1.00               |
| M8356-P    | 1     | -- | 1.12         | 3.09            | 2.86        | 1.02               | 88.32     | 11.68      | 0.90               |
| M8357-P    | 1     | -- | 1.11         | 3.10            | 2.86        | 1.06               | 87.94     | 12.06      | 0.93               |
| M8360-P    | 1     | -- | 1.10         | 3.06            | 2.63        | 1.05               | 78.06     | 21.94      | 0.82               |
| M8361-P    | 1     | -- | 1.10         | 3.26            | 3.24        | 1.11               | 99.07     | 0.93       | 1.10               |
| M8362-P    | 1     | -- | 1.10         | 3.02            | 2.64        | 1.08               | 80.21     | 19.79      | 0.87               |
| M8363-P    | 1     | -- | 1.10         | 3.10            | 3.03        | 1.00               | 96.50     | 3.50       | 0.97               |
| M8368-P    | 1     | -- | 1.12         | 3.18            | 2.73        | 1.00               | 78.16     | 21.84      | 0.78               |
| M8369-P    | 1     | -- | 1.10         | 3.08            | 2.86        | 0.99               | 88.89     | 11.11      | 0.88               |
| M8370-P    | 1     | -- | 1.13         | 3.36            | 3.26        | 1.01               | 95.52     | 4.48       | 0.96               |
| M8387-P    | 1     | -- | 1.11         | 3.35            | 3.34        | 10.06              | 99.55     | 0.45       | 10.01              |
| M8387MS-P  | 1     | -- | 1.10         | 3.13            | 3.13        | 5.01               | 100.00    | 0.00       | 5.01               |
| M8387MSD-P | 1     | -- | 1.12         | 3.18            | 3.17        | 5.00               | 99.51     | 0.49       | 4.98               |
| M8400-P    | 1     | -- | 1.10         | 3.13            | 2.45        | 1.04               | 66.50     | 33.50      | 0.69               |
| M8401-P    | 1     | -- | 1.12         | 3.05            | 2.99        | 1.01               | 96.89     | 3.11       | 0.98               |
| M8402-P    | 1     | -- | 1.12         | 3.18            | 3.12        | 1.01               | 97.09     | 2.91       | 0.98               |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed



## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| M8404-P    | 1     | -- | 1.10         | 3.24            | 3.00        | 1.03               | 88.79     | 11.21      | 0.91               |
| M8405-P    | 1     | -- | 1.13         | 3.18            | 3.12        | 1.02               | 97.07     | 2.93       | 0.99               |

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>Validation of:</b><br>Wet Wt. | <b>Performed:</b><br>11/17/14 SG |
|----------------------------------|----------------------------------|

| Sample ID: | Comments:   | Reference: |
|------------|---|------------|
| CD580PB-P  | Average of percent dry weights from authentic samples in Batch No. 14-0493 USACE-NAE New Bedford Harbor LTM Study | NA         |
| CD581LCS-P | Average of percent dry weights from authentic samples in Batch No. 14-0493 USACE-NAE New Bedford Harbor LTM Study | NA         |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| CD580PB-P  | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| CD581LCS-P | HX10        | LCS/MS | 7        | 75             | 10/20/14 SG               | SAH       | NA      |
| CD581LCS-P | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8152-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8153-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8154-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8155-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8167-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8167DUP-P | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8356-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8357-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8360-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8361-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8362-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8363-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8368-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8369-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8370-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8387-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8387MS-P  | HX10        | LCS/MS | 7        | 125            | 10/20/14 SG               | SAH       | NA      |
| M8387MS-P  | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8387MSD-P | HX10        | LCS/MS | 7        | 125            | 10/20/14 SG               | SAH       | NA      |
| M8387MSD-P | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8400-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8401-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8402-P    | ID59        | SIS    | 3        | 400            | 10/20/14 SG               | SAH       | NA      |

## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | Standard ID | Type | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|-----------|-------------|------|----------|----------------|---------------------------|-----------|---------|
| M8404-P   | ID59        | SIS  | 3        | 400            | 10/20/14 SG               | SAH       | NA      |
| M8405-P   | ID59        | SIS  | 3        | 400            | 10/20/14 SG               | SAH       | NA      |

Syringes/Pipettes Used:

| Std ID | Type    | Syr/Pip   |
|--------|---------|-----------|
| HX10   | Pipette | G0400231B |
| ID59   | Pipette | B1100330B |



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**BATTELLE - DUXBURY OPERATIONS  
SAMPLE EXTRACTION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|------------|------------------|-------------------|------------------|----------|-----------|-------|---------|
| CD580PB-P  | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| CD581LCS-P | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8152-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8153-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8154-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8155-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8167-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8167DUP-P | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8356-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8357-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8360-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8361-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8362-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8363-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8368-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8369-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8370-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8387-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8387MS-P  | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8387MSD-P | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8400-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8401-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8402-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8404-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |
| M8405-P    | 10/20/14 SG      | 10/20/14 SG       | 10/20/14 SG      | NA       | NA        | 64    | NA      |

## BATTELLE - DUXBURY OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|

**Reagents:**

| Name           | Expires  | Lot No     | Procedure  | Comments |
|----------------|----------|------------|--|----------|
| Sodium Sulfate | 11/04/14 | 0000081084 | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |

**Solvents:**

| Name   | Lot No     | Comments  |
|--------|------------|---|
| DCM    | 0000080772 |   |
| Hexane | 0000059691 | Samples solvent exchanged during concentration. |



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT CLEANUP FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| CD580PB-P(0)  | 10/23/14 | SG    | NA       |
| CD581LCS-P(0) | 10/23/14 | SG    | NA       |
| M8152-P(0)    | 10/23/14 | SG    | NA       |
| M8153-P(0)    | 10/23/14 | SG    | NA       |
| M8154-P(0)    | 10/23/14 | SG    | NA       |
| M8155-P(0)    | 10/23/14 | SG    | NA       |
| M8167-P(0)    | 10/23/14 | SG    | NA       |
| M8167DUP-P(0) | 10/23/14 | SG    | NA       |
| M8356-P(0)    | 10/23/14 | SG    | NA       |
| M8357-P(0)    | 10/23/14 | SG    | NA       |
| M8360-P(0)    | 10/23/14 | SG    | NA       |
| M8361-P(0)    | 10/23/14 | SG    | NA       |
| M8362-P(0)    | 10/23/14 | SG    | NA       |
| M8363-P(0)    | 10/23/14 | SG    | NA       |
| M8368-P(0)    | 10/23/14 | SG    | NA       |
| M8369-P(0)    | 10/23/14 | SG    | NA       |
| M8370-P(0)    | 10/23/14 | SG    | NA       |
| M8387-P(0)    | 10/23/14 | SG    | NA       |

## BATTELLE - DUXBURY OPERATIONS EXTRACT CLEANUP FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| M8387MS-P(0)  | 10/23/14 | SG    | NA       |
| M8387MSD-P(0) | 10/23/14 | SG    | NA       |
| M8400-P(0)    | 10/23/14 | SG    | NA       |
| M8401-P(0)    | 10/23/14 | SG    | NA       |
| M8402-P(0)    | 10/23/14 | SG    | NA       |
| M8404-P(0)    | 10/23/14 | SG    | NA       |
| M8405-P(0)    | 10/23/14 | SG    | NA       |

**Cleanup:**

Copper Cleanup

**Reagents:**

| Name             | Expires  | Lot No    | Procedure                                  |
|------------------|----------|-----------|--|
| Activated Copper | 10/23/14 | MKBN5574V | Activated according to Cleanup SOP (5-328) |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| CD580PB-P(0)  | 10/22/14 | SG    | NA                       |
| CD581LCS-P(0) | 10/22/14 | SG    | NA                       |
| M8152-P(0)    | 10/22/14 | SG    | NA                       |
| M8153-P(0)    | 10/22/14 | SG    | NA                       |
| M8154-P(0)    | 10/22/14 | SG    | NA                       |
| M8155-P(0)    | 10/22/14 | SG    | NA                       |
| M8167-P(0)    | 10/22/14 | SG    | NA                       |
| M8167DUP-P(0) | 10/22/14 | SG    | NA                       |
| M8356-P(0)    | 10/22/14 | SG    | NA                       |
| M8357-P(0)    | 10/22/14 | SG    | NA                       |
| M8360-P(0)    | 10/22/14 | SG    | NA                       |
| M8361-P(0)    | 10/22/14 | SG    | NA                       |
| M8362-P(0)    | 10/22/14 | SG    | NA                       |
| M8363-P(0)    | 10/22/14 | SG    | NA                       |
| M8368-P(0)    | 10/22/14 | SG    | NA                       |
| M8369-P(0)    | 10/22/14 | SG    | NA                       |
| M8370-P(0)    | 10/22/14 | SG    | NA                       |



## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| M8387-P(0)    | 10/22/14 | SG    | NA                       |
| M8387MS-P(0)  | 10/22/14 | SG    | NA                       |
| M8387MSD-P(0) | 10/22/14 | SG    | NA                       |
| M8400-P(0)    | 10/22/14 | SG    | NA                       |
| M8401-P(0)    | 10/22/14 | SG    | NA                       |
| M8402-P(0)    | 10/22/14 | SG    | NA                       |
| M8404-P(0)    | 10/22/14 | SG    | NA                       |
| M8405-P(0)    | 10/22/14 | SG    | NA                       |

**Column Diameter:** 13 mm **Procedure Comment:**

**Elution Volume:** 15 mL

**Solvents**

| Name   | Lot No     |
|--------|------------|
| Hexane | 0000059693 |

**Reagents**

| Weight g | Name     | Expires  | Lot No         | Procedure  |
|----------|----------|----------|----------------|--|
| 1.00     | Florisil | 10/22/14 | 796462-1991484 | Baked at 110 °C for more than 24 hours (SPE columns not baked) |
| 1.00     | Florisil | 10/22/14 | BCBN3313V      | Baked at 110 °C for more than 24 hours (SPE columns not baked) |

**Fractions**

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| CD580PB-P  | 0 | -- | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| CD581LCS-P | 0 | -- | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8152-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8152-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8152-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8152-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8152-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8152-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8152-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8152-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8152-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8153-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8153-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8153-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8153-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8153-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8153-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8153-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8153-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8153-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8154-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8154-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8154-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| M8154-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8154-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8154-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8154-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8154-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8154-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8155-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8155-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8155-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8155-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8155-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8155-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8155-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8155-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8155-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8167-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8167-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8167-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8167-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8167-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8167-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8167-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8167-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8167-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8167DUP-P | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract      |   | *  | Extract Date           | Source       |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|--------------|---|----|------------------------|--------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name         | # |    |                        | Name         | # |                          |               |               |                |               |
| M8167DUP-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8167DUP-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8167DUP-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8167DUP-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8167DUP-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8167DUP-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8167DUP-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8167DUP-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8356-P      | 0 | C  | 10/20/2014 12:30:00 PM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8356-P      | 2 | -- | 10/24/2014 10:45:00 AM | M8356-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8356-P-D    | 3 | C  | 10/24/2014 10:45:00 AM | M8356-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8356-P-D    | 4 | -- | 10/24/2014 10:50:00 AM | M8356-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8356-P-D    | 5 | -- | 10/24/2014 10:50:00 AM | M8356-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8357-P      | 0 | C  | 10/20/2014 12:30:00 PM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8357-P      | 2 | -- | 10/24/2014 10:45:00 AM | M8357-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8357-P-D    | 3 | C  | 10/24/2014 10:45:00 AM | M8357-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8357-P-D    | 4 | -- | 10/24/2014 10:50:00 AM | M8357-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8357-P-D    | 5 | -- | 10/24/2014 10:50:00 AM | M8357-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8360-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8360-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8360-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8360-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8360-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8360-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8360-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8360-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8360-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8361-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8361-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8361-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8361-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8361-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8361-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8361-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8361-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8361-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8362-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8362-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8362-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8362-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8362-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8362-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8362-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8362-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8362-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8363-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8363-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8363-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8363-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8363-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8363-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8363-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8363-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8363-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8368-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8368-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8368-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8368-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8368-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8368-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8368-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8368-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8368-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8369-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8369-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8369-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8369-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8369-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| M8369-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8369-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8369-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8369-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8370-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8370-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8370-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8370-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8370-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8370-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8370-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8370-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8370-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8387-P    | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8387-P    | 2 | -- | 10/24/2014 10:45:00 AM | M8387-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8387-P-D  | 3 | C  | 10/24/2014 10:45:00 AM | M8387-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8387-P-D  | 4 | -- | 10/24/2014 10:50:00 AM | M8387-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8387-P-D  | 5 | -- | 10/24/2014 10:50:00 AM | M8387-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8387MS-P  | 0 | -- | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8387MSD-P | 0 | -- | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

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**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8400-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8400-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8400-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8400-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8400-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8400-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8400-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8400-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8400-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8401-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8401-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8401-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8401-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8401-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8401-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8401-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8401-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8401-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8402-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8402-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8402-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8402-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8402-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8402-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8402-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8402-P-D | 5 | C  | 10/24/2014 10:50:00 AM | M8402-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8402-P-D | 6 | -- | 10/31/2014 10:25:00 AM | M8402-P-D | 5 | 1000                     | 900           | 1.111         | 444.444        | 10/31/14 RR   |
| M8402-P-D | 7 | -- | 10/31/2014 10:25:00 AM | M8402-P-D | 5 | 1000                     | 100           | 10.000        | 4000.000       | 10/31/14 RR   |
| M8404-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8404-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8404-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8404-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8404-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8404-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8404-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8404-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8404-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |
| M8405-P   | 0 | C  | 10/20/2014 12:30:00 PM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/20/14 SG   |
| M8405-P   | 2 | -- | 10/24/2014 10:45:00 AM | M8405-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/24/14 DMS  |
| M8405-P-D | 3 | C  | 10/24/2014 10:45:00 AM | M8405-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/24/14 DMS  |
| M8405-P-D | 4 | -- | 10/24/2014 10:50:00 AM | M8405-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/24/14 DMS  |
| M8405-P-D | 5 | -- | 10/24/2014 10:50:00 AM | M8405-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/24/14 DMS  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract |   | * | Extract Date | Source |   | Initial Extract<br>Vol (uL) | Extract<br>Split | Extract<br>Split | Total<br>Dilution | Date/Initials |
|---------|---|---|--------------|--------|---|-----------------------------|------------------|------------------|-------------------|---------------|
| Name    | # |   |              | Name   | # |                             |                  |                  |                   |               |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| CD580PB-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| CD581LCS-P(0)   | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8152-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8152-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8152-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8153-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8153-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8153-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8154-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8154-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8154-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8155-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8155-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8155-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8167-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8167-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8167-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8167DUP-P(0)   | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8167DUP-P-D(3) | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

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**Project No.(s)**

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**SED**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8167DUP-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8356-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8356-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8356-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8357-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8357-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8357-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8360-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8360-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8360-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8361-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8361-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8361-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8362-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8362-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8362-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8363-P(0)      | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8363-P-D(3)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8363-P-D(5)    | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |

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## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

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**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| M8368-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8368-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8368-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8369-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8369-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8369-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8370-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8370-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8370-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8387-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8387-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8387-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8387MS-P(0)  | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8387MSD-P(0) | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8400-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8400-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |
| M8400-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/24/14 DMS           | MDS       |
| M8401-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/24/14 DMS           | MDS       |
| M8401-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/24/14 DMS           | MDS       |

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## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

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**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8401-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8402-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8402-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8402-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8402-P-D(7) | 910             | 90         | IE11    | 100         | 1        | 1000                | 4000.000         | 10/31/14 RR            | MRM       |
| M8404-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8404-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8404-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |
| M8405-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/24/14 DMS           | MDS       |
| M8405-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/24/14 DMS           | MDS       |
| M8405-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/24/14 DMS           | MDS       |

Syringes/Pipettes Used:

\* - Final Dilution is any HPLC, dilutions, or other manipulation

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**BATTELLE - DUXBURY OPERATIONS  
SAMPLE SPECIFIC COMMENTS**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Comment: | Date/Initials: |
|------------|----------|----------------|
| CD580PB-P  | NA       | NA             |
| CD581LCS-P | NA       | NA             |
| M8152-P    | NA       | NA             |
| M8153-P    | NA       | NA             |
| M8154-P    | NA       | NA             |
| M8155-P    | NA       | NA             |
| M8167-P    | NA       | NA             |
| M8167DUP-P | NA       | NA             |
| M8356-P    | NA       | NA             |
| M8357-P    | NA       | NA             |
| M8360-P    | NA       | NA             |
| M8361-P    | NA       | NA             |
| M8362-P    | NA       | NA             |
| M8363-P    | NA       | NA             |
| M8368-P    | NA       | NA             |
| M8369-P    | NA       | NA             |
| M8370-P    | NA       | NA             |
| M8387-P    | NA       | NA             |
| M8387MS-P  | NA       | NA             |
| M8387MSD-P | NA       | NA             |
| M8400-P    | NA       | NA             |
| M8401-P    | NA       | NA             |
| M8402-P    | NA       | NA             |
| M8404-P    | NA       | NA             |
| M8405-P    | NA       | NA             |



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                            |                        |                           |                       |
|----------------------------|------------------------|---------------------------|-----------------------|
| <b>Purpose:</b>            | GC/ECD TRANSFER        | <b>Last Activity:</b>     | Prep->Inst            |
| <b>Relinquished On/By:</b> | Oct 24 2014 2:09PM DMS | <b>Received On/By:</b>    | Oct 24 2014 2:09PM RR |
| <b>Relinquished From:</b>  | Sample Preparation: NA | <b>Received Location:</b> | Gas Storage: NA       |
| <b>Relinquish Comment:</b> | NA                     | <b>Received Comment:</b>  | NA                    |

| No. | BDO-ID:         | PIV: | DF:    | Condition: | Custody Comment: |
|-----|-----------------|------|--------|------------|------------------|
| 1   | CD580PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 2   | CD581LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 3   | M8152-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 4   | M8152-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 5   | M8152-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 6   | M8153-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 7   | M8153-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 8   | M8153-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 9   | M8154-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 10  | M8154-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 11  | M8154-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 12  | M8155-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 13  | M8155-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 14  | M8155-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 15  | M8167-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 16  | M8167-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 17  | M8167-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 18  | M8167DUP-P(2)   | 1000 | 1.053  | Intact     | NA               |
| 19  | M8167DUP-P-D(4) | 1000 | 21.053 | Intact     | NA               |
| 20  | M8167DUP-P-D(5) | 1000 | 400    | Intact     | NA               |
| 21  | M8356-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 22  | M8356-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 23  | M8356-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 24  | M8357-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 25  | M8357-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 26  | M8357-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 27  | M8360-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 28  | M8360-P-D(4)    | 1000 | 21.053 | Intact     | NA               |





The Business of Innovation

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EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

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|    |               |      |        |        |    |
|----|---------------|------|--------|--------|----|
| 29 | M8360-P-D(5)  | 1000 | 400    | Intact | NA |
| 30 | M8361-P(2)    | 1000 | 1.053  | Intact | NA |
| 31 | M8361-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 32 | M8361-P-D(5)  | 1000 | 400    | Intact | NA |
| 33 | M8362-P(2)    | 1000 | 1.053  | Intact | NA |
| 34 | M8362-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 35 | M8362-P-D(5)  | 1000 | 400    | Intact | NA |
| 36 | M8363-P(2)    | 1000 | 1.053  | Intact | NA |
| 37 | M8363-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 38 | M8363-P-D(5)  | 1000 | 400    | Intact | NA |
| 39 | M8368-P(2)    | 1000 | 1.053  | Intact | NA |
| 40 | M8368-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 41 | M8368-P-D(5)  | 1000 | 400    | Intact | NA |
| 42 | M8369-P(2)    | 1000 | 1.053  | Intact | NA |
| 43 | M8369-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 44 | M8369-P-D(5)  | 1000 | 400    | Intact | NA |
| 45 | M8370-P(2)    | 1000 | 1.053  | Intact | NA |
| 46 | M8370-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 47 | M8370-P-D(5)  | 1000 | 400    | Intact | NA |
| 48 | M8387-P(2)    | 1000 | 1.053  | Intact | NA |
| 49 | M8387-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 50 | M8387-P-D(5)  | 1000 | 400    | Intact | NA |
| 51 | M8387MS-P(0)  | 1000 | 1      | Intact | NA |
| 52 | M8387MSD-P(0) | 1000 | 1      | Intact | NA |
| 53 | M8400-P(2)    | 1000 | 1.053  | Intact | NA |
| 54 | M8400-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 55 | M8400-P-D(5)  | 1000 | 400    | Intact | NA |
| 56 | M8401-P(2)    | 1000 | 1.053  | Intact | NA |
| 57 | M8401-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 58 | M8401-P-D(5)  | 1000 | 400    | Intact | NA |
| 59 | M8402-P(2)    | 1000 | 1.053  | Intact | NA |
| 60 | M8402-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 61 | M8402-P-D(5)  | 1000 | 400    | Intact | NA |
| 62 | M8404-P(2)    | 1000 | 1.053  | Intact | NA |
| 63 | M8404-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 64 | M8404-P-D(5)  | 1000 | 400    | Intact | NA |
| 65 | M8405-P(2)    | 1000 | 1.053  | Intact | NA |
| 66 | M8405-P-D(4)  | 1000 | 21.053 | Intact | NA |

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

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**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                            |                |                        |            |   |                         |
|----------------------------|----------------|------------------------|------------|---|-------------------------|
| 67                         | M8405-P-D(5)   | 1000                   | 400        | Intact  | NA                      |
| <b>Total Extracts:</b>     |                | 67                     |            |   |                         |
| <b>Purpose:</b>            |                | GC/ECD TRANSFER        |            | <b>Last Activity:</b> Prep->Inst              |                         |
| <b>Relinquished On/By:</b> |                | Oct 31 2014 10:27AM RR |            | <b>Received On/By:</b> Oct 31 2014 10:28AM RR |                         |
| <b>Relinquished From:</b>  |                | GC Room: NA            |            | <b>Received Location:</b> GC Laboratory: NA   |                         |
| <b>Relinquish Comment:</b> |                | NA                     |            | <b>Received Comment:</b> NA                   |                         |
| <b>No.</b>                 | <b>BDO-ID:</b> | <b>PIV:</b>            | <b>DF:</b> | <b>Condition:</b>                             | <b>Custody Comment:</b> |
| 1                          | M8402-P-D(6)   | 1000                   | 444.444    | Intact  | NA                      |
| 2                          | M8402-P-D(7)   | 1000                   | 4000       | Intact  | NA                      |
| <b>Total Extracts:</b>     |                | 2                      |            |   |                         |

**BATTELLE - DUXBURY OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0493**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

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Entered By:

On:

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Task Leader Approval:

On:

Supervisor Approval:

On:

PM Approval:

On:

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## INJECTION LOG

Directory I:\M\DATA\SM0417\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id     | Miscellaneous             | Injected                       |
|-----|-----|---------|---------------|---------------------------|--------------------------------|
| 1   | 1   | M7203.D | HEXANE        |                           | 10-20-2014 05:18 PM            |
| 2   | 2   | M7204.D | HF94          |                           | 10-20-2014 06:02 PM            |
| 3   | 3   | M7205.D | IE03          |                           | 10-20-2014 06:46 PM            |
| 4   | 4   | M7206.D | IE04          | Level not used.           | <del>10-20-2014 07:31 PM</del> |
| 5   | 5   | M7207.D | IE05          |                           | 10-20-2014 08:16 PM            |
| 6   | 6   | M7208.D | IE06          | RR 11/18/14               | 10-20-2014 09:00 PM            |
| 7   | 7   | M7209.D | IE07          |                           | 10-20-2014 09:45 PM            |
| 8   | 8   | M7210.D | IE08          |                           | 10-20-2014 10:29 PM            |
| 9   | 9   | M7211.D | IE09          | Level not used.           | <del>10-20-2014 11:14 PM</del> |
| 10  | 10  | M7212.D | IE10          |                           | 10-20-2014 11:58 PM            |
| 11  | 11  | M7213.D | HY06 ICC      |                           | 10-21-2014 12:43 AM            |
| 12  | 12  | M7214.D | HF94          |                           | 10-21-2014 01:28 AM            |
| 13  | 13  | M7215.D | IE08 mid      |                           | 10-21-2014 02:12 AM            |
| 14  | 14  | M7216.D | CD598PB-P(3)  | Procedural Blank 5-128 14 | 10-21-2014 02:57 AM            |
| 15  | 15  | M7217.D | CD599LCS-P(5) | Laboratory Control Sample | 10-21-2014 03:42 AM            |
| 16  | 16  | M7218.D | CD600SRM-P(5) | Standard Reference Materi | 10-21-2014 04:26 AM            |
| 17  | 17  | M7219.D | M7754-P(5)    | B537PreMnA 5-128 14-0498  | 10-21-2014 05:11 AM            |
| 18  | 18  | M7220.D | M7755-P(5)    | B537PreMnB 5-128 14-0498  | 10-21-2014 05:55 AM            |
| 19  | 19  | M7221.D | M7756-P(5)    | B537PreMnC 5-128 14-0498  | 10-21-2014 06:40 AM            |
| 20  | 20  | M7222.D | M7756MS-P(5)  | Matrix Spike of B537PreMn | 10-21-2014 07:25 AM            |
| 21  | 21  | M7223.D | M7756MSD-P(5) | Matrix Spike Duplicate of | 10-21-2014 08:09 AM            |
| 22  | 22  | M7224.D | M7757-P(5)    | B537R01MnA 5-128 14-0498  | 10-21-2014 08:54 AM            |
| 23  | 23  | M7225.D | M7758-P(5)    | B537R01MnB 5-128 14-0498  | 10-21-2014 09:38 AM            |
| 24  | 24  | M7226.D | HF94          |                           | 10-21-2014 10:22 AM            |
| 25  | 25  | M7227.D | IE08 mid      |                           | 10-21-2014 11:07 AM            |
| 26  | 26  | M7228.D | M7759-P(5)    | B537R01MnC 5-128 14-0498  | 10-21-2014 11:52 AM            |
| 27  | 27  | M7229.D | M7760-P(5)    | B537R01MnD 5-128 14-0498  | 10-21-2014 12:36 PM            |
| 28  | 28  | M7230.D | M7761-P(5)    | B537R01MnE 5-128 14-0498  | 10-21-2014 01:21 PM            |
| 29  | 29  | M7231.D | M7762-P(5)    | B537S01MnA 5-128 14-0498  | 10-21-2014 02:05 PM            |
| 30  | 30  | M7232.D | M7763-P(5)    | B537S01MnB 5-128 14-0498  | 10-21-2014 02:50 PM            |
| 31  | 31  | M7233.D | M7764-P(5)    | B537S01MnC 5-128 14-0498  | 10-21-2014 03:35 PM            |
| 32  | 32  | M7234.D | M7765-P(5)    | B537S01MnD 5-128 14-0498  | 10-21-2014 04:19 PM            |
| 33  | 33  | M7235.D | M7766-P(5)    | B537S01MnE 5-128 14-0498  | 10-21-2014 05:04 PM            |
| 34  | 34  | M7236.D | M7767-P(5)    | B537S02MnA 5-128 14-0498  | 10-21-2014 05:48 PM            |
| 35  | 35  | M7237.D | M7768-P(5)    | B537S02MnB 5-128 14-0498  | 10-21-2014 06:33 PM            |
| 36  | 36  | M7238.D | HF94          |                           | 10-21-2014 07:17 PM            |
| 37  | 37  | M7239.D | IE07 mid      |                           | 10-21-2014 08:02 PM            |
| 38  | 38  | M7240.D | M7768DUP-P(5) | Lab Duplicate of B537S02M | 10-21-2014 08:46 PM            |
| 39  | 39  | M7241.D | M7769-P(5)    | B537S02MnC 5-128 14-0498  | 10-21-2014 09:31 PM            |
| 40  | 40  | M7242.D | M7770-P(5)    | B537S02MnD 5-128 14-0498  | 10-21-2014 10:16 PM            |
| 41  | 41  | M7243.D | M7771-P(5)    | B537S02MnE 5-128 14-0498  | 10-21-2014 11:00 PM            |
| 42  | 42  | M7244.D | CD669PB-P(0)  | Procedural Blank 5-128 14 | 10-21-2014 11:45 PM            |
| 43  | 43  | M7245.D | CD670LCS-P(0) | Laboratory Control Sample | 10-22-2014 12:29 AM            |
| 44  | 44  | M7246.D | CD671LCS-P(0) | Laboratory Control Sample | 10-22-2014 01:14 AM            |
| 45  | 45  | M7247.D | M8926-P(0)    | FLD20141014OSHCO-7-14-7E  | 10-22-2014 01:58 AM            |
| 46  | 46  | M7248.D | M8928-P(0)    | FSW20141014OSHCO-7-14-1 5 | 10-22-2014 02:43 AM            |
| 47  | 47  | M7249.D | HF94          |                           | 10-22-2014 03:28 AM            |
| 48  | 48  | M7250.D | IE07 mid      |                           | 10-22-2014 04:12 AM            |

INJECTION LOG

Directory I:\M\DATA\SM0418\ Highlighted cells reported.

| Lin | BTL | File     | Sample Id       | Miscellaneous                        | Injected                       |
|-----|-----|----------|-----------------|--------------------------------------|--------------------------------|
| 1   | 1   | M7251.D  | HEXANE          |                                      | 10-26-2014 08:14 AM            |
| 2   | 2   | M7252.D  | IE08 mid        |                                      | 10-26-2014 08:58 AM            |
| 3   | 3   | M7253.D  | CD580PB-P(0)    | Procedural Blank 5-128 14            | 10-26-2014 09:43 AM            |
| 4   | 4   | M7254.D  | CD581LCS-P(0)   | Laboratory Control Sample            | 10-26-2014 10:27 AM            |
| 5   | 5   | M7255.D  | M8152-P(2)      | NBH14-0001 5-128 14-0493             | 10-26-2014 11:12 AM            |
| 6   | 6   | M7256.D  | M8153-P(2)      | NBH14-0005 5-128 14-0493             | 10-26-2014 11:56 AM            |
| 7   | 7   | M7257.D  | M8154-P(2)      | NBH14-0009 5-128 14-0493             | 10-26-2014 12:41 PM            |
| 8   | 8   | M7258.D  | M8155-P(2)      | NBH14-0013 5-128 14-0493             | 10-26-2014 01:25 PM            |
| 9   | 9   | M7259.D  | M8167-P(2)      | NBH14-0065 5-128 14-0493             | 10-26-2014 02:10 PM            |
| 10  | 10  | M7260.D  | M8167DUP-P(2)   | Lab Duplicate of NBH14-00            | 10-26-2014 02:55 PM            |
| 11  | 11  | M7261.D  | M8356-P(2)      | NBH14-0207 5-128 14-0493             | 10-26-2014 03:39 PM            |
| 12  | 12  | M7262.D  | M8357-P(2)      | NBH14-0211 5-128 14-0493             | 10-26-2014 04:24 PM            |
| 13  | 13  | M7263.D  | IE07 mid        |                                      | 10-26-2014 05:08 PM            |
| 14  | 14  | M7264.D  | M8360-P(2)      | NBH14-0220 5-128 14-0493             | 10-26-2014 05:53 PM            |
| 15  | 15  | M7265.D  | M8361-P(2)      | NBH14-0224 5-128 14-0493             | 10-26-2014 06:37 PM            |
| 16  | 16  | M7266.D  | M8362-P(2)      | NBH14-0228 5-128 14-0493             | 10-26-2014 07:22 PM            |
| 17  | 17  | M7267.D  | M8363-P(2)      | NBH14-0232 5-128 14-0493             | 10-26-2014 08:06 PM            |
| 18  | 18  | M7268.D  | M8368-P(2)      | NBH14-0245 5-128 14-0493             | 10-26-2014 08:51 PM            |
| 19  | 19  | M7269.D  | M8369-P(2)      | NBH14-0249 5-128 14-0493             | 10-26-2014 09:35 PM            |
| 20  | 20  | M7270.D  | M8370-P(2)      | NBH14-0253 5-128 14-0493             | 10-26-2014 10:20 PM            |
| 21  | 21  | M7271.D  | M8387-P(2)      | NBH14-0101 5-128 14-0493             | 10-26-2014 11:04 PM            |
| 22  | 22  | M7272.D  | M8387MS-P(0)    | Matrix Spike of NBH14-010            | 10-26-2014 11:49 PM            |
| 23  | 23  | M7273.D  | M8387MSD-P(0)   | Matrix Spike Duplicate of            | 10-27-2014 12:34 AM            |
| 24  | 24  | M7274.D  | IE08 mid        |                                      | 10-27-2014 01:18 AM            |
| 25  | 43  | M7274A.D | M8400-P(2)      | NBH14-0153 5-128 14-0493             | 10-27-2014 02:03 AM            |
| 26  | 44  | M7274B.D | M8401-P(2)      | NBH14-0157 5-128 14-0493             | 10-27-2014 02:48 AM            |
| 27  | 45  | M7274C.D | M8402-P(2)      | <del>NBH14-0161 5-128 14-0493</del>  | <del>10-27-2014 03:33 AM</del> |
| 28  | 46  | M7274D.D | M8404-P(2)      | NBH14-0169 5-128 14-0493             | 10-27-2014 04:18 AM            |
| 29  | 47  | M7274E.D | M8405-P(2)      | NBH14-0173 5-128 14-0493             | 10-27-2014 05:03 AM            |
| 30  | 48  | M7274F.D | M8400-P-D(4)    | NBH14-0153 5-128 14-0493             | 10-27-2014 05:47 AM            |
| 31  | 49  | M7274G.D | M8401-P-D(4)    | NBH14-0157 5-128 14-0493             | 10-27-2014 06:32 AM            |
| 32  | 50  | M7274H.D | M8402-P-D(4)    | NBH14-0161 5-128 14-0493             | 10-27-2014 07:17 AM            |
| 33  | 51  | M7274I.D | M8404-P-D(4)    | NBH14-0169 5-128 14-0493             | 10-27-2014 08:02 AM            |
| 34  | 52  | M7274J.D | M8405-P-D(4)    | NBH14-0173 5-128 14-0493             | 10-27-2014 08:46 AM            |
| 35  | 53  | M7274K.D | IE07 mid        |                                      | 10-27-2014 09:31 AM            |
| 36  | 25  | M7275.D  | M8152-P-D(4)    | NBH14-0001 5-128 14-0493             | 10-27-2014 10:15 AM            |
| 37  | 26  | M7276.D  | M8153-P-D(4)    | NBH14-0005 5-128 14-0493             | 10-27-2014 11:00 AM            |
| 38  | 27  | M7277.D  | M8154-P-D(4)    | NBH14-0009 5-128 14-0493             | 10-27-2014 11:44 AM            |
| 39  | 28  | M7278.D  | M8155-P-D(4)    | NBH14-0013 5-128 14-0493             | 10-27-2014 12:29 PM            |
| 40  | 29  | M7279.D  | M8167-P-D(4)    | <del>NBH14-0065 5-128 14-0493</del>  | <del>10-27-2014 01:13 PM</del> |
| 41  | 30  | M7280.D  | M8167DUP-P-D(4) | <del>Lab Duplicate of NBH14-00</del> | <del>10-27-2014 01:58 PM</del> |
| 42  | 31  | M7281.D  | M8356-P-D(4)    | NBH14-0207 5-128 14-0493             | 10-27-2014 02:43 PM            |
| 43  | 32  | M7282.D  | M8357-P-D(4)    | NBH14-0211 5-128 14-0493             | 10-27-2014 03:27 PM            |
| 44  | 33  | M7283.D  | M8360-P-D(4)    | NBH14-0220 5-128 14-0493             | 10-27-2014 04:12 PM            |
| 45  | 34  | M7284.D  | M8361-P-D(4)    | NBH14-0224 5-128 14-0493             | 10-27-2014 04:56 PM            |
| 46  | 35  | M7285.D  | IE07 mid        |                                      | 10-27-2014 05:41 PM            |
| 47  | 36  | M7286.D  | M8362-P-D(4)    | NBH14-0228 5-128 14-0493             | 10-27-2014 06:25 PM            |
| 48  | 37  | M7287.D  | M8363-P-D(4)    | NBH14-0232 5-128 14-0493             | 10-27-2014 07:10 PM            |
| 49  | 38  | M7288.D  | M8368-P-D(4)    | NBH14-0245 5-128 14-0493             | 10-27-2014 07:54 PM            |
| 50  | 39  | M7289.D  | M8369-P-D(4)    | NBH14-0249 5-128 14-0493             | 10-27-2014 08:39 PM            |
| 51  | 40  | M7290.D  | M8370-P-D(4)    | NBH14-0253 5-128 14-0493             | 10-27-2014 09:23 PM            |
| 52  | 41  | M7291.D  | M8387-P-D(4)    | <del>NBH14-0101 5-128 14-0493</del>  | <del>10-27-2014 10:08 PM</del> |
| 53  | 42  | M7292.D  | IE08 mid        |                                      | 10-27-2014 10:52 PM            |

(1) Dilution not needed.  
RR 11/18/14

## INJECTION LOG

Directory I:\M\DATA\SM0419\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id     | Miscellaneous             | Injected            |
|-----|-----|---------|---------------|---------------------------|---------------------|
| 1   | 1   | M7293.D | HEXANE        |                           | 10-28-2014 04:46 PM |
| 2   | 2   | M7294.D | HF94          |                           | 10-28-2014 05:30 PM |
| 3   | 3   | M7295.D | IE08 mid      |                           | 10-28-2014 06:15 PM |
| 4   | 4   | M7296.D | CD601PB-P(3)  | Procedural Blank 5-128 14 | 10-28-2014 06:59 PM |
| 5   | 5   | M7297.D | CD602LCS-P(5) | Laboratory Control Sample | 10-28-2014 07:44 PM |
| 6   | 6   | M7298.D | CD603SRM-P(5) | Standard Reference Materi | 10-28-2014 08:28 PM |
| 7   | 7   | M7299.D | M7772-P(5)    | B537PreNvA 5-128 14-0499  | 10-28-2014 09:13 PM |
| 8   | 8   | M7300.D | M7773-P(5)    | B537PreNvB 5-128 14-0499  | 10-28-2014 09:57 PM |
| 9   | 9   | M7301.D | M7774-P(5)    | B537PreNvC 5-128 14-0499  | 10-28-2014 10:42 PM |
| 10  | 10  | M7302.D | M7775-P(5)    | B537R01NvA 5-128 14-0499  | 10-28-2014 11:26 PM |
| 11  | 11  | M7303.D | M7776-P(5)    | B537R01NvB 5-128 14-0499  | 10-29-2014 12:11 AM |
| 12  | 12  | M7304.D | M7777-P(5)    | B537R01NvC 5-128 14-0499  | 10-29-2014 12:55 AM |
| 13  | 13  | M7305.D | M7777MS-P(5)  | Matrix Spike of B537R01Nv | 10-29-2014 01:40 AM |
| 14  | 14  | M7306.D | HF94          |                           | 10-29-2014 02:24 AM |
| 15  | 15  | M7307.D | IE07 mid      |                           | 10-29-2014 03:09 AM |
| 16  | 16  | M7308.D | M7777MSD-P(5) | Matrix Spike Duplicate of | 10-29-2014 03:53 AM |
| 17  | 17  | M7309.D | M7778-P(5)    | B537R01NvD 5-128 14-0499  | 10-29-2014 04:38 AM |
| 18  | 18  | M7310.D | M7779-P(5)    | B537R01NvE 5-128 14-0499  | 10-29-2014 05:22 AM |
| 19  | 19  | M7311.D | M7780-P(5)    | B537S01NvA 5-128 14-0499  | 10-29-2014 06:07 AM |
| 20  | 20  | M7312.D | M7781-P(5)    | B537S01NvB 5-128 14-0499  | 10-29-2014 06:51 AM |
| 21  | 21  | M7313.D | M7782-P(5)    | B537S01NvC 5-128 14-0499  | 10-29-2014 07:36 AM |
| 22  | 22  | M7314.D | M7783-P(5)    | B537S01NvD 5-128 14-0499  | 10-29-2014 08:20 AM |
| 23  | 23  | M7315.D | M7784-P(5)    | B537S01NvE 5-128 14-0499  | 10-29-2014 09:05 AM |
| 24  | 24  | M7316.D | M7784DUP-P(5) | Lab Duplicate of B537S01N | 10-29-2014 09:49 AM |
| 25  | 25  | M7317.D | M7785-P(5)    | B537S02NvA 5-128 14-0499  | 10-29-2014 10:34 AM |
| 26  | 26  | M7318.D | HF94          |                           | 10-29-2014 11:18 AM |
| 27  | 27  | M7319.D | IE08 mid      |                           | 10-29-2014 12:03 PM |
| 28  | 28  | M7320.D | M7786-P(5)    | B537S02NvB 5-128 14-0499  | 10-29-2014 12:48 PM |
| 29  | 29  | M7321.D | M7787-P(5)    | B537S02NvC 5-128 14-0499  | 10-29-2014 01:32 PM |
| 30  | 30  | M7322.D | M7788-P(5)    | B537S02NvD 5-128 14-0499  | 10-29-2014 02:17 PM |
| 31  | 31  | M7323.D | M7789-P(5)    | B537S02NvE 5-128 14-0499  | 10-29-2014 03:01 PM |
| 32  | 32  | M7324.D | HF94          |                           | 10-29-2014 03:46 PM |
| 33  | 33  | M7325.D | IE07 mid      |                           | 10-29-2014 04:31 PM |
| 34  | 34  | M7326.D | M8152-P-D(5)  | NBH14-0001 5-128 14-0493  | 10-29-2014 05:15 PM |
| 35  | 35  | M7327.D | M8153-P-D(5)  | NBH14-0005 5-128 14-0493  | 10-29-2014 06:00 PM |
| 36  | 36  | M7328.D | M8154-P-D(5)  | NBH14-0009 5-128 14-0493  | 10-29-2014 06:44 PM |
| 37  | 37  | M7329.D | M8155-P-D(5)  | NBH14-0013 5-128 14-0493  | 10-29-2014 07:29 PM |
| 38  | 38  | M7330.D | M8356-P-D(5)  | NBH14-0207 5-128 14-0493  | 10-29-2014 08:13 PM |
| 39  | 39  | M7331.D | M8357-P-D(5)  | NBH14-0211 5-128 14-0493  | 10-29-2014 08:58 PM |
| 40  | 40  | M7332.D | M8368-P-D(5)  | NBH14-0245 5-128 14-0493  | 10-29-2014 09:42 PM |
| 41  | 41  | M7333.D | M8369-P-D(5)  | NBH14-0249 5-128 14-0493  | 10-29-2014 10:27 PM |
| 42  | 42  | M7334.D | M8370-P-D(5)  | NBH14-0253 5-128 14-0493  | 10-29-2014 11:11 PM |
| 43  | 43  | M7335.D | M8400-P-D(5)  | NBH14-0153 5-128 14-0493  | 10-29-2014 11:56 PM |
| 44  | 44  | M7336.D | IE08 mid      |                           | 10-30-2014 12:41 AM |
| 45  | 45  | M7337.D | M8401-P-D(5)  | NBH14-0157 5-128 14-0493  | 10-30-2014 01:25 AM |
| 46  | 46  | M7338.D | M8402-P-D(5)  | NBH14-0161 5-128 14-0493  | 10-30-2014 02:10 AM |
| 47  | 47  | M7339.D | M8404-P-D(5)  | NBH14-0169 5-128 14-0493  | 10-30-2014 02:54 AM |
| 48  | 48  | M7340.D | M8405-P-D(5)  | NBH14-0173 5-128 14-0493  | 10-30-2014 03:39 AM |
| 49  | 49  | M7341.D | IE07 mid      |                           | 10-30-2014 04:23 AM |

## INJECTION LOG

Directory I:\M\DATA\SM0420\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous            | Injected            |
|-----|-----|---------|-----------------|--------------------------|---------------------|
| 1   | 1   | M7342.D | HEXANE          |                          | 10-30-2014 04:15 PM |
| 2   | 2   | M7343.D | HF94            |                          | 10-30-2014 05:00 PM |
| 3   | 3   | M7344.D | IE07            |                          | 10-30-2014 05:44 PM |
| 4   | 4   | M7345.D | CD718PB-P(3)    |                          | 10-30-2014 06:29 PM |
| 5   | 5   | M7346.D | CD719LCS-P(5)   |                          | 10-30-2014 07:13 PM |
| 6   | 6   | M7347.D | CD720LCSD-P(5)  |                          | 10-30-2014 07:58 PM |
| 7   | 7   | M7348.D | CD721LCS-P(5)   |                          | 10-30-2014 08:42 PM |
| 8   | 8   | M7349.D | CD722LCS-P(5)   |                          | 10-30-2014 09:27 PM |
| 9   | 9   | M7350.D | CD723LCS-P(5)   |                          | 10-30-2014 10:11 PM |
| 10  | 10  | M7351.D | M8474-P(5)      |                          | 10-30-2014 10:55 PM |
| 11  | 11  | M7352.D | M8476-P(5)      |                          | 10-30-2014 11:40 PM |
| 12  | 12  | M7353.D | M8478-P(5)      |                          | 10-31-2014 12:24 AM |
| 13  | 13  | M7354.D | HF94            |                          | 10-31-2014 01:09 AM |
| 14  | 14  | M7355.D | IE08            |                          | 10-31-2014 01:53 AM |
| 15  | 15  | M7356.D | CK-669(1) DCM   |                          | 10-31-2014 02:38 AM |
| 16  | 16  | M7357.D | CK-689(2) DCM   |                          | 10-31-2014 03:22 AM |
| 17  | 17  | M7358.D | CK-672(1) DCM   |                          | 10-31-2014 04:07 AM |
| 18  | 18  | M7359.D | CK-672(2) DCM   |                          | 10-31-2014 04:51 AM |
| 19  | 19  | M7360.D | CK-667(1) HEX   |                          | 10-31-2014 05:36 AM |
| 20  | 20  | M7361.D | CK-661(1) HEX   |                          | 10-31-2014 06:20 AM |
| 21  | 21  | M7362.D | CK-661(1) HEX   |                          | 10-31-2014 07:05 AM |
| 22  | 22  | M7363.D | CK-661(2) HEX   |                          | 10-31-2014 07:49 AM |
| 23  | 1   | M7364.D | IE07 mid        |                          | 10-31-2014 10:49 AM |
| 24  | 2   | M7365.D | M8402-P-D(7)    | NBH14-0161 5-128 14-0493 | 10-31-2014 11:34 AM |
| 25  | 3   | M7366.D | IE08 mid        |                          | 10-31-2014 12:18 PM |
| 26  | 4   | M7367.D | CD582PB-P(0)    |                          | 10-31-2014 01:03 PM |
| 27  | 5   | M7368.D | CD583LCS-P(0)   |                          | 10-31-2014 01:47 PM |
| 28  | 6   | M7369.D | M8156-P(2)      |                          | 10-31-2014 02:32 PM |
| 29  | 7   | M7370.D | M8158-P(2)      |                          | 10-31-2014 03:17 PM |
| 30  | 8   | M7371.D | M8163-P(2)      |                          | 10-31-2014 04:01 PM |
| 31  | 9   | M7372.D | M8164-P(2)      |                          | 10-31-2014 04:45 PM |
| 32  | 10  | M7373.D | M8165-P(2)      |                          | 10-31-2014 05:30 PM |
| 33  | 11  | M7374.D | M8166-P(2)      |                          | 10-31-2014 06:14 PM |
| 34  | 12  | M7375.D | M8166DUP-P(2)   |                          | 10-31-2014 06:59 PM |
| 35  | 13  | M7376.D | M8347-P(2)      |                          | 10-31-2014 07:43 PM |
| 36  | 14  | M7377.D | IE07mid         |                          | 10-31-2014 08:28 PM |
| 37  | 15  | M7378.D | M8348-P(2)      |                          | 10-31-2014 09:12 PM |
| 38  | 16  | M7379.D | M8355-P(2)      |                          | 10-31-2014 09:57 PM |
| 39  | 17  | M7380.D | M8358-P(2)      |                          | 10-31-2014 10:41 PM |
| 40  | 18  | M7381.D | M8359-P(2)      |                          | 10-31-2014 11:26 PM |
| 41  | 19  | M7382.D | M8365-P(2)      |                          | 11-1-2014 12:10 AM  |
| 42  | 20  | M7383.D | M8365MS-P(2)    |                          | 11-1-2014 12:55 AM  |
| 43  | 21  | M7384.D | M8365MSD-P(2)   |                          | 11-1-2014 01:39 AM  |
| 44  | 22  | M7385.D | M8371-P(2)      |                          | 11-1-2014 02:24 AM  |
| 45  | 23  | M7386.D | M8372-P(2)      |                          | 11-1-2014 03:08 AM  |
| 46  | 24  | M7387.D | M8373-P(2)      |                          | 11-1-2014 03:53 AM  |
| 47  | 25  | M7388.D | IE08 mid        |                          | 11-1-2014 04:37 AM  |
| 48  | 26  | M7389.D | M8383-P(2)      |                          | 11-1-2014 05:22 AM  |
| 49  | 27  | M7390.D | M8384-P(2)      |                          | 11-1-2014 06:06 AM  |
| 50  | 28  | M7391.D | M8385-P(2)      |                          | 11-1-2014 06:50 AM  |
| 51  | 29  | M7392.D | M8386-P(2)      |                          | 11-1-2014 07:35 AM  |
| 52  | 30  | M7393.D | M8403-P(2)      |                          | 11-1-2014 08:19 AM  |
| 53  | 31  | M7394.D | M8156-P-D(4)    |                          | 11-1-2014 09:04 AM  |
| 54  | 32  | M7395.D | M8158-P-D(4)    |                          | 11-1-2014 09:48 AM  |
| 55  | 33  | M7396.D | M8163-P-D(4)    |                          | 11-1-2014 10:33 AM  |
| 56  | 34  | M7397.D | M8164-P-D(4)    |                          | 11-1-2014 11:17 AM  |
| 57  | 35  | M7398.D | M8165-P-D(4)    |                          | 11-1-2014 12:02 PM  |
| 58  | 36  | M7399.D | IE07 mid        |                          | 11-1-2014 12:47 PM  |
| 59  | 37  | M7400.D | M8166-P-D(4)    |                          | 11-1-2014 01:31 PM  |
| 60  | 38  | M7401.D | M8166DUP-P-D(4) |                          | 11-1-2014 02:16 PM  |
| 61  | 39  | M7402.D | M8347-P-D(4)    |                          | 11-1-2014 03:00 PM  |

E-90

## INJECTION LOG

Directory I:\M\DATA\SM0424\ Highlighted cells reported

| Lin | BTL | File    | Sample Id       | Miscellaneous             | Injected            |
|-----|-----|---------|-----------------|---------------------------|---------------------|
| 1   | 1   | M7580.D | HEXANE          |                           | 11-14-2014 03:59 PM |
| 2   | 2   | M7581.D | IE07            |                           | 11-14-2014 04:44 PM |
| 3   | 3   | M7582.D | CD588PB-P(0)    |                           | 11-14-2014 05:28 PM |
| 4   | 4   | M7583.D | CD589LCS-P(0)   |                           | 11-14-2014 06:13 PM |
| 5   | 5   | M7584.D | CD590MDL-P(0)   |                           | 11-14-2014 06:57 PM |
| 6   | 6   | M7585.D | CD591MDL-P(0)   |                           | 11-14-2014 07:42 PM |
| 7   | 7   | M7586.D | CD592MDL-P(0)   |                           | 11-14-2014 08:27 PM |
| 8   | 8   | M7587.D | CD593MDL-P(0)   |                           | 11-14-2014 09:11 PM |
| 9   | 9   | M7588.D | CD594MDL-P(0)   |                           | 11-14-2014 09:56 PM |
| 10  | 10  | M7589.D | CD595MDL-P(0)   |                           | 11-14-2014 10:40 PM |
| 11  | 11  | M7590.D | CD596MDL-P(0)   |                           | 11-14-2014 11:25 PM |
| 12  | 12  | M7591.D | CD597MDL-P(0)   |                           | 11-15-2014 12:09 AM |
| 13  | 13  | M7592.D | IE08            |                           | 11-15-2014 12:54 AM |
| 14  | 14  | M7593.D | CD809PB-P(0)    |                           | 11-15-2014 01:38 AM |
| 15  | 15  | M7594.D | CD810LCS-P(0)   |                           | 11-15-2014 02:22 AM |
| 16  | 16  | M7595.D | M8168-P(2)      |                           | 11-15-2014 03:07 AM |
| 17  | 17  | M7596.D | M8168DUP-P(2)   |                           | 11-15-2014 03:51 AM |
| 18  | 18  | M7597.D | M8170-P(2)      |                           | 11-15-2014 04:36 AM |
| 19  | 19  | M7598.D | M8170MS-P(2)    |                           | 11-15-2014 05:20 AM |
| 20  | 20  | M7599.D | M8170MSD-P(2)   |                           | 11-15-2014 06:05 AM |
| 21  | 21  | M7600.D | M8171-P(2)      |                           | 11-15-2014 06:49 AM |
| 22  | 22  | M7601.D | M8388-P(2)      |                           | 11-15-2014 07:34 AM |
| 23  | 23  | M7602.D | M8168-P-D(4)    |                           | 11-15-2014 08:18 AM |
| 24  | 24  | M7603.D | IE07 mid        |                           | 11-15-2014 09:03 AM |
| 25  | 25  | M7604.D | M8168DUP-P-D(4) |                           | 11-15-2014 09:47 AM |
| 26  | 26  | M7605.D | M8170-P-D(4)    |                           | 11-15-2014 10:31 AM |
| 27  | 27  | M7606.D | M8171-P-D(4)    |                           | 11-15-2014 11:16 AM |
| 28  | 28  | M7607.D | M8388-P-D(4)    |                           | 11-15-2014 12:01 PM |
| 29  | 29  | M7608.D | M8168-P-D(4)    |                           | 11-15-2014 12:45 PM |
| 30  | 30  | M7609.D | M8168DUP-P-D(4) |                           | 11-15-2014 01:29 PM |
| 31  | 31  | M7610.D | M8170-P-D(4)    |                           | 11-15-2014 02:14 PM |
| 32  | 32  | M7611.D | M8171-P-D(4)    |                           | 11-15-2014 02:58 PM |
| 33  | 33  | M7612.D | M8388-P-D(4)    |                           | 11-15-2014 03:43 PM |
| 34  | 34  | M7613.D | M8363-P-D(5)    | NBH14-0232 5-128 14-0493  | 11-15-2014 04:28 PM |
| 35  | 35  | M7614.D | IE08 mid        |                           | 11-15-2014 05:12 PM |
| 36  | 36  | M7615.D | IF27            | AROCLOR 1221              | 11-15-2014 05:57 PM |
| 37  | 37  | M7616.D | IF28            | AROCLOR 1232              | 11-15-2014 06:41 PM |
| 38  | 38  | M7617.D | IF29            | AROCLOR 1242              | 11-15-2014 07:26 PM |
| 39  | 39  | M7618.D | IF30            | AROCLOR 1248              | 11-15-2014 08:10 PM |
| 40  | 40  | M7619.D | IF31            | AROCLOR 1254              | 11-15-2014 08:54 PM |
| 41  | 41  | M7620.D | IB57            | AROCLOR 1262              | 11-15-2014 09:39 PM |
| 42  | 42  | M7621.D | IB58            | AROCLOR 1268              | 11-15-2014 10:23 PM |
| 43  | 43  | M7622.D | IF16            |                           | 11-15-2014 11:08 PM |
| 44  | 44  | M7623.D | IF17            |                           | 11-15-2014 11:52 PM |
| 45  | 45  | M7624.D | IF18            |                           | 11-16-2014 12:37 AM |
| 46  | 46  | M7625.D | IF19            |                           | 11-16-2014 01:21 AM |
| 47  | 47  | M7626.D | IF20            |                           | 11-16-2014 02:06 AM |
| 48  | 48  | M7627.D | IF21            |                           | 11-16-2014 02:50 AM |
| 49  | 49  | M7628.D | IF13 ICC        |                           | 11-16-2014 03:34 AM |
| 50  | 50  | M7629.D | CD899PB-P(3)    | Procedural Blank 5-128 14 | 11-16-2014 04:19 AM |
| 51  | 51  | M7630.D | CD900LCS-P(3)   | Laboratory Control Sample | 11-16-2014 05:03 AM |
| 52  | 52  | M7631.D | M9176-P(3)      | PMP-22-SW-VS 5-128 14-056 | 11-16-2014 05:48 AM |
| 53  | 53  | M7632.D | M9176MS-P(3)    | Matrix Spike of PMP-22-SW | 11-16-2014 06:32 AM |
| 54  | 54  | M7633.D | M9177-P(3)      | PMP-23-SW-VS 5-128 14-056 | 11-16-2014 07:17 AM |
| 55  | 55  | M7634.D | M9177DUP-P(3)   | Lab Duplicate of PMP-23-S | 11-16-2014 08:01 AM |
| 56  | 56  | M7635.D | M9178-P(3)      | PMP-24-SW-VS 5-128 14-056 | 11-16-2014 08:46 AM |
| 57  | 57  | M7636.D | IF29            |                           | 11-16-2014 09:30 AM |
| 58  | 2   | M7637.D | IF19 mid        |                           | 11-17-2014 12:15 PM |
| 59  | 3   | M7638.D | M9176-P-D(5)    | PMP-22-SW-VS 5-128 14-056 | 11-17-2014 01:44 PM |
| 60  | 4   | M7639.D | M9177-P-D(7)    | PMP-23-SW-VS 5-128 14-056 | 11-17-2014 02:29 PM |
| 61  | 5   | M7640.D | M9177DUP-P-D(7) | Lab Duplicate of PMP-23-S | 11-17-2014 03:13 PM |



## Calibration Response Factor Report

**Batch:** 14-0493      **Project Test Code:** Master 128(S)      RFS validated CRD 12/9/2014  
**Data Set:** DP-14-0675      **SOP\_NO:** 5-128-13  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417B.M      **Responses Via** Initial Calibration      **Last Updated** 10/28/2014 9:02:00 AM      **Title:** NBH  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417B.M

| No: | Analyte:  | Type: | Column: | MAD: | 1<br>IE03<br>M7205.D | 2<br>IE05<br>M7207.D | 3<br>IE06<br>M7208.D | 4<br>IE07<br>M7209.D | 5<br>IE08<br>M7210.D | 6<br>IE10<br>M7212.D | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat<br>(r^2/RSD): | Qual: |
|-----|-----------|-------|---------|------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|------------|----------|---------|---------|--------------------|-------|
| 1   | CI5(96)   | I     | 1       | -    | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -       | -       | -                  | -     |
| 2   | CI2(8)    |       | 1       | Y    | 1.02677              | 0.82499              | 0.74685              | 0.63118              | 0.55904              | 0.41512              | - | - | 6 Q        | -0.05406 | 0.58100 | 0.02367 | 0.99968            |       |
| 3   | CI3(18)   |       | 1       | Y    | 1.31210              | 1.10482              | 0.96661              | 0.78724              | 0.69070              | 0.50395              | - | - | 6 Q        | -0.06844 | 0.71262 | 0.03558 | 0.99947            |       |
| 4   | CI3(34)   | s     | 1       | Y    | 2.47273              | 1.36117              | 1.18217              | 1.03139              | 0.92191              | 0.71999              | - | - | 6 Q        | -0.06938 | 0.92761 | 0.04587 | 0.99994            |       |
| 5   | CI3(28)   |       | 1       | Y    | 1.88563              | 1.62148              | 1.53903              | 1.39969              | 1.26450              | 1.01381              | - | - | 6 Q        | -0.09842 | 1.31978 | 0.03237 | 0.99986            |       |
| 6   | CI4(52)   |       | 1       | Y    | 2.67460              | 1.50893              | 1.27188              | 1.06050              | 0.93014              | 0.70933              | - | - | 6 Q        | -0.07364 | 0.92696 | 0.05816 | 0.99983            |       |
| 7   | CI4(44)   |       | 1       | Y    | 1.96878              | 1.69047              | 1.60648              | 1.42175              | 1.25645              | 1.00372              | - | - | 6 Q        | -0.09818 | 1.30598 | 0.04163 | 0.99973            |       |
| 8   | CI4(66)   |       | 1       | Y    | 2.14003              | 1.91334              | 1.75148              | 1.60565              | 1.43266              | 1.15511              | - | - | 6 Q        | -0.10876 | 1.49082 | 0.04098 | 0.99982            |       |
| 9   | CI5(101)  |       | 1       | Y    | 1.87327              | 1.59373              | 1.70864              | 1.61385              | 1.42978              | 1.22422              | - | - | 6 Q        | -0.08750 | 1.49635 | 0.02623 | 0.99975            |       |
| 10  | CI6(161)  | I     | 1       | -    | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -       | -       | -                  | -     |
| 11  | CI6(152)  | s     | 1       | Y    | 1.02184              | 0.73169              | 0.67623              | 0.59438              | 0.54889              | 0.47996              | - | - | 6 Q        | -0.02339 | 0.54921 | 0.01882 | 0.99992            |       |
| 12  | CI5(118)  |       | 1       | Y    | 1.02402              | 0.91463              | 0.85020              | 0.75415              | 0.68354              | 0.58350              | - | - | 6 Q        | -0.03737 | 0.69686 | 0.02122 | 0.99982            |       |
| 13  | CI6(153)  |       | 1       | Y    | 0.88266              | 0.81935              | 0.60192              | 0.77537              | 0.66030              | 0.59647              | - | - | 6 Q        | -0.02991 | 0.69018 | 0.00733 | 0.99932            |       |
| 14  | CI5(105)  |       | 1       | Y    | 1.20312              | 1.04021              | 0.99965              | 0.96015              | 0.82296              | 0.65909              | - | - | 6 Q        | -0.06789 | 0.87004 | 0.02177 | 0.99963            |       |
| 15  | CI6(138)  |       | 1       | Y    | 1.22541              | 1.06675              | 1.00587              | 0.91669              | 0.84817              | 0.76297              | - | - | 6 Q        | -0.03117 | 0.85646 | 0.02109 | 0.99991            |       |
| 16  | CI7(187)  |       | 1       | Y    | 1.07415              | 0.94434              | 0.88498              | 0.79082              | 0.74346              | 0.66512              | - | - | 6 Q        | -0.02786 | 0.74881 | 0.01846 | 0.99992            |       |
| 17  | CI6(128)  |       | 1       | Y    | 1.16100              | 0.91667              | 0.89359              | 0.85607              | 0.84318              | 0.73247              | - | - | 6 Q        | -0.04270 | 0.86786 | 0.00587 | 0.99999            |       |
| 18  | CI7(180)  |       | 1       | Y    | 1.23170              | 1.08198              | 0.99753              | 0.93689              | 0.88497              | 0.82624              | - | - | 6 Q        | -0.02031 | 0.88592 | 0.01772 | 0.99996            |       |
| 19  | CI7(170)  |       | 1       | Y    | 1.33635              | 1.19973              | 1.11853              | 1.05917              | 1.00487              | 0.94111              | - | - | 6 Q        | -0.02267 | 1.00845 | 0.01743 | 0.99997            |       |
| 20  | CI8(195)  |       | 1       | Y    | 1.24821              | 1.10061              | 1.05076              | 0.99234              | 0.94476              | 0.89153              | - | - | 6 Q        | -0.01887 | 0.94735 | 0.01528 | 0.99997            |       |
| 21  | CI9(206)  |       | 1       | Y    | 1.18038              | 1.03661              | 0.99467              | 0.96457              | 0.91081              | 0.85789              | - | - | 6 Q        | -0.02022 | 0.91869 | 0.01268 | 0.99997            |       |
| 22  | CI10(209) |       | 1       | Y    | 0.99002              | 0.86426              | 0.82007              | 0.78889              | 0.73849              | 0.67758              | - | - | 6 Q        | -0.02343 | 0.74907 | 0.01198 | 0.99996            |       |
| 23  | Signal    |       | 2       | -    | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -       | -       | -                  | -     |
| 24  | CI5(96)   | I     | 2       | -    | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -       | -       | -                  | -     |
| 25  | CI2(8)    |       | 2       | Y    | 0.94637              | 0.83650              | 0.76620              | 0.67202              | 0.62199              | 0.48595              | - | - | 6 Q        | -0.05185 | 0.64681 | 0.01712 | 0.99988            |       |
| 26  | CI3(18)   |       | 2       | Y    | 1.39241              | 1.13741              | 1.00550              | 0.76551              | 0.70491              | 0.54182              | - | - | 6 Q        | -0.05533 | 0.70768 | 0.03799 | 0.99943            |       |
| 27  | CI3(34)   | s     | 2       | Y    | 2.23518              | 1.39531              | 1.20146              | 1.04748              | 0.98379              | 0.79730              | - | - | 6 Q        | -0.06315 | 0.98749 | 0.03800 | 0.99996            |       |
| 28  | CI3(28)   |       | 2       | Y    | 2.05612              | 1.73008              | 1.59254              | 1.42520              | 1.36560              | 1.12979              | - | - | 6 Q        | -0.08759 | 1.40224 | 0.02866 | 0.99996            |       |
| 29  | CI4(52)   |       | 2       | Y    | 1.32543              | 1.01634              | 1.04226              | 0.82635              | 0.80598              | 0.62728              | - | - | 6 Q        | -0.06549 | 0.83027 | 0.02172 | 0.99971            |       |
| 30  | CI4(44)   |       | 2       | Y    | 2.26696              | 1.68554              | 1.62828              | 1.44775              | 1.40139              | 1.13801              | - | - | 6 Q        | -0.09853 | 1.44647 | 0.02603 | 0.99996            |       |

## Calibration Response Factor Report

**Batch:** 14-0493                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0675              **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417B.M    **Responses Via** Initial Calibration    **Last Updated** 10/28/2014 9:02:00 AM    **Title:** NBH  
**Instrument:** Inst. M    **Operator:** RR                      **Path:** I:\M\DATA\MM0417B.M

| No: | Analyte:  | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|---------|-----------------------------|-------|
|     |           |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - | Levels:    |          |         |         |                             |       |
|     |           |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |         |                             |       |
| 31  | Cl4(66)   |              | Y       | 2.28150 | 1.94181 | 1.76289 | 1.65364 | 1.54066 | 1.31516 | - | - | 6 Q        | -0.08582 | 1.58007 | 0.03256 | 0.99996                     |       |
| 32  | Cl5(101)  |              | Y       | 1.56754 | 1.17777 | 1.01633 | 1.01029 | 0.86410 | 0.96534 | - | - | 6 Q        | 0.04538  | 0.80794 | 0.03732 | 0.99968                     |       |
| 33  | Cl6(161)  | I            | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -       | -                           |       |
| 34  | Cl6(152)  | s            | Y       | 0.69735 | 0.69234 | 0.57622 | 0.54795 | 0.47409 | 0.53607 | - | - | 6 Q        | 0.02791  | 0.43955 | 0.02156 | 0.99966                     |       |
| 35  | Cl5(118)  |              | Y       | 1.37021 | 0.63622 | 0.73177 | 0.70795 | 0.59017 | 0.57149 | - | - | 6 Q        | -0.00725 | 0.58778 | 0.02195 | 0.99943                     |       |
| 36  | Cl6(153)  |              | Y       | 1.07545 | 0.86632 | 0.79677 | 0.69128 | 0.63279 | 0.63321 | - | - | 6 Q        | 0.00578  | 0.60663 | 0.02539 | 0.99983                     |       |
| 37  | Cl5(105)  |              | Y       | 1.20126 | 1.01455 | 0.97857 | 0.92200 | 0.88341 | 0.94009 | - | - | 6 Q        | 0.02686  | 0.84840 | 0.01736 | 0.99996                     |       |
| 38  | Cl6(138)  |              | Y       | 0.67940 | 0.66822 | 0.62305 | 0.61544 | 0.61172 | 0.68345 | - | - | 6 Q        | 0.03117  | 0.58132 | 0.00625 | 0.99999                     |       |
| 39  | Cl7(187)  |              | Y       | 0.98245 | 0.80842 | 0.76633 | 0.69224 | 0.65688 | 0.68482 | - | - | 6 Q        | 0.01569  | 0.62875 | 0.01795 | 0.99993                     |       |
| 40  | Cl6(128)  |              | Y       | 1.29556 | 1.08544 | 1.04052 | 0.96581 | 0.92997 | 0.98492 | - | - | 6 Q        | 0.02722  | 0.89128 | 0.01958 | 0.99996                     |       |
| 41  | Cl7(180)  |              | Y       | 1.15986 | 0.95311 | 0.92022 | 0.85738 | 0.83699 | 0.89707 | - | - | 6 Q        | 0.02897  | 0.79906 | 0.01566 | 0.99998                     |       |
| 42  | Cl7(170)  |              | Y       | 1.17715 | 1.00944 | 0.98379 | 0.93732 | 0.91404 | 0.98260 | - | - | 6 Q        | 0.03138  | 0.87743 | 0.01381 | 0.99998                     |       |
| 43  | Cl8(195)  |              | Y       | 1.05313 | 0.90773 | 0.89676 | 0.85979 | 0.84072 | 0.91395 | - | - | 6 Q        | 0.03255  | 0.80577 | 0.01137 | 0.99998                     |       |
| 44  | Cl9(206)  |              | Y       | 0.94156 | 0.80488 | 0.80171 | 0.77400 | 0.75899 | 0.82033 | - | - | 6 Q        | 0.02717  | 0.73041 | 0.00888 | 0.99999                     |       |
| 45  | Cl10(209) |              | Y       | 0.76301 | 0.64557 | 0.63678 | 0.60540 | 0.58689 | 0.62005 | - | - | 6 Q        | 0.01548  | 0.56751 | 0.00888 | 0.99998                     |       |

## Calibration Response Factor Report

**Batch:** 14-0493                      **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0675                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417B.M    **Responses Via** Initial Calibration    **Last Updated** 10/28/2014 9:02:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417B.M

| No: | Analyte: | Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A) | (B) | (C) | Stat (r^2/RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|-----|-----|-----|-----------------|-------|
|     |          |       | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - | Levels:    |     |     |     |                 |       |
|     |          |       |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D | - | - |            |     |     |     |                 |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0493      **Project Test Code:** Master 128(S)      RFs validated 12/9/2014  
**Data Set:** DP-14-0675      **SOP\_NO:** 5-128-13  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417F.M      **Responses Via** Initial Calibration      **Last Updated** 12/5/2014 3:22:00 PM      **Title:** NBH 101 only to compliment B method  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417F.M

| No: | Analyte: | Type: | Column: | MQO:    | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)      | Stat (r^2/RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|----------|-----------------|-------|
|     |          |       |         |         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |          |         |          |                 |       |
|     |          |       |         |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |          |                 |       |
| 1   | Cl5(96)  | I     | 1       | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -        | -               | -     |
| 2   | Cl5(101) | 1     | Y       | 2.10045 | 1.55920 | 1.68988 | 1.70104 | 1.46973 | 1.35619 | -       | - | 6 | Q          | -0.05296 | 1.51726 | 0.02697  | 0.99964         |       |
| 3   | Signal   | 2     | -       | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -        | -               | -     |
| 4   | Cl5(96)  | I     | 2       | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -        | -               | -     |
| 5   | Cl5(101) | 2     | Y       | 1.67256 | 2.33575 | 1.99479 | 1.98711 | 2.06595 | 1.40514 | -       | - | 6 | Q          | -0.26866 | 2.27420 | -0.02348 | 0.99966         |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0493                      **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0675              **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

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**Method:** I:\M\DATA\MM0417B.M  
**Title:** NBH  
**Last Update:** Tue Oct 28 9:02 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

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| No: | ID:  | Path\File:               | Update Time:     | Quant Time:      | Acquisition Time:    |
|-----|------|--------------------------|------------------|------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Oct 28 9:02 2014 | Oct 28 8:27 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 11:58 PM |

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**Method:** I:\M\DATA\MM0417F.M  
**Title:** NBH 101 only to compliment B method  
**Last Update:** Fri Dec 05 15:22 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

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| No: | ID:  | Path\File:               | Update Time:      | Quant Time:       | Acquisition Time:    |
|-----|------|--------------------------|-------------------|-------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Dec 05 15:22 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 11:58 PM |

## ICC Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0493 **Matrix:** SED  
**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04000 | 0.04325 | 8.3    |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04000 | 0.04152 | 3.8    |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04104 | 2.5    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04000 | 0.04097 | 2.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04000 | 0.04111 | 2.8    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04000 | 0.04174 | 4.3    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04000 | 0.04028 | 0.8    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04000 | 0.03909 | 2.3    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04020 | 0.04329 | 7.8    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04000 | 0.04106 | 2.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04000 | 0.04279 | 7.0    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04000 | 0.04304 | 7.5    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04000 | 0.04232 | 5.8    |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04000 | 0.04241 | 6.0    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04000 | 0.04114 | 2.8    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04000 | 0.04137 | 3.5    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04000 | 0.04068 | 1.8    |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04000 | 0.04039 | 1.0    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04000 | 0.03895 | 2.5    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04000 | 0.03913 | 2.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04000 | 0.04291 | 7.3    |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04000 | 0.04108 | 2.8    |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04151 | 3.8    |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04000 | 0.04079 | 2.0    |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04000 | 0.04033 | 0.8    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04000 | 0.04180 | 4.5    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04000 | 0.04056 | 1.5    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04000 | 0.03895 | 2.5    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04020 | 0.03914 | 2.6    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04000 | 0.04347 | 8.8    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04000 | 0.04346 | 8.8    |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04000 | 0.04183 | 4.5    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04000 | 0.04161 | 4.0    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04000 | 0.04269 | 6.8    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04000 | 0.04137 | 3.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04000 | 0.04074 | 1.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04000 | 0.04076 | 2.0    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04000 | 0.03961 | 1.0    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04000 | 0.03898 | 2.5    |

## ICC Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master\_128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0493 Matrix: SED  
Calibration File: MM0417B.M Last Updated: 10/28/2014 9:02:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO:    | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|---------|---------|---------|--------|
| 45  | Cl10(209) | 2     | Y    | 0.04000 | 0.03909 | 2.3     |        |

MQO: Only compounds flagged with "Y" will be counted towards  
MQO exceedences.

Mean PD: 3.80  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## ICC Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0493 Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte: | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | C15(96)  | I     | 1    | -    |         |         |        |
| 2   | C15(101) |       | 1    | Y    | 0.04000 | 0.03858 | 3.5    |
| 4   | C15(96)  | I     | 2    | -    |         |         |        |
| 5   | C15(101) |       | 2    | Y    | 0.04000 | 0.03850 | 3.8    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 3.65  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |



## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7263.D                      |        | M7274K.D                     |        | M7285.D                      |        |
|-----|-----------|-------|------|------|---------|------------------------------|--------|------------------------------|--------|------------------------------|--------|
|     |           |       |      |      |         | MID                          | % Diff | MID                          | % Diff | MID                          | % Diff |
|     |           |       |      |      |         | IE07 mid<br>10/26/2014 17:09 |        | IE07 mid<br>10/27/2014 09:31 |        | IE07 mid<br>10/27/2014 17:41 |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.04011                      | 0.1    | 0.04129                      | 3.0    | 0.03832                      | -4.4   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.03887                      | -3.2   | 0.04149                      | 3.3    | 0.03893                      | -3.1   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04052                      | 1.3    | 0.04257                      | 6.4    | 0.03918                      | -2.1   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.04271                      | 6.3    | 0.04180                      | 4.1    | 0.04071                      | 1.4    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.04017                      | 0.3    | 0.04252                      | 6.2    | 0.03986                      | -0.4   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.04165                      | 3.7    | 0.04148                      | 3.3    | 0.04025                      | 0.2    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.04275                      | 6.7    | 0.04120                      | 2.8    | 0.04032                      | 0.6    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.03627                      | -9.5   | 0.03737                      | -6.8   | 0.03815                      | -4.8   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04036                      | 0.5    | 0.04348                      | 8.3    | 0.04259                      | 6.1    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.04026                      | 0.2    | 0.04330                      | 7.8    | 0.04038                      | 0.5    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.03717                      | -7.4   | 0.03871                      | -3.6   | 0.03776                      | -6.0   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.04083                      | 1.8    | 0.04307                      | 7.4    | 0.03834                      | -4.4   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.04020                      | 0.1    | 0.03990                      | -0.6   | 0.03935                      | -2.0   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04012                      | -0.1   | 0.04029                      | 0.3    | 0.04050                      | 0.8    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03747                      | -6.7   | 0.04103                      | 2.2    | 0.04319                      | 7.5    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.03964                      | -1.3   | 0.03984                      | -0.8   | 0.03955                      | -1.5   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.03984                      | -0.8   | 0.03989                      | -0.7   | 0.03946                      | -1.7   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.03966                      | -1.2   | 0.04066                      | 1.2    | 0.04002                      | -0.3   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.03812                      | -4.9   | 0.04049                      | 1.0    | 0.03947                      | -1.5   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.03732                      | -7.1   | 0.03996                      | -0.5   | 0.03929                      | -2.2   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.04129                      | 3.0    | 0.04010                      | 0.0    | 0.03875                      | -3.3   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03985                      | -0.8   | 0.04318                      | 7.5    | 0.03999                      | -0.4   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04083                      | 2.1    | 0.03997                      | -0.1   | 0.03910                      | -2.2   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.04205                      | 4.7    | 0.04032                      | 0.4    | 0.03940                      | -1.9   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.04244                      | 6.0    | 0.04085                      | 2.0    | 0.04019                      | 0.4    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.03739                      | -6.9   | 0.03979                      | -0.9   | 0.04123                      | 2.7    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04287                      | 7.0    | 0.04195                      | 4.7    | 0.04197                      | 4.7    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03915                      | -2.3   | 0.04031                      | 0.6    | 0.04002                      | -0.1   |
| 33  | Cl6(161)  | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04015                      | 0.0    | 0.04055                      | 1.0    | 0.03884                      | -3.3   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03668                      | -8.7   | 0.03838                      | -4.4   | 0.04050                      | 0.8    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03936                      | -2.0   | 0.04026                      | 0.2    | 0.03947                      | -1.7   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.04009                      | -0.1   | 0.04082                      | 1.7    | 0.04024                      | 0.3    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.03919                      | -2.4   | 0.04142                      | 3.1    | 0.04124                      | 2.7    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.03997                      | -0.5   | 0.04218                      | 5.0    | 0.04117                      | 2.5    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.03995                      | -0.5   | 0.04239                      | 5.6    | 0.04127                      | 2.8    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.03956                      | -1.5   | 0.04105                      | 2.2    | 0.04217                      | 5.0    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.03891                      | -3.1   | 0.04155                      | 3.5    | 0.04126                      | 2.7    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.03869                      | -3.7   | 0.04217                      | 5.0    | 0.04121                      | 2.6    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.03868                      | -3.5   | 0.04316                      | 7.7    | 0.04098                      | 2.2    |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417B.M Last Updated: 10/28/2014 9:02:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7263.D     |        | M7274K.D |        | M7285.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|----------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID      | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.03940     | -1.9   | 0.04320  | 7.6    | 0.04086 | 1.7    |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 3.1    | 3.3      | 2.4    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24     | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7325.D          |                  | M7341.D          |      | M7364.D  |       |
|-----|-----------|-------|------|------|---------|------------------|------------------|------------------|------|----------|-------|
|     |           |       |      |      |         | IE07 mid         |                  | IE07 mid         |      | IE07 mid |       |
|     |           |       |      |      |         | 10/29/2014 16:31 | 10/30/2014 04:24 | 10/31/2014 10:49 |      |          |       |
|     |           |       |      |      | MID     | % Diff           | MID              | % Diff           | MID  | % Diff   |       |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |                  |                  |      |          |       |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.04015          | 0.2              | 0.03738          | -6.7 | 0.03769  | -6.0  |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.04095          | 2.0              | 0.03893          | -3.1 | 0.04070  | 1.3   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03917          | -2.1             | 0.03795          | -5.1 | 0.03836  | -4.1  |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.04136          | 3.0              | 0.03849          | -4.2 | 0.03979  | -0.9  |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03970          | -0.8             | 0.03900          | -2.6 | 0.03851  | -3.8  |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.04109          | 2.3              | 0.03908          | -2.7 | 0.04149  | 3.3   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.04104          | 2.4              | 0.03948          | -1.5 | 0.03885  | -3.1  |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.03851          | -3.9             | 0.03788          | -5.5 | 0.04350  | 8.5   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |                  |                  |      |          |       |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04207          | 4.8              | 0.04264          | 6.2  | 0.04211  | 4.9   |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.04139          | 3.1              | 0.04056          | 1.0  | 0.03614  | -10.0 |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.03854          | -4.0             | 0.03964          | -1.3 | 0.04090  | 1.8   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.03904          | -2.7             | 0.04262          | 6.2  | 0.04081  | 1.7   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.04136          | 3.0              | 0.03923          | -2.3 | 0.03906  | -2.7  |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04148          | 3.3              | 0.04046          | 0.7  | 0.04079  | 1.6   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03905          | -2.8             | 0.04365          | 8.7  | 0.04334  | 7.9   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.04071          | 1.4              | 0.03896          | -3.0 | 0.04110  | 2.3   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.04106          | 2.2              | 0.03908          | -2.7 | 0.04167  | 3.8   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04161          | 3.6              | 0.03977          | -1.0 | 0.04276  | 6.5   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.04148          | 3.5              | 0.03925          | -2.1 | 0.04348  | 8.5   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04131          | 2.9              | 0.03929          | -2.2 | 0.04395  | 9.4   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |                  |                  |      |          |       |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.04040          | 0.8              | 0.03946          | -1.5 | 0.04031  | 0.6   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03829          | -4.7             | 0.03676          | -8.5 | 0.04063  | 1.2   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03980          | -0.5             | 0.03964          | -0.9 | 0.04070  | 1.7   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.04018          | 0.0              | 0.03787          | -5.7 | 0.03681  | -8.3  |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.04106          | 2.5              | 0.04238          | 5.8  | 0.03856  | -3.7  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.03850          | -4.1             | 0.04020          | 0.1  | 0.03783  | -5.8  |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04208          | 5.0              | 0.04196          | 4.7  | 0.03967  | -1.0  |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03655          | -8.8             | 0.04359          | 8.8  | 0.03734  | -6.8  |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |                  |                  |      |          |       |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.03892          | -3.1             | 0.04154          | 3.4  | 0.04121  | 2.6   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03472          | -13.5            | 0.03934          | -2.0 | 0.03776  | -6.0  |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03750          | -6.6             | 0.03939          | -1.9 | 0.03741  | -6.8  |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03881          | -3.3             | 0.03997          | -0.4 | 0.03788  | -5.6  |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04021          | 0.1              | 0.03706          | -7.7 | 0.04225  | 5.2   |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.03942          | -1.8             | 0.04106          | 2.2  | 0.04096  | 2.0   |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04013          | -0.1             | 0.04090          | 1.8  | 0.03960  | -1.4  |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04123          | 2.7              | 0.04113          | 2.4  | 0.04054  | 0.9   |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.04250          | 5.8              | 0.04058          | 1.0  | 0.04084  | 1.7   |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04378          | 9.0              | 0.04071          | 1.4  | 0.04204  | 4.7   |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.04679          | 16.7             | 0.04088          | 2.0  | 0.04354  | 8.6   |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417B.M Last Updated: 10/28/2014 9:02:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7325.D     |        | M7341.D |        | M7364.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.04729     | 17.8   | 0.04108 | 2.3    | 0.04454 | 10.9   |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 4.0    | 3.3     | 4.4    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

**M7603.D**

IE07 mid

11/15/2014 09:03

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.03830 | -4.4   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.03844 | -4.3   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03865 | -3.4   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.03954 | -1.5   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03849 | -3.9   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.03993 | -0.6   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.03790 | -5.4   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.04013 | 0.1    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04194 | 4.4    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.03709 | -7.6   |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.03847 | -4.2   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.04158 | 3.6    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.03866 | -3.7   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04004 | -0.3   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03749 | -6.6   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.03922 | -2.3   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.03895 | -3.0   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04020 | 0.1    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.03987 | -0.5   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04027 | 0.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03753 | -6.4   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03562 | -11.3  |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03886 | -2.9   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.03728 | -7.2   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.03764 | -6.0   |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.04091 | 1.9    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04016 | 0.2    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.04330 | 8.0    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.03978 | -0.9   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03660 | -8.9   |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03906 | -2.7   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03760 | -6.3   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04239 | 5.6    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04076 | 1.5    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.03988 | -0.7   |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04108 | 2.3    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.04103 | 2.2    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04193 | 4.4    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.04240 | 5.8    |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

### M7603.D

IE07 mid

11/15/2014 09:03

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.04311 | 7.3    |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean PD:** **3.8**  
**Time Check:** **< 24**

### CCV Acceptance Criteria:

|                   |           |              |          |
|-------------------|-----------|--------------|----------|
| Frequency Hours:  | <u>24</u> | <b>Qual:</b> | <u>N</u> |
| Mean PD(%):       | <u>15</u> | <b>Qual:</b> | <u>N</u> |
| Individual PD(%): | <u>20</u> | <b>Qual:</b> | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7252.D          |                  | M7274.D          |                  | M7292.D  |      |
|-----|-----------|-------|------|------|---------|------------------|------------------|------------------|------------------|----------|------|
|     |           |       |      |      |         | IE08 mid         |                  | IE08 mid         |                  | IE08 mid |      |
|     |           |       |      |      |         | 10/26/2014 08:59 | 10/27/2014 01:19 | 10/27/2014 01:19 | 10/27/2014 22:52 |          |      |
|     |           |       |      |      | MID     | % Diff           | MID              | % Diff           | MID              | % Diff   |      |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |                  |                  |                  |          |      |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.07434          | -7.3             | 0.07882          | -1.7             | 0.07478  | -6.7 |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.07323          | -8.8             | 0.07733          | -3.7             | 0.07708  | -4.0 |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07634          | -4.6             | 0.07969          | -0.4             | 0.07897  | -1.3 |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07644          | -4.8             | 0.08168          | 1.7              | 0.08215  | 2.3  |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07409          | -7.5             | 0.07876          | -1.6             | 0.08004  | 0.0  |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07642          | -4.9             | 0.08060          | 0.3              | 0.07973  | -0.7 |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07641          | -4.7             | 0.07931          | -1.1             | 0.08183  | 2.1  |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.08166          | 1.9              | 0.07302          | -8.9             | 0.07633  | -4.8 |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |                  |                  |                  |          |      |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.07834          | -2.5             | 0.07994          | -0.5             | 0.07985  | -0.6 |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.07659          | -4.6             | 0.07604          | -5.3             | 0.07858  | -2.2 |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.07640          | -4.9             | 0.07271          | -9.5             | 0.07482  | -6.8 |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.08807          | 9.8              | 0.07516          | -6.3             | 0.08137  | 1.4  |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07777          | -3.2             | 0.07733          | -3.7             | 0.07900  | -1.6 |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.07786          | -3.1             | 0.07789          | -3.0             | 0.07972  | -0.7 |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.08282          | 3.1              | 0.07680          | -4.4             | 0.07576  | -5.7 |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07869          | -2.0             | 0.07769          | -3.3             | 0.07863  | -2.1 |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07797          | -2.9             | 0.07806          | -2.8             | 0.07638  | -4.9 |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.07792          | -3.0             | 0.07936          | -1.2             | 0.07842  | -2.4 |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07637          | -4.7             | 0.07757          | -3.2             | 0.07704  | -3.9 |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07609          | -5.3             | 0.07636          | -4.9             | 0.07611  | -5.2 |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |                  |                  |                  |          |      |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07949          | -0.8             | 0.07632          | -4.8             | 0.07494  | -6.5 |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07574          | -5.7             | 0.07320          | -8.9             | 0.08179  | 1.8  |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07866          | -1.7             | 0.07924          | -0.9             | 0.07574  | -5.3 |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07708          | -4.0             | 0.07834          | -2.5             | 0.07617  | -5.2 |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.08149          | 1.8              | 0.07927          | -1.0             | 0.07335  | -8.4 |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.07792          | -3.0             | 0.08243          | 2.6              | 0.07518  | -6.4 |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.08148          | 1.6              | 0.08252          | 2.9              | 0.08022  | 0.1  |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.08262          | 3.1              | 0.08514          | 6.2              | 0.07833  | -2.3 |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |                  |                  |                  |          |      |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.08199          | 2.1              | 0.08088          | 0.7              | 0.07511  | -6.5 |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.07746          | -3.6             | 0.07367          | -8.3             | 0.07981  | -0.6 |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.07835          | -2.5             | 0.07380          | -8.1             | 0.07887  | -1.8 |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.07977          | -0.6             | 0.07693          | -4.1             | 0.07965  | -0.7 |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08555          | 6.5              | 0.08260          | 2.8              | 0.08499  | 5.8  |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.07888          | -1.8             | 0.07797          | -2.9             | 0.08136  | 1.3  |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.07937          | -1.2             | 0.07973          | -0.7             | 0.08134  | 1.3  |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.07892          | -1.7             | 0.08514          | 6.0              | 0.07920  | -1.4 |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.07858          | -2.2             | 0.08610          | 7.2              | 0.07909  | -1.5 |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.07814          | -2.7             | 0.09044          | 12.6             | 0.07921  | -1.4 |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.07778          | -3.0             | 0.09579          | 19.5             | 0.07825  | -2.4 |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

| No:  | Analyte:  | Type: | Col: | MQO: | CAL     | M7252.D            |                | M7274.D        |                | M7292.D |        |
|--|-----------|-------|------|------|---------|--------------------|----------------|----------------|----------------|---------|--------|
|  |           |       |      |      |         | MID                | % Diff         | MID            | % Diff         | MID     | % Diff |
| 45   | Cl10(209) |       | 2    | Y    | 0.08032 | 0.07857            | -2.2           | 0.09600        | 19.5           | 0.07770 | -3.3   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | <b>Mean PD:</b>    | <b>3.6</b>     | <b>4.7</b>     | <b>3.1</b>     |         |        |
|  |           |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b> | <b>&lt; 24</b> | <b>&lt; 24</b> |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |



## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417B.M **Last Updated:** 10/28/2014 9:02:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7336.D          |        | M7366.D          |        | M7614.D          |        |
|-----|-----------|-------|------|------|---------|------------------|--------|------------------|--------|------------------|--------|
|     |           |       |      |      |         | MID              | % Diff | MID              | % Diff | MID              | % Diff |
|     |           |       |      |      |         | 10/30/2014 00:41 |        | 10/31/2014 12:18 |        | 11/15/2014 17:13 |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |        |                  |        |                  |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.07077          | -11.7  | 0.08039          | 0.3    | 0.07247          | -9.6   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.07138          | -11.1  | 0.08189          | 2.0    | 0.07231          | -10.0  |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07267          | -9.2   | 0.07633          | -4.6   | 0.07379          | -7.8   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07520          | -6.4   | 0.07849          | -2.3   | 0.07473          | -7.0   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07414          | -7.4   | 0.07784          | -2.8   | 0.07322          | -8.6   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07592          | -5.5   | 0.07662          | -4.6   | 0.07575          | -5.7   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07483          | -6.6   | 0.07726          | -3.6   | 0.07176          | -10.5  |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.07239          | -9.7   | 0.07582          | -5.4   | 0.07778          | -3.0   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |        |                  |        |                  |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.08224          | 2.4    | 0.08356          | 4.0    | 0.08219          | 2.3    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.07567          | -5.8   | 0.08224          | 2.4    | 0.07140          | -11.1  |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.08346          | 3.9    | 0.07782          | -3.1   | 0.07584          | -5.6   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.07595          | -5.3   | 0.07944          | -1.0   | 0.07429          | -7.4   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07814          | -2.7   | 0.08105          | 0.9    | 0.07633          | -5.0   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.08215          | 2.3    | 0.08042          | 0.1    | 0.07808          | -2.8   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.07144          | -11.1  | 0.07541          | -6.1   | 0.08026          | -0.1   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07931          | -1.3   | 0.07946          | -1.1   | 0.07838          | -2.4   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07840          | -2.4   | 0.07969          | -0.8   | 0.07795          | -3.0   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.08041          | 0.1    | 0.07976          | -0.7   | 0.08042          | 0.1    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07902          | -1.4   | 0.07833          | -2.3   | 0.08048          | 0.4    |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07819          | -2.7   | 0.07835          | -2.5   | 0.08152          | 1.5    |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |        |                  |        |                  |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07344          | -8.4   | 0.07981          | -0.4   | 0.07001          | -12.7  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07504          | -6.6   | 0.08020          | -0.1   | 0.07231          | -10.0  |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07384          | -7.7   | 0.07965          | -0.4   | 0.07285          | -8.9   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07188          | -10.5  | 0.07883          | -1.9   | 0.06999          | -12.9  |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.07064          | -11.8  | 0.07573          | -5.4   | 0.07005          | -12.5  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.07663          | -4.6   | 0.08710          | 8.4    | 0.08037          | 0.1    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.07900          | -1.4   | 0.07734          | -3.5   | 0.07808          | -2.6   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.07763          | -3.2   | 0.07804          | -2.6   | 0.08609          | 7.4    |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |        |                  |        |                  |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.08804          | 9.6    | 0.07806          | -2.8   | 0.08852          | 10.2   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.08199          | 2.1    | 0.07593          | -5.5   | 0.08126          | 1.2    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.07715          | -3.9   | 0.07930          | -1.3   | 0.07587          | -5.5   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.07846          | -2.2   | 0.08023          | 0.0    | 0.07706          | -4.0   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08475          | 5.5    | 0.07407          | -7.8   | 0.08038          | 0.1    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.08068          | 0.4    | 0.08126          | 1.2    | 0.08036          | 0.0    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.08038          | 0.1    | 0.08143          | 1.4    | 0.08039          | 0.1    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08027          | -0.1   | 0.08118          | 1.1    | 0.08380          | 4.3    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08012          | -0.2   | 0.07910          | -1.5   | 0.08437          | 5.0    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08046          | 0.2    | 0.07868          | -2.0   | 0.08685          | 8.1    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.07981          | -0.4   | 0.07747          | -3.4   | 0.08926          | 11.4   |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417B.M Last Updated: 10/28/2014 9:02:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7336.D     |        | M7366.D |        | M7614.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.08032 | 0.07953     | -1.0   | 0.07800 | -2.9   | 0.09044 | 12.6   |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 4.7    | 2.6     | 5.8    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7263.D            |                  | M7274K.D         |                | M7285.D |        |
|--|----------|-------|------|------|---------|--------------------|------------------|------------------|----------------|---------|--------|
|  |          |       |      |      |         | MID                | % Diff           | MID              | % Diff         | MID     | % Diff |
|  |          |       |      |      |         | IE07 mid           | IE07 mid         | IE07 mid         |                |         |        |
|  |          |       |      |      |         | 10/26/2014 17:09   | 10/27/2014 09:31 | 10/27/2014 17:41 |                |         |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                    |                  |                  |                |         |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.04008 | 0.03830            | -4.4             | 0.03899          | -2.7           | 0.03900 | -2.7   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                    |                  |                  |                |         |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.04008 | 0.03850            | -3.9             | 0.03818          | -4.7           | 0.04268 | 6.5    |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>    | <b>4.2</b>       | <b>3.7</b>       | <b>4.6</b>     |         |        |
|  |          |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b>   | <b>&lt; 24</b>   | <b>&lt; 24</b> |         |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

M7364.D

IE07 mid

10/31/2014 10:49

| No: | Analyte: | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)  | I     | 1    | -    |         |         |        |
| 2   | Cl5(101) |       | 1    | Y    | 0.04008 | 0.04531 | 13.0   |
| 4   | Cl5(96)  | I     | 2    | -    |         |         |        |
| 5   | Cl5(101) |       | 2    | Y    | 0.04008 | 0.04269 | 6.5    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **9.8**  
Time Check: **< 24**

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0493 **Data Set:** DP-14-0675  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417F.M **Last Updated:** 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7252.D                      |                | M7274.D                      |                | M7292.D                      |        |
|--|----------|-------|------|------|---------|------------------------------|----------------|------------------------------|----------------|------------------------------|--------|
|  |          |       |      |      |         | MID                          | % Diff         | MID                          | % Diff         | MID                          | % Diff |
|  |          |       |      |      |         | IE08 mid<br>10/26/2014 08:59 |                | IE08 mid<br>10/27/2014 01:19 |                | IE08 mid<br>10/27/2014 22:52 |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                              |                |                              |                |                              |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.08016 | 0.07905                      | -1.4           | 0.07740                      | -3.4           | 0.07258                      | -9.5   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                              |                |                              |                |                              |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.08016 | 0.07520                      | -6.2           | 0.07226                      | -9.9           | 0.07319                      | -8.7   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>              | <b>3.8</b>     | <b>6.7</b>                   | <b>9.1</b>     |                              |        |
|  |          |       |      |      |         | <b>Time Check:</b>           | <b>&lt; 24</b> | <b>&lt; 24</b>               | <b>&lt; 24</b> |                              |        |

**CCV Acceptance Criteria:**

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

Batch: 14-0493 Data Set: DP-14-0675  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

M7366.D  
IE08 mid  
10/31/2014 12:18

| No: | Analyte: | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)  | I     | 1    | -    |         |         |        |
| 2   | Cl5(101) |       | 1    | Y    | 0.08016 | 0.07937 | -1.0   |
| 4   | Cl5(96)  | I     | 2    | -    |         |         |        |
| 5   | Cl5(101) |       | 2    | Y    | 0.08016 | 0.07734 | -3.5   |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **2.3**  
Time Check: **< 24**

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 45

IE03 =M7205.D IE05 =M7207.D IE06 =M7208.D IE07 =M7209.D  
 IE08 =M7210.D IE10 =M7212.D

| Compound |              | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------|--------------|---------|---------|---------|---------|---------|---------|
| 1 I      | C15(96)      | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2        | C12(8)       | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3        | C13(18)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 4 s      | C13(34)      | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 5        | C13(28)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 6        | C14(52)      | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 7        | C14(44)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 8        | C14(66)      | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 9        | C15(101)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 10 I     | C16(161)     | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 11 s     | C16(152)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 12       | C15(118)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 13       | C16(153)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 14       | C15(105)     | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 15       | C16(138)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 16       | C17(187)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 17       | C16(128)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 18       | C17(180)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 19       | C17(170)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 20       | C18(195)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 21       | C19(206)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 22       | C110(209)    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 23       | Signal #2    | -----   | -----   | -----   | -----   | -----   | -----   |
| 24 I     | C15(96) #2   | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 25       | C12(8) #2    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 26       | C13(18) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 27 s     | C13(34) #2   | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 28       | C13(28) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 29       | C14(52) #2   | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 30       | C14(44) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 31       | C14(66) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 32       | C15(101) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 33 I     | C16(161) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 34 s     | C16(152) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 35       | C15(118) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 36       | C16(153) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 37       | C15(105) #2  | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 38       | C16(138) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 39       | C17(187) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 40       | C16(128) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 41       | C17(180) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 42       | C17(170) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 43       | C18(195) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 44       | C19(206) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 45       | C110(209) #2 | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015

Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override



Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 5

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound       | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C15(101)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 Signal #2    | -----   | -----   | -----   | -----   | -----   | -----   |
| 4 I C15(96) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 5 C15(101) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc     | Units |
|------------------------------------|----------|-----------|----------|-------|
| <b>Internal Standards</b>          |          |           |          |       |
| 1) I C15(96)                       | 17.39    | 2021371m  | 0.10000  | ng    |
| 10) I C16(161)                     | 23.21    | 4304957   | 0.10000  | ng    |
| 24) I C15(96) #2                   | 20.51    | 12822282m | 0.10000  | ng    |
| 33) I C16(161) #2                  | 26.79    | 28199596m | 0.10000  | ng    |
| <b>System Monitoring Compounds</b> |          |           |          |       |
| 4) s C13(34)                       | 13.40    | 119959m   | BelowCal | ng    |
| Spiked Amount                      | 0.0024   | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 20.48    | 106015    | BelowCal | ng    |
| Spiked Amount                      | 0.0024   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 16.48    | 687843m   | BelowCal | ng    |
| Spiked Amount                      | 0.0024   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 23.58    | 473925m   | BelowCal | ng    |
| Spiked Amount                      | 0.0024   | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |          |           |          |       |
| 2) C12(8)                          | 10.21    | 49812m    | BelowCal | ng    |
| 3) C13(18)                         | 12.13    | 63919m    | BelowCal | ng    |
| 5) C13(28)                         | 14.21    | 91859m    | BelowCal | ng    |
| 6) C14(52)                         | 15.84    | 129752    | BelowCal | ng    |
| 7) C14(44)                         | 16.70    | 95909     | BelowCal | ng    |
| 8) C14(66)                         | 18.60    | 103819m   | BelowCal | ng    |
| 9) C15(101)                        | 19.73    | 90878m    | BelowCal | ng    |
| 12) C15(118)                       | 22.40    | 106241m   | BelowCal | ng    |
| 13) C16(153)                       | 23.43 TW | 91576m    | BelowCal | ng    |
| 14) C15(105)                       | 23.44 TW | 124823m   | BelowCal | ng    |
| 15) C16(138)                       | 24.53    | 127136m   | BelowCal | ng    |
| 16) C17(187)                       | 25.29    | 111442m   | BelowCal | ng    |
| 17) C16(128)                       | 25.63    | 120454m   | BelowCal | ng    |
| 18) C17(180)                       | 27.16    | 127788    | BelowCal | ng    |
| 19) C17(170)                       | 27.96    | 138646m   | BelowCal | ng    |
| 20) C18(195)                       | 29.04    | 129501    | BelowCal | ng    |
| 21) C19(206)                       | 30.30    | 121956m   | BelowCal | ng    |
| 22) C110(209)                      | 30.90    | 102714m   | BelowCal | ng    |
| 25) C12(8) #2                      | 13.11    | 291232m   | BelowCal | ng    |
| 26) C13(18) #2                     | 15.00    | 430280m   | BelowCal | ng    |
| 28) C13(28) #2                     | 17.76    | 635375m   | BelowCal | ng    |
| 29) C14(52) #2                     | 19.15f   | 407881m   | BelowCal | ng    |
| 30) C14(44) #2                     | 19.96    | 700530m   | BelowCal | ng    |
| 31) C14(66) #2                     | 22.36    | 702095m   | BelowCal | ng    |
| 32) C15(101) #2                    | 23.30f   | 369053m   | BelowCal | ng    |
| 35) C15(118) #2                    | 26.37    | 931211m   | BelowCal | ng    |
| 36) C16(153) #2                    | 26.93    | 730887    | BelowCal | ng    |
| 37) C15(105) #2                    | 27.20    | 816392    | BelowCal | ng    |
| 38) C16(138) #2                    | 27.78    | 461727m   | BelowCal | ng    |
| 39) C17(187) #2                    | 28.14    | 667680    | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 880477m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 788251m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 800002m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 715719m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 637238m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 518551m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2103011   | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4562564   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12416297m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 27129752m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.39    | 297705    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 348526    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.47    | 1801754m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.57    | 1960933m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 180784    | BelowCal | ng    |
| 3) C13(18)                  | 12.12    | 242567    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 356002    | BelowCal | ng    |
| 6) C14(52)                  | 15.83    | 330341    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 371149    | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 419278    | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 349240m   | BelowCal | ng    |
| 12) C15(118)                | 22.39    | 435665    | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 390283m   | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 495013m   | BelowCal | ng    |
| 15) C16(138)                | 24.54    | 508129    | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 449817    | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 436637m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 515383    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 571467    | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 524255m   | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 492822m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 411674m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 1082243m  | BelowCal | ng    |
| 26) C13(18) #2              | 14.99    | 1474380m  | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 2242630m  | BelowCal | ng    |
| 29) C14(52) #2              | 19.14    | 1313663m  | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 2184906m  | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 2512274m  | BelowCal | ng    |
| 32) C15(101) #2             | 23.22f   | 2401459m  | BelowCal | ng    |
| 35) C15(118) #2             | 26.34    | 1802006m  | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 2453717   | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 2870795   | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 1892629m  | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 2289736   | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3074334  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 2699532  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 2859094m | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 2571011m | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 2275330m | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 1828475m | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc          | Units |
|------------------------------------|----------|-----------|---------------|-------|
| <b>Internal Standards</b>          |          |           |               |       |
| 1) I C15(96)                       | 17.39    | 2225995   | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21    | 4815577   | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51    | 13716870m | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79    | 29503850m | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |          |           |               |       |
| 4) s C13(34)                       | 13.40    | 526303    | BelowCal      | ng    |
| Spiked Amount                      | 0.0200   | Recovery  | =             | 0.00% |
| 11) s C16(152)                     | 20.48    | 653892    | BelowCal      | ng    |
| Spiked Amount                      | 0.0201   | Recovery  | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47    | 3296041m  | BelowCal      | ng    |
| Spiked Amount                      | 0.0200   | Recovery  | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58    | 3413733m  | BelowCal      | ng    |
| Spiked Amount                      | 0.0201   | Recovery  | =             | 0.00% |
| <b>Target Compounds</b>            |          |           |               |       |
| 2) C12(8)                          | 10.20    | 333163    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12    | 432057    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21    | 687914    | BelowCal      | ng    |
| 6) C14(52)                         | 15.83    | 566807    | BelowCal      | ng    |
| 7) C14(44)                         | 16.70    | 718063    | BelowCal      | ng    |
| 8) C14(66)                         | 18.60    | 781317    | BelowCal      | ng    |
| 9) C15(101)                        | 19.73    | 762207m   | BelowCal      | ng    |
| 12) C15(118)                       | 22.39    | 822121    | 0.03093       | ng    |
| 13) C16(153)                       | 23.43 TW | 582042m   | BelowCal      | ng    |
| 14) C15(105)                       | 23.44 TW | 965663m   | BelowCal      | ng    |
| 15) C16(138)                       | 24.53    | 972641    | BelowCal      | ng    |
| 16) C17(187)                       | 25.29    | 855745    | BelowCal      | ng    |
| 17) C16(128)                       | 25.63    | 864076m   | BelowCal      | ng    |
| 18) C17(180)                       | 27.16    | 964577    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96    | 1081580   | BelowCal      | ng    |
| 20) C18(195)                       | 29.04    | 1016052   | 0.02214       | ng    |
| 21) C19(206)                       | 30.30 e  | 959902m   | BelowCal      | ng    |
| 22) C110(209)                      | 30.90    | 792978    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10    | 2106184m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99    | 2769502m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76    | 4386422m  | BelowCal      | ng    |
| 29) C14(52) #2                     | 19.14    | 2862174m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96    | 4484836m  | BelowCal      | ng    |
| 31) C14(66) #2                     | 22.35    | 4845930m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.22f   | 5513291m  | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35    | 4335255m  | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93    | 4720338   | 1858066.56915 | ng    |
| 37) C15(105) #2                    | 27.20    | 5791618   | 1122307.10620 | ng    |
| 38) C16(138) #2                    | 27.78    | 3691173m  | BelowCal      | ng    |
| 39) C17(187) #2                    | 28.14    | 4540027   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc          | Units |
|-----|--------------|-------|----------|---------------|-------|
| 40) | C16(128) #2  | 28.54 | 6164428  | BelowCal      | ng    |
| 41) | C17(180) #2  | 29.58 | 5451699  | BelowCal      | ng    |
| 42) | C17(170) #2  | 30.21 | 5828332m | 1341992.36163 | ng    |
| 43) | C18(195) #2  | 31.08 | 5312720  | BelowCal      | ng    |
| 44) | C19(206) #2  | 32.18 | 4740147m | BelowCal      | ng    |
| 45) | C110(209) #2 | 32.62 | 3772500m | 1559880.63544 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response    | Conc          | Units |
|------------------------------------|--------|-------------|---------------|-------|
| <b>Internal Standards</b>          |        |             |               |       |
| 1) I C15(96)                       | 17.39  | 2400478     | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5366502     | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 14992953m   | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34497986    | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |             |               |       |
| 4) s C13(34)                       | 13.40  | 990336      | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 1280995     | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 6281919m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58  | 7591525m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| <b>Target Compounds</b>            |        |             |               |       |
| 2) C12(8)                          | 10.21  | e 607269    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | e 758928    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | e 1349346   | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | e 1019304   | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | e 1370610   | 4937947.47625 | ng    |
| 8) C14(66)                         | 18.60  | e 1544814   | BelowCal      | ng    |
| 9) C15(101)                        | 19.73  | e 1552699m  | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | e 1625326   | BelowCal      | ng    |
| 13) C16(153)                       | 23.43  | TW 1671077m | BelowCal      | ng    |
| 14) C15(105)                       | 23.44  | TW 2067241m | BelowCal      | ng    |
| 15) C16(138)                       | 24.53  | E 1975640   | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | e 1704362m  | BelowCal      | ng    |
| 17) C16(128)                       | 25.63  | e 1845001m  | BelowCal      | ng    |
| 18) C17(180)                       | 27.16  | E 2019174m  | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 2282709   | 3008040.19192 | ng    |
| 20) C18(195)                       | 29.04  | E 2138682m  | BelowCal      | ng    |
| 21) C19(206)                       | 30.30  | E 2074698m  | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 1700197m  | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | e 4038278m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | e 4609294m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | e 8581359m  | 2635734.36911 | ng    |
| 29) C14(52) #2                     | 19.14  | e 4960711m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96  | e 8717176m  | 1574158.07943 | ng    |
| 31) C14(66) #2                     | 22.36  | e 9936993m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | e 12947398m | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 9808234m  | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 9577231   | 5152267.10485 | ng    |
| 37) C15(105) #2                    | 27.20  | E 12760987  | 3375570.13183 | ng    |
| 38) C16(138) #2                    | 27.78  | e 8526537m  | 1389497.67562 | ng    |
| 39) C17(187) #2                    | 28.14  | E 9590626   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units            |
|-----|--------------|-------|----------|-----------|------------------|
| 40) | C16(128) #2  | 28.54 | E        | 13380771  | BelowCal ng      |
| 41) | C17(180) #2  | 29.58 | E        | 11878441m | BelowCal ng      |
| 42) | C17(170) #2  | 30.21 | E        | 12986040m | 4087411.97930 ng |
| 43) | C18(195) #2  | 31.08 | E        | 11911883m | BelowCal ng      |
| 44) | C19(206) #2  | 32.18 | E        | 10701956m | BelowCal ng      |
| 45) | C110(209) #2 | 32.62 | E        | 8387432m  | 5983940.61406 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response      | Conc          | Units |
|------------------------------------|--------|---------------|---------------|-------|
| <b>Internal Standards</b>          |        |               |               |       |
| 1) I C15(96)                       | 17.39  | 2523572       | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5424577       | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 15446142m     | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34872167      | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |               |               |       |
| 4) s C13(34)                       | 13.40  | 1861197       | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 2391536       | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 12156621m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 13279030m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| <b>Target Compounds</b>            |        |               |               |       |
| 2) C12(8)                          | 10.21  | E 1130878     | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | E 1399997     | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | E 2563059     | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | E 1879706     | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | E 2546734m    | 8209713.15303 | ng    |
| 8) C14(66)                         | 18.60  | E 2898127     | BelowCal      | ng    |
| 9) C15(101)                        | 19.74  | E 2892299m    | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | E 2978206     | BelowCal      | ng    |
| 13) C16(153)                       | 23.44  | TW e 2876946m | BelowCal      | ng    |
| 14) C15(105)                       | 23.45  | TW e 3582092m | 1460512.29312 | ng    |
| 15) C16(138)                       | 24.54  | E 3695490     | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | E 3239289     | BelowCal      | ng    |
| 17) C16(128)                       | 25.64  | E 3673746m    | 3005443.36077 | ng    |
| 18) C17(180)                       | 27.15  | E 3855848m    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 4378231     | 5123824.53354 | ng    |
| 20) C18(195)                       | 29.04  | E 4116319m    | BelowCal      | ng    |
| 21) C19(206)                       | 30.31  | E 3960506m    | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 3217630m    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | E 7701304     | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | E 8745402m    | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | E 16942159    | 4721046.44848 | ng    |
| 29) C14(52) #2                     | 19.14  | E 9969394     | 3586542.90657 | ng    |
| 30) C14(44) #2                     | 19.96  | E 17386149m   | 5402544.89334 | ng    |
| 31) C14(66) #2                     | 22.35  | E 19075871m   | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | E 25811518m   | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 16530172m   | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 17723976    | 8475069.04022 | ng    |
| 37) C15(105) #2                    | 27.20  | E 24719069    | 5584053.95798 | ng    |
| 38) C16(138) #2                    | 27.78  | E 17133888m   | 4026737.36316 | ng    |
| 39) C17(187) #2                    | 28.14  | E 18398636    | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 26047859  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 23443478m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 25601551m | 6820215.95092 ng  |
| 43) | C18(195) #2  | 31.08 | E        | 23548017m | BelowCal ng       |
| 44) | C19(206) #2  | 32.18 | E        | 21216572m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 16438463m | 10094597.27940 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response       | Conc           | Units |
|------------------------------------|--------|----------------|----------------|-------|
| <b>Internal Standards</b>          |        |                |                |       |
| 1) I C15(96)                       | 17.39  | 2857033m       | 0.10000        | ng    |
| 10) I C16(161)                     | 23.21  | 5785136        | 0.10000        | ng    |
| 24) I C15(96) #2                   | 20.51  | 15534608m      | 0.10000        | ng    |
| 33) I C16(161) #2                  | 26.79  | 28894537       | 0.10000        | ng    |
| <b>System Monitoring Compounds</b> |        |                |                |       |
| 4) s C13(34)                       | 13.40  | 6582490m       | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 11) s C16(152)                     | 20.48  | 8920810        | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 39634387m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 49764814m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| <b>Target Compounds</b>            |        |                |                |       |
| 2) C12(8)                          | 10.21  | E 3802803      | BelowCal       | ng    |
| 3) C13(18)                         | 12.12  | E 4625770      | BelowCal       | ng    |
| 5) C13(28)                         | 14.20  | E 9305861      | BelowCal       | ng    |
| 6) C14(52)                         | 15.83  | E 6491550m     | BelowCal       | ng    |
| 7) C14(44)                         | 16.70  | E 9213228m     | 16878676.73504 | ng    |
| 8) C14(66)                         | 18.60  | E 10581706     | BelowCal       | ng    |
| 9) C15(101)                        | 19.74  | E 11214785m    | BelowCal       | ng    |
| 12) C15(118)                       | 22.39  | E 10845273     | BelowCal       | ng    |
| 13) C16(153)                       | 23.44  | TW E 11086255m | BelowCal       | ng    |
| 14) C15(105)                       | 23.45  | TW E 12238036m | 4834222.71684  | ng    |
| 15) C16(138)                       | 24.54  | E 14181010     | BelowCal       | ng    |
| 16) C17(187)                       | 25.28  | E 12362255m    | BelowCal       | ng    |
| 17) C16(128)                       | 25.63  | E 13614003m    | 7619432.15592  | ng    |
| 18) C17(180)                       | 27.16  | E 15356923     | BelowCal       | ng    |
| 19) C17(170)                       | 27.96  | E 17491960     | 11231671.25949 | ng    |
| 20) C18(195)                       | 29.04  | E 16570469m    | BelowCal       | ng    |
| 21) C19(206)                       | 30.30  | E 15913312m    | BelowCal       | ng    |
| 22) C110(209)                      | 30.90  | E 12593895m    | BelowCal       | ng    |
| 25) C12(8) #2                      | 13.10  | E 24205484m    | BelowCal       | ng    |
| 26) C13(18) #2                     | 14.99  | E 27041957m    | BelowCal       | ng    |
| 28) C13(28) #2                     | 17.76  | E 56387566m    | 9817113.52330  | ng    |
| 29) C14(52) #2                     | 19.14  | E 31213496m    | 8327658.06829  | ng    |
| 30) C14(44) #2                     | 19.96  | E 56797595m    | 12385262.50102 | ng    |
| 31) C14(66) #2                     | 22.36  | E 65508405m    | BelowCal       | ng    |
| 32) C15(101) #2                    | 23.21f | E 73990498m    | BelowCal       | ng    |
| 35) C15(118) #2                    | 26.34  | E 53052856m    | BelowCal       | ng    |
| 36) C16(153) #2                    | 26.93  | E 58782173     | 19272949.92145 | ng    |
| 37) C15(105) #2                    | 27.20  | E 87183647     | 12882056.53676 | ng    |
| 38) C16(138) #2                    | 27.78  | E 63446136m    | 10766758.70710 | ng    |
| 39) C17(187) #2                    | 28.14  | E 63573730     | BelowCal       | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc       | Units             |
|-----|--------------|-------|----------|------------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 91431997   | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 832772221m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 91217127m  | 15760612.61828 ng |
| 43) | C18(195) #2  | 31.08 | E        | 84844015m  | BelowCal ng       |
| 44) | C19(206) #2  | 32.17 | E        | 76001510m  | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 57560994m  | 23285632.07742 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:08:24 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:08:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |      |
|-----------------------------|--------|-----------|---------|---------|------|
| Internal Standards          |        |           |         |         |      |
| 1) I C15(96)                | 17.39  | 2508888   | 0.10000 | ng      |      |
| 10) I C16(161)              | 23.21  | 5353469   | 0.10000 | ng      |      |
| 24) I C15(96) #2            | 20.51  | 13890681m | 0.10000 | ng      |      |
| 33) I C16(161) #2           | 26.78  | 30447371  | 0.10000 | ng      |      |
| System Monitoring Compounds |        |           |         |         |      |
| 4) s C13(34)                | 13.40  | 1040909   | 0.04104 | ng      | 2.6  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 102.60% |      |
| 11) s C16(152)              | 20.48  | 1350202   | 0.04329 | ng      | 7.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 107.79% |      |
| 27) s C13(34) #2            | 16.47  | 6071669m  | 0.04152 | ng      | 3.8  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 103.80% |      |
| 34) s C16(152) #2           | 23.57  | 6025638m  | 0.03915 | ng      | -2.5 |
| Spiked Amount               | 0.0402 | Recovery  | =       | 97.49%  |      |
| Target Compounds            |        |           |         |         |      |
| 2) C12(8)                   | 10.21  | 664551    | 0.04326 | ng      | 8.1  |
| 3) C13(18)                  | 12.12  | 802051    | 0.04152 | ng      | 3.8  |
| 5) C13(28)                  | 14.21  | 1396518   | 0.04098 | ng      | 2.5  |
| 6) C14(52)                  | 15.83  | 1070948   | 0.04112 | ng      | 2.8  |
| 7) C14(44)                  | 16.70  | 1429186m  | 0.04174 | ng      | 4.3  |
| 8) C14(66)                  | 18.60  | 1565208   | 0.04028 | ng      | 0.7  |
| 9) C15(101)                 | 19.73  | 1499968m  | 0.03910 | ng      | -2.2 |
| 12) C15(118)                | 22.39  | 1611882m  | 0.04107 | ng      | 2.7  |
| 13) C16(153)                | 23.43  | 1591269m  | 0.04280 | ng      | 7.0  |
| 14) C15(105)                | 23.45  | 2054363m  | 0.04305 | ng      | 7.6  |
| 15) C16(138)                | 24.53  | 2023467   | 0.04232 | ng      | 5.8  |
| 16) C17(187)                | 25.29  | 1772269m  | 0.04241 | ng      | 6.0  |
| 17) C16(128)                | 25.63  | 1904336m  | 0.04114 | ng      | 2.9  |
| 18) C17(180)                | 27.15  | 2038700   | 0.04138 | ng      | 3.4  |
| 19) C17(170)                | 27.96  | 2269675   | 0.04068 | ng      | 1.7  |
| 20) C18(195)                | 29.04  | 2114012   | 0.04040 | ng      | 1.0  |
| 21) C19(206)                | 30.30  | 1967154m  | 0.03895 | ng      | -2.6 |
| 22) C110(209)               | 30.90  | 1614120m  | 0.03913 | ng      | -2.2 |
| 25) C12(8) #2               | 13.10  | 3960492m  | 0.04291 | ng      | 7.3  |
| 26) C13(18) #2              | 14.99  | 4436975m  | 0.04109 | ng      | 2.7  |
| 28) C13(28) #2              | 17.76  | 8142047m  | 0.04080 | ng      | 2.0  |
| 29) C14(52) #2              | 19.14  | 4805026m  | 0.04033 | ng      | 0.8  |
| 30) C14(44) #2              | 19.96  | 8521886m  | 0.04180 | ng      | 4.5  |
| 31) C14(66) #2              | 22.35  | 9158420m  | 0.04056 | ng      | 1.4  |
| 32) C15(101) #2             | 23.61  | 4986106m  | 0.03896 | ng      | -2.6 |
| 35) C15(118) #2             | 26.35  | 8407438m  | 0.04348 | ng      | 8.7  |
| 36) C16(153) #2             | 26.93  | 8835029   | 0.04347 | ng      | 8.7  |
| 37) C15(105) #2             | 27.20  | 11477578  | 0.04183 | ng      | 4.6  |
| 38) C16(138) #2             | 27.78  | 7720544m  | 0.04162 | ng      | 4.0  |
| 39) C17(187) #2             | 28.14  | 8806327   | 0.04269 | ng      | 6.7  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:08:24 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:08:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |      |
|-----|--------------|-------|-----------|---------|-------|------|
| 40) | C16(128) #2  | 28.54 | 11966492m | 0.04138 | ng    | 3.4  |
| 41) | C17(180) #2  | 29.58 | 10536920m | 0.04075 | ng    | 1.9  |
| 42) | C17(170) #2  | 30.21 | 11469447m | 0.04076 | ng    | 1.9  |
| 43) | C18(195) #2  | 31.08 | 10221363m | 0.03962 | ng    | -0.9 |
| 44) | C19(206) #2  | 32.18 | 9066556m  | 0.03899 | ng    | -2.5 |
| 45) | C110(209) #2 | 32.62 | 7097272m  | 0.03909 | ng    | -2.3 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7252.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0418\M7252.D\ECD2B.CH  
 Acq On : 10-26-2014 08:58:30 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:13:49 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:08:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |
|-----------------------------|--------|-----------|---------|---------|
| Internal Standards          |        |           |         |         |
| 1) I C15(96)                | 17.40  | 2503423   | 0.10000 | ng      |
| 10) I C16(161)              | 23.22  | 5514363m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52  | 13940421m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.80  | 30692359  | 0.10000 | ng      |
| System Monitoring Compounds |        |           |         |         |
| 4) s C13(34)                | 13.40  | 1786348   | 0.07634 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 95.43%  |
| 11) s C16(152)              | 20.49  | 2397242   | 0.07834 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 97.53%  |
| 27) s C13(34) #2            | 16.48  | 10812858m | 0.07866 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 98.32%  |
| 34) s C16(152) #2           | 23.59  | 12298867m | 0.08199 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 102.08% |
| Target Compounds            |        |           |         |         |
| 2) C12(8)                   | 10.21  | 1065721   | 0.07434 | ng      |
| 3) C13(18)                  | 12.13  | 1303579   | 0.07323 | ng      |
| 5) C13(28)                  | 14.21  | 2462685   | 0.07644 | ng      |
| 6) C14(52)                  | 15.84  | 1763674   | 0.07409 | ng      |
| 7) C14(44)                  | 16.71  | 2459049m  | 0.07642 | ng      |
| 8) C14(66)                  | 18.61  | 2795536   | 0.07641 | ng      |
| 9) C15(101)                 | 19.74  | 2978673m  | 0.08166 | ng      |
| 12) C15(118)                | 22.40  | 2939278   | 0.07659 | ng      |
| 13) C16(153)                | 23.44  | 2851889m  | 0.07640 | ng      |
| 14) C15(105)                | 23.46  | 4055184m  | 0.08807 | ng      |
| 15) C16(138)                | 24.55  | 3685196   | 0.07777 | ng      |
| 16) C17(187)                | 25.30  | 3223852   | 0.07786 | ng      |
| 17) C16(128)                | 25.65  | 3834265m  | 0.08282 | ng      |
| 18) C17(180)                | 27.16  | 3872506m  | 0.07869 | ng      |
| 19) C17(170)                | 27.97  | 4356203   | 0.07797 | ng      |
| 20) C18(195)                | 29.05  | 4091459   | 0.07792 | ng      |
| 21) C19(206)                | 30.31  | 3873998m  | 0.07637 | ng      |
| 22) C110(209)               | 30.91  | 3134450m  | 0.07609 | ng      |
| 25) C12(8) #2               | 13.11  | 6949443m  | 0.07949 | ng      |
| 26) C13(18) #2              | 15.00  | 7558784m  | 0.07574 | ng      |
| 28) C13(28) #2              | 17.77  | 14741098m | 0.07708 | ng      |
| 29) C14(52) #2              | 19.15  | 9127959   | 0.08149 | ng      |
| 30) C14(44) #2              | 19.97  | 15241569m | 0.07792 | ng      |
| 31) C14(66) #2              | 22.37  | 17606458  | 0.08148 | ng      |
| 32) C15(101) #2             | 23.62  | 10257493m | 0.08262 | ng      |
| 35) C15(118) #2             | 26.36  | 14513458m | 0.07746 | ng      |
| 36) C16(153) #2             | 26.94  | 15475365  | 0.07835 | ng      |
| 37) C15(105) #2             | 27.21  | 21829898  | 0.07977 | ng      |
| 38) C16(138) #2             | 27.79  | 16156800m | 0.08555 | ng      |
| 39) C17(187) #2             | 28.15  | 16073547  | 0.07888 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7252.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0418\M7252.D\ECD2B.CH  
 Acq On : 10-26-2014 08:58:30 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:13:49 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:08:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.55 | 22838498  | 0.07937 | ng    |
| 41) | C17(180) #2  | 29.59 | 20389927m | 0.07892 | ng    |
| 42) | C17(170) #2  | 30.22 | 22180553m | 0.07858 | ng    |
| 43) | C18(195) #2  | 31.09 | 20283782m | 0.07814 | ng    |
| 44) | C19(206) #2  | 32.19 | 18214661m | 0.07778 | ng    |
| 45) | C110(209) #2 | 32.63 | 14251743m | 0.07857 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7263.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0418\M7263.D\ECD2B.CH  
 Acq On : 10-26-2014 05:08:44 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:13:56 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.40  | 3503800   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22  | 8118012m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52  | 16568807m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.80  | 37993668  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.41  | 1437727   | 0.04052 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 101.30% |
| 11) s C16(152)                     | 20.49  | 1921394   | 0.04036 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 100.50% |
| 27) s C13(34) #2                   | 16.48  | 7136057m  | 0.04083 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 102.07% |
| 34) s C16(152) #2                  | 23.59  | 7696122m  | 0.04015 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 99.98%  |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 868947    | 0.04011 | ng      |
| 3) C13(18)                         | 12.13  | 1058864   | 0.03887 | ng      |
| 5) C13(28)                         | 14.21  | 2025344   | 0.04271 | ng      |
| 6) C14(52)                         | 15.84  | 1466882   | 0.04017 | ng      |
| 7) C14(44)                         | 16.71  | 1991986m  | 0.04165 | ng      |
| 8) C14(66)                         | 18.61  | 2306786   | 0.04275 | ng      |
| 9) C15(101)                        | 19.74  | 1952929m  | 0.03627 | ng      |
| 12) C15(118)                       | 22.40  | 2400500   | 0.04026 | ng      |
| 13) C16(153)                       | 23.44  | 2108293m  | 0.03717 | ng      |
| 14) C15(105)                       | 23.46  | 2968388m  | 0.04083 | ng      |
| 15) C16(138)                       | 24.55  | 2925235   | 0.04020 | ng      |
| 16) C17(187)                       | 25.30  | 2552168   | 0.04012 | ng      |
| 17) C16(128)                       | 25.64  | 2638684m  | 0.03747 | ng      |
| 18) C17(180)                       | 27.17  | 2968602   | 0.03964 | ng      |
| 19) C17(170)                       | 27.97  | 3373831   | 0.03984 | ng      |
| 20) C18(195)                       | 29.05  | 3149817m  | 0.03966 | ng      |
| 21) C19(206)                       | 30.31  | 2922276m  | 0.03812 | ng      |
| 22) C110(209)                      | 30.91  | 2339888m  | 0.03732 | ng      |
| 25) C12(8) #2                      | 13.11  | 4561872m  | 0.04129 | ng      |
| 26) C13(18) #2                     | 15.00  | 5156064m  | 0.03985 | ng      |
| 28) C13(28) #2                     | 17.77  | 9988715m  | 0.04205 | ng      |
| 29) C14(52) #2                     | 19.15  | 6002326m  | 0.04244 | ng      |
| 30) C14(44) #2                     | 19.98  | 9163315m  | 0.03739 | ng      |
| 31) C14(66) #2                     | 22.37  | 11500561  | 0.04287 | ng      |
| 32) C15(101) #2                    | 23.62  | 5974779m  | 0.03915 | ng      |
| 35) C15(118) #2                    | 26.36  | 8987133m  | 0.03668 | ng      |
| 36) C16(153) #2                    | 26.94  | 10071213  | 0.03936 | ng      |
| 37) C15(105) #2                    | 27.21  | 13745795  | 0.04009 | ng      |
| 38) C16(138) #2                    | 27.79  | 9074995m  | 0.03919 | ng      |
| 39) C17(187) #2                    | 28.15  | 10325191  | 0.03997 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7263.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0418\M7263.D\ECD2B.CH  
 Acq On : 10-26-2014 05:08:44 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:13:56 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.55 | 14435696  | 0.03995 | ng    |
| 41) | C17(180) #2  | 29.59 | 12778433  | 0.03956 | ng    |
| 42) | C17(170) #2  | 30.22 | 13677854  | 0.03891 | ng    |
| 43) | C18(195) #2  | 31.09 | 12462122m | 0.03869 | ng    |
| 44) | C19(206) #2  | 32.19 | 11224530m | 0.03868 | ng    |
| 45) | C110(209) #2 | 32.63 | 8924903m  | 0.03940 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0418\M7274.D\ECD2B.CH  
 Acq On : 10-27-2014 01:18:57 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:00 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |
|-----------------------------|--------|-----------|---------|---------|
| Internal Standards          |        |           |         |         |
| 1) I C15(96)                | 17.39  | 3362143m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.22  | 7429783   | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52  | 18505949m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79  | 45692334m | 0.10000 | ng      |
| System Monitoring Compounds |        |           |         |         |
| 4) s C13(34)                | 13.40  | 2491417   | 0.07969 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 99.61%  |
| 11) s C16(152)              | 20.48  | 3290632   | 0.07994 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 99.53%  |
| 27) s C13(34) #2            | 16.48  | 14449670  | 0.07924 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 99.05%  |
| 34) s C16(152) #2           | 23.58  | 18064587m | 0.08088 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 100.70% |
| Target Compounds            |        |           |         |         |
| 2) C12(8)                   | 10.21  | 1506346   | 0.07882 | ng      |
| 3) C13(18)                  | 12.13  | 1834874   | 0.07733 | ng      |
| 5) C13(28)                  | 14.21  | 3512519   | 0.08168 | ng      |
| 6) C14(52)                  | 15.84  | 2496428   | 0.07876 | ng      |
| 7) C14(44)                  | 16.70  | 3464514   | 0.08060 | ng      |
| 8) C14(66)                  | 18.60  | 3882994   | 0.07931 | ng      |
| 9) C15(101)                 | 19.74  | 3604900m  | 0.07302 | ng      |
| 12) C15(118)                | 22.40  | 3934019   | 0.07604 | ng      |
| 13) C16(153)                | 23.44  | 3665561m  | 0.07271 | ng      |
| 14) C15(105)                | 23.46  | 4735340m  | 0.07516 | ng      |
| 15) C16(138)                | 24.54  | 4939182   | 0.07733 | ng      |
| 16) C17(187)                | 25.29  | 4344792   | 0.07789 | ng      |
| 17) C16(128)                | 25.64  | 4808789m  | 0.07680 | ng      |
| 18) C17(180)                | 27.16  | 5154531   | 0.07769 | ng      |
| 19) C17(170)                | 27.96  | 5875809   | 0.07806 | ng      |
| 20) C18(195)                | 29.04  | 5610737   | 0.07936 | ng      |
| 21) C19(206)                | 30.31  | 5298349m  | 0.07757 | ng      |
| 22) C110(209)               | 30.90  | 4237055   | 0.07636 | ng      |
| 25) C12(8) #2               | 13.11  | 8893245   | 0.07632 | ng      |
| 26) C13(18) #2              | 15.00  | 9741092m  | 0.07320 | ng      |
| 28) C13(28) #2              | 17.77  | 19864430  | 0.07834 | ng      |
| 29) C14(52) #2              | 19.15  | 11820115  | 0.07927 | ng      |
| 30) C14(44) #2              | 19.97  | 21307258m | 0.08243 | ng      |
| 31) C14(66) #2              | 22.36  | 23651514  | 0.08252 | ng      |
| 32) C15(101) #2             | 23.61  | 14030001m | 0.08514 | ng      |
| 35) C15(118) #2             | 26.35  | 20609489m | 0.07367 | ng      |
| 36) C16(153) #2             | 26.94  | 21761396  | 0.07380 | ng      |
| 37) C15(105) #2             | 27.21  | 31342488  | 0.07693 | ng      |
| 38) C16(138) #2             | 27.79  | 23196299m | 0.08260 | ng      |
| 39) C17(187) #2             | 28.14  | 23655515  | 0.07797 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0418\M7274.D\ECD2B.CH  
 Acq On : 10-27-2014 01:18:57 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:00 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 34154961  | 0.07973 | ng    |
| 41) | C17(180) #2  | 29.59 | 32762203  | 0.08514 | ng    |
| 42) | C17(170) #2  | 30.22 | 36211341m | 0.08610 | ng    |
| 43) | C18(195) #2  | 31.09 | 35032590m | 0.09044 | ng    |
| 44) | C19(206) #2  | 32.18 | 33515264m | 0.09579 | ng    |
| 45) | C110(209) #2 | 32.62 | 25950761m | 0.09600 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274K.D\ECD1A.CH Vial: 53  
 Signal #2 : I:\M\DATA\SM0418\M7274K.D\ECD2B.CH  
 Acq On : 10-27-2014 09:31:18 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.39  | 3216545m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21  | 7289019m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52  | 16037807m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79  | 38634922  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.40  | 1377315   | 0.04257 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 106.43% |
| 11) s C16(152)                     | 20.48  | 1845541   | 0.04348 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 108.27% |
| 27) s C13(34) #2                   | 16.48  | 6777755m  | 0.03997 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 99.92%  |
| 34) s C16(152) #2                  | 23.58  | 7897236m  | 0.04055 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 100.97% |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 818081    | 0.04129 | ng      |
| 3) C13(18)                         | 12.13  | 1027546   | 0.04149 | ng      |
| 5) C13(28)                         | 14.21  | 1823428m  | 0.04180 | ng      |
| 6) C14(52)                         | 15.84  | 1412044   | 0.04252 | ng      |
| 7) C14(44)                         | 16.70  | 1821850m  | 0.04148 | ng      |
| 8) C14(66)                         | 18.60  | 2048135m  | 0.04120 | ng      |
| 9) C15(101)                        | 19.73  | 1843896m  | 0.03737 | ng      |
| 12) C15(118)                       | 22.39  | 2303186   | 0.04330 | ng      |
| 13) C16(153)                       | 23.43  | 1968039m  | 0.03871 | ng      |
| 14) C15(105)                       | 23.45  | 2798347m  | 0.04307 | ng      |
| 15) C16(138)                       | 24.54  | 2608199m  | 0.03990 | ng      |
| 16) C17(187)                       | 25.29  | 2300789m  | 0.04029 | ng      |
| 17) C16(128)                       | 25.63  | 2585873m  | 0.04103 | ng      |
| 18) C17(180)                       | 27.16  | 2678237m  | 0.03984 | ng      |
| 19) C17(170)                       | 27.96  | 3032793m  | 0.03989 | ng      |
| 20) C18(195)                       | 29.04  | 2896293m  | 0.04066 | ng      |
| 21) C19(206)                       | 30.31  | 2779662m  | 0.04049 | ng      |
| 22) C110(209)                      | 30.90  | 2241946m  | 0.03996 | ng      |
| 25) C12(8) #2                      | 13.11  | 4300554m  | 0.04010 | ng      |
| 26) C13(18) #2                     | 15.00  | 5344727m  | 0.04318 | ng      |
| 28) C13(28) #2                     | 17.76  | 9298975m  | 0.04032 | ng      |
| 29) C14(52) #2                     | 19.15  | 5612493m  | 0.04085 | ng      |
| 30) C14(44) #2                     | 19.97  | 9398637m  | 0.03979 | ng      |
| 31) C14(66) #2                     | 22.36  | 10911353m | 0.04195 | ng      |
| 32) C15(101) #2                    | 23.62  | 5939590m  | 0.04031 | ng      |
| 35) C15(118) #2                    | 26.35  | 9522296m  | 0.03838 | ng      |
| 36) C16(153) #2                    | 26.94  | 10452037  | 0.04026 | ng      |
| 37) C15(105) #2                    | 27.20  | 14224543  | 0.04082 | ng      |
| 38) C16(138) #2                    | 27.78  | 9751293m  | 0.04142 | ng      |
| 39) C17(187) #2                    | 28.14  | 11046565  | 0.04218 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274K.D\ECD1A.CH Vial: 53  
 Signal #2 : I:\M\DATA\SM0418\M7274K.D\ECD2B.CH  
 Acq On : 10-27-2014 09:31:18 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:13:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 15543234  | 0.04239 | ng    |
| 41) | C17(180) #2  | 29.59 | 13467680m | 0.04105 | ng    |
| 42) | C17(170) #2  | 30.22 | 14827824m | 0.04155 | ng    |
| 43) | C18(195) #2  | 31.09 | 13791431m | 0.04217 | ng    |
| 44) | C19(206) #2  | 32.18 | 12718289m | 0.04316 | ng    |
| 45) | C110(209) #2 | 32.62 | 9925761m  | 0.04320 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274K.D MM0417B.M Tue Nov 18 09:46:56 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7285.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0418\M7285.D\ECD2B.CH  
 Acq On : 10-27-2014 05:41:11 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |
|-----------------------------|--------|-----------|---------|---------|
| Internal Standards          |        |           |         |         |
| 1) I C15(96)                | 17.39  | 3560529m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.21  | 8056736m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52  | 19063819m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79  | 46796149  | 0.10000 | ng      |
| System Monitoring Compounds |        |           |         |         |
| 4) s C13(34)                | 13.40  | 1419323   | 0.03918 | ng      |
| Spiked Amount               | 0.0400 | Recovery  | =       | 97.95%  |
| 11) s C16(152)              | 20.48  | 2001772   | 0.04259 | ng      |
| Spiked Amount               | 0.0402 | Recovery  | =       | 106.05% |
| 27) s C13(34) #2            | 16.48  | 7900269m  | 0.03910 | ng      |
| Spiked Amount               | 0.0400 | Recovery  | =       | 97.75%  |
| 34) s C16(152) #2           | 23.58  | 9194485m  | 0.03884 | ng      |
| Spiked Amount               | 0.0402 | Recovery  | =       | 96.71%  |
| Target Compounds            |        |           |         |         |
| 2) C12(8)                   | 10.21  | 848652    | 0.03832 | ng      |
| 3) C13(18)                  | 12.13  | 1077485   | 0.03893 | ng      |
| 5) C13(28)                  | 14.21  | 1969976   | 0.04071 | ng      |
| 6) C14(52)                  | 15.83  | 1480979   | 0.03986 | ng      |
| 7) C14(44)                  | 16.70  | 1963215m  | 0.04025 | ng      |
| 8) C14(66)                  | 18.60  | 2223034m  | 0.04032 | ng      |
| 9) C15(101)                 | 19.73  | 2080523m  | 0.03815 | ng      |
| 12) C15(118)                | 22.39  | 2388827   | 0.04038 | ng      |
| 13) C16(153)                | 23.43  | 2124222m  | 0.03776 | ng      |
| 14) C15(105)                | 23.45  | 2782361m  | 0.03834 | ng      |
| 15) C16(138)                | 24.54  | 2846476m  | 0.03935 | ng      |
| 16) C17(187)                | 25.29  | 2555082m  | 0.04050 | ng      |
| 17) C16(128)                | 25.63  | 3002704m  | 0.04319 | ng      |
| 18) C17(180)                | 27.16  | 2939767m  | 0.03955 | ng      |
| 19) C17(170)                | 27.96  | 3318038m  | 0.03946 | ng      |
| 20) C18(195)                | 29.04  | 3153410m  | 0.04002 | ng      |
| 21) C19(206)                | 30.31  | 2998194m  | 0.03947 | ng      |
| 22) C110(209)               | 30.90  | 2438628m  | 0.03929 | ng      |
| 25) C12(8) #2               | 13.11  | 4955540m  | 0.03875 | ng      |
| 26) C13(18) #2              | 15.00  | 5951195m  | 0.03999 | ng      |
| 28) C13(28) #2              | 17.76  | 10820707m | 0.03940 | ng      |
| 29) C14(52) #2              | 19.14  | 6573360m  | 0.04019 | ng      |
| 30) C14(44) #2              | 19.97  | 11547178m | 0.04123 | ng      |
| 31) C14(66) #2              | 22.36  | 12974614m | 0.04197 | ng      |
| 32) C15(101) #2             | 23.62  | 7014452m  | 0.04002 | ng      |
| 35) C15(118) #2             | 26.35  | 12112210m | 0.04050 | ng      |
| 36) C16(153) #2             | 26.94  | 12435810  | 0.03947 | ng      |
| 37) C15(105) #2             | 27.20  | 16990498  | 0.04024 | ng      |
| 38) C16(138) #2             | 27.78  | 11758001m | 0.04124 | ng      |
| 39) C17(187) #2             | 28.14  | 13077267  | 0.04117 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7285.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0418\M7285.D\ECD2B.CH  
 Acq On : 10-27-2014 05:41:11 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 18347763  | 0.04127 | ng    |
| 41) | C17(180) #2  | 29.59 | 16740597  | 0.04217 | ng    |
| 42) | C17(170) #2  | 30.22 | 17839719m | 0.04126 | ng    |
| 43) | C18(195) #2  | 31.09 | 16328600m | 0.04121 | ng    |
| 44) | C19(206) #2  | 32.18 | 14637869m | 0.04098 | ng    |
| 45) | C110(209) #2 | 32.62 | 11386551m | 0.04086 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7292.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0418\M7292.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:52 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:15 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc    | Units  |
|------------------------------------|---------|-----------|---------|--------|
| <b>Internal Standards</b>          |         |           |         |        |
| 1) I C15(96)                       | 17.39   | 3877495m  | 0.10000 | ng     |
| 10) I C16(161)                     | 23.21   | 8907856m  | 0.10000 | ng     |
| 24) I C15(96) #2                   | 20.51   | 17840261m | 0.10000 | ng     |
| 33) I C16(161) #2                  | 26.79   | 41573042  | 0.10000 | ng     |
| <b>System Monitoring Compounds</b> |         |           |         |        |
| 4) s C13(34)                       | 13.40   | 2850515   | 0.07897 | ng     |
| Spiked Amount                      | 0.0800  | Recovery  | =       | 98.71% |
| 11) s C16(152)                     | 20.48   | 3941268   | 0.07985 | ng     |
| Spiked Amount                      | 0.0803  | Recovery  | =       | 99.41% |
| 27) s C13(34) #2                   | 16.48   | 13375004m | 0.07574 | ng     |
| Spiked Amount                      | 0.0800  | Recovery  | =       | 94.67% |
| 34) s C16(152) #2                  | 23.58   | 15276568m | 0.07511 | ng     |
| Spiked Amount                      | 0.0803  | Recovery  | =       | 93.51% |
| <b>Target Compounds</b>            |         |           |         |        |
| 2) C12(8)                          | 10.21   | 1659131   | 0.07478 | ng     |
| 3) C13(18)                         | 12.12   | 2110176   | 0.07708 | ng     |
| 5) C13(28)                         | 14.21   | 4071846   | 0.08215 | ng     |
| 6) C14(52)                         | 15.83   | 2919275   | 0.08004 | ng     |
| 7) C14(44)                         | 16.70   | 3956743m  | 0.07973 | ng     |
| 8) C14(66)                         | 18.60   | 4606732   | 0.08183 | ng     |
| 9) C15(101)                        | 19.73   | 4332682m  | 0.07633 | ng     |
| 12) C15(118)                       | 22.39   | 4861115   | 0.07858 | ng     |
| 13) C16(153)                       | 23.44 T | 4516019m  | 0.07482 | ng     |
| 14) C15(105)                       | 23.44 T | 6100029m  | 0.08137 | ng     |
| 15) C16(138)                       | 24.54   | 6041296   | 0.07900 | ng     |
| 16) C17(187)                       | 25.29   | 5324085   | 0.07972 | ng     |
| 17) C16(128)                       | 25.63   | 5690499m  | 0.07576 | ng     |
| 18) C17(180)                       | 27.16   | 6251172   | 0.07863 | ng     |
| 19) C17(170)                       | 27.96   | 6898741m  | 0.07638 | ng     |
| 20) C18(195)                       | 29.04   | 6650857m  | 0.07842 | ng     |
| 21) C19(206)                       | 30.30   | 6310296m  | 0.07704 | ng     |
| 22) C110(209)                      | 30.90   | 5064503m  | 0.07611 | ng     |
| 25) C12(8) #2                      | 13.10   | 8433483m  | 0.07494 | ng     |
| 26) C13(18) #2                     | 14.99   | 10343598m | 0.08179 | ng     |
| 28) C13(28) #2                     | 17.76   | 18660001m | 0.07617 | ng     |
| 29) C14(52) #2                     | 19.15   | 10623080m | 0.07335 | ng     |
| 30) C14(44) #2                     | 19.97   | 18872195m | 0.07518 | ng     |
| 31) C14(66) #2                     | 22.36   | 22209828m | 0.08022 | ng     |
| 32) C15(101) #2                    | 23.61   | 12452627m | 0.07833 | ng     |
| 35) C15(118) #2                    | 26.35   | 20223466m | 0.07981 | ng     |
| 36) C16(153) #2                    | 26.93   | 21095796  | 0.07887 | ng     |
| 37) C15(105) #2                    | 27.20   | 29523132  | 0.07965 | ng     |
| 38) C16(138) #2                    | 27.78   | 21736878m | 0.08499 | ng     |
| 39) C17(187) #2                    | 28.14   | 22444015  | 0.08136 | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7292.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0418\M7292.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:52 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 09:14:15 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 31702128  | 0.08134 | ng    |
| 41) | C17(180) #2  | 29.58 | 27715972m | 0.07920 | ng    |
| 42) | C17(170) #2  | 30.21 | 30242255m | 0.07909 | ng    |
| 43) | C18(195) #2  | 31.09 | 27856868m | 0.07921 | ng    |
| 44) | C19(206) #2  | 32.18 | 24822090m | 0.07825 | ng    |
| 45) | C110(209) #2 | 32.62 | 19089884m | 0.07770 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7325.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0419\M7325.D\ECD2B.CH  
 Acq On : 10-29-2014 04:31:01 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:19:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc    | Units   |
|------------------------------------|---------|-----------|---------|---------|
| <b>Internal Standards</b>          |         |           |         |         |
| 1) I C15(96)                       | 17.40   | 3376347   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21   | 7434625m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51   | 17137537m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79   | 43563283m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |         |           |         |         |
| 4) s C13(34)                       | 13.40   | 1345754   | 0.03917 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 97.93%  |
| 11) s C16(152)                     | 20.48   | 1826723   | 0.04207 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 104.76% |
| 27) s C13(34) #2                   | 16.48   | 7215229m  | 0.03980 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 99.50%  |
| 34) s C16(152) #2                  | 23.58   | 8575397m  | 0.03892 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 96.91%  |
| <b>Target Compounds</b>            |         |           |         |         |
| 2) C12(8)                          | 10.21   | 838113    | 0.04015 | ng      |
| 3) C13(18)                         | 12.13   | 1066567   | 0.04095 | ng      |
| 5) C13(28)                         | 14.21   | 1895508   | 0.04136 | ng      |
| 6) C14(52)                         | 15.83   | 1399630   | 0.03970 | ng      |
| 7) C14(44)                         | 16.70   | 1896300   | 0.04109 | ng      |
| 8) C14(66)                         | 18.60   | 2142062   | 0.04104 | ng      |
| 9) C15(101)                        | 19.74   | 1990467m  | 0.03851 | ng      |
| 12) C15(118)                       | 22.39   | 2254317   | 0.04139 | ng      |
| 13) C16(153)                       | 23.44 T | 1999170m  | 0.03854 | ng      |
| 14) C15(105)                       | 23.44 T | 2610463m  | 0.03904 | ng      |
| 15) C16(138)                       | 24.54   | 2750710   | 0.04136 | ng      |
| 16) C17(187)                       | 25.29   | 2411055   | 0.04148 | ng      |
| 17) C16(128)                       | 25.64   | 2514622m  | 0.03905 | ng      |
| 18) C17(180)                       | 27.16   | 2787782   | 0.04071 | ng      |
| 19) C17(170)                       | 27.96   | 3179528   | 0.04106 | ng      |
| 20) C18(195)                       | 29.04   | 3019706   | 0.04161 | ng      |
| 21) C19(206)                       | 30.31   | 2901602m  | 0.04148 | ng      |
| 22) C110(209)                      | 30.90   | 2359878m  | 0.04131 | ng      |
| 25) C12(8) #2                      | 13.11   | 4626634m  | 0.04040 | ng      |
| 26) C13(18) #2                     | 15.00   | 5156061m  | 0.03829 | ng      |
| 28) C13(28) #2                     | 17.76   | 9904290m  | 0.04018 | ng      |
| 29) C14(52) #2                     | 19.15   | 6024882m  | 0.04106 | ng      |
| 30) C14(44) #2                     | 19.97   | 9739277m  | 0.03850 | ng      |
| 31) C14(66) #2                     | 22.36   | 11692500m | 0.04208 | ng      |
| 32) C15(101) #2                    | 23.62   | 5804172m  | 0.03655 | ng      |
| 35) C15(118) #2                    | 26.35   | 9809397m  | 0.03472 | ng      |
| 36) C16(153) #2                    | 26.94   | 11052976  | 0.03750 | ng      |
| 37) C15(105) #2                    | 27.20   | 15275388  | 0.03881 | ng      |
| 38) C16(138) #2                    | 27.78   | 10674172m | 0.04021 | ng      |
| 39) C17(187) #2                    | 28.14   | 11686461  | 0.03942 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7325.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0419\M7325.D\ECD2B.CH  
 Acq On : 10-29-2014 04:31:01 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:19:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 16625440  | 0.04013 | ng    |
| 41) | C17(180) #2  | 29.59 | 15248596m | 0.04123 | ng    |
| 42) | C17(170) #2  | 30.22 | 17092989m | 0.04250 | ng    |
| 43) | C18(195) #2  | 31.09 | 16133549m | 0.04378 | ng    |
| 44) | C19(206) #2  | 32.18 | 15533637m | 0.04679 | ng    |
| 45) | C110(209) #2 | 32.62 | 12228183m | 0.04729 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7336.D\ECD1A.CH Vial: 44  
 Signal #2 : I:\M\DATA\SM0419\M7336.D\ECD2B.CH  
 Acq On : 30 Oct 2014 12:41 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:26:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:26:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |
|-----------------------------|--------|-----------|---------|---------|
| Internal Standards          |        |           |         |         |
| 1) I C15(96)                | 17.39  | 3814908   | 0.10000 | ng      |
| 10) I C16(161)              | 23.21  | 8230646m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52  | 19242427m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79  | 44008527  | 0.10000 | ng      |
| System Monitoring Compounds |        |           |         |         |
| 4) s C13(34)                | 13.40  | 2606657m  | 0.07267 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 90.84%  |
| 11) s C16(152)              | 20.48  | 3742210   | 0.08224 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 102.39% |
| 27) s C13(34) #2            | 16.48  | 14099069m | 0.07384 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 92.30%  |
| 34) s C16(152) #2           | 23.57  | 18930694m | 0.08804 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 109.61% |
| Target Compounds            |        |           |         |         |
| 2) C12(8)                   | 10.21  | 1555540   | 0.07077 | ng      |
| 3) C13(18)                  | 12.13  | 1943275   | 0.07138 | ng      |
| 5) C13(28)                  | 14.21  | 3697391   | 0.07520 | ng      |
| 6) C14(52)                  | 15.83  | 2689271   | 0.07414 | ng      |
| 7) C14(44)                  | 16.70  | 3725498m  | 0.07592 | ng      |
| 8) C14(66)                  | 18.60  | 4179861   | 0.07483 | ng      |
| 9) C15(101)                 | 19.73  | 4057329m  | 0.07239 | ng      |
| 12) C15(118)                | 22.39  | 4338683   | 0.07567 | ng      |
| 13) C16(153)                | 23.43  | 4629615m  | 0.08346 | ng      |
| 14) C15(105)                | 23.45  | 5295835m  | 0.07595 | ng      |
| 15) C16(138)                | 24.54  | 5525434   | 0.07814 | ng      |
| 16) C17(187)                | 25.29  | 5060510   | 0.08215 | ng      |
| 17) C16(128)                | 25.63  | 4971973m  | 0.07144 | ng      |
| 18) C17(180)                | 27.16  | 5823457   | 0.07931 | ng      |
| 19) C17(170)                | 27.96  | 6536006   | 0.07840 | ng      |
| 20) C18(195)                | 29.04  | 6295524   | 0.08041 | ng      |
| 21) C19(206)                | 30.31  | 5975217m  | 0.07902 | ng      |
| 22) C110(209)               | 30.90  | 4801490m  | 0.07819 | ng      |
| 25) C12(8) #2               | 13.10  | 8931825m  | 0.07344 | ng      |
| 26) C13(18) #2              | 14.99  | 10349473m | 0.07504 | ng      |
| 28) C13(28) #2              | 17.76  | 19076474m | 0.07188 | ng      |
| 29) C14(52) #2              | 19.14  | 11075464m | 0.07064 | ng      |
| 30) C14(44) #2              | 19.97  | 20715622m | 0.07663 | ng      |
| 31) C14(66) #2              | 22.36  | 23614796m | 0.07900 | ng      |
| 32) C15(101) #2             | 23.61  | 13313423m | 0.07763 | ng      |
| 35) C15(118) #2             | 26.35  | 21959454m | 0.08199 | ng      |
| 36) C16(153) #2             | 26.94  | 21865560  | 0.07715 | ng      |
| 37) C15(105) #2             | 27.20  | 30784940  | 0.07846 | ng      |
| 38) C16(138) #2             | 27.78  | 22940882m | 0.08475 | ng      |
| 39) C17(187) #2             | 28.14  | 23565138  | 0.08068 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7336.D\ECD1A.CH Vial: 44  
 Signal #2 : I:\M\DATA\SM0419\M7336.D\ECD2B.CH  
 Acq On : 30 Oct 2014 12:41 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:26:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:26:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 33163017  | 0.08038 | ng    |
| 41) | C17(180) #2  | 29.59 | 29739308m | 0.08027 | ng    |
| 42) | C17(170) #2  | 30.21 | 32432989m | 0.08012 | ng    |
| 43) | C18(195) #2  | 31.08 | 29960349m | 0.08046 | ng    |
| 44) | C19(206) #2  | 32.18 | 26807657m | 0.07981 | ng    |
| 45) | C110(209) #2 | 32.62 | 20684890m | 0.07953 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7341.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0419\M7341.D\ECD2B.CH  
 Acq On : 10-30-2014 04:23:47 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:26:31 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:26:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.39    | 3379095   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 7495292   | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 17098743m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 42059798  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 1310636   | 0.03795 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 94.87%  |
| 11) s C16(152)                     | 20.48    | 1864503   | 0.04264 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 106.18% |
| 27) s C13(34) #2                   | 16.48    | 7172814m  | 0.03964 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 99.10%  |
| 34) s C16(152) #2                  | 23.57    | 8788810m  | 0.04154 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 103.44% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 788332    | 0.03738 | ng      |
| 3) C13(18)                         | 12.12    | 1022616   | 0.03893 | ng      |
| 5) C13(28)                         | 14.21    | 1776677m  | 0.03849 | ng      |
| 6) C14(52)                         | 15.83    | 1380313   | 0.03900 | ng      |
| 7) C14(44)                         | 16.70    | 1814414m  | 0.03908 | ng      |
| 8) C14(66)                         | 18.60    | 2069884   | 0.03948 | ng      |
| 9) C15(101)                        | 19.73    | 1961454m  | 0.03788 | ng      |
| 12) C15(118)                       | 22.39    | 2231359   | 0.04056 | ng      |
| 13) C16(153)                       | 23.44 TW | 2070545m  | 0.03964 | ng      |
| 14) C15(105)                       | 23.45 TW | 2850379m  | 0.04262 | ng      |
| 15) C16(138)                       | 24.54    | 2640177m  | 0.03923 | ng      |
| 16) C17(187)                       | 25.29    | 2374763m  | 0.04046 | ng      |
| 17) C16(128)                       | 25.63    | 2822567m  | 0.04365 | ng      |
| 18) C17(180)                       | 27.16    | 2696644m  | 0.03896 | ng      |
| 19) C17(170)                       | 27.96    | 3058267m  | 0.03908 | ng      |
| 20) C18(195)                       | 29.04    | 2916286m  | 0.03977 | ng      |
| 21) C19(206)                       | 30.31    | 2774148m  | 0.03925 | ng      |
| 22) C110(209)                      | 30.90    | 2268667m  | 0.03929 | ng      |
| 25) C12(8) #2                      | 13.10    | 4519222m  | 0.03946 | ng      |
| 26) C13(18) #2                     | 14.99    | 4969704m  | 0.03676 | ng      |
| 28) C13(28) #2                     | 17.76    | 9356238m  | 0.03787 | ng      |
| 29) C14(52) #2                     | 19.14    | 6186389m  | 0.04238 | ng      |
| 30) C14(44) #2                     | 19.97    | 10114141m | 0.04020 | ng      |
| 31) C14(66) #2                     | 22.36    | 11635943m | 0.04196 | ng      |
| 32) C15(101) #2                    | 23.61    | 6807118m  | 0.04359 | ng      |
| 35) C15(118) #2                    | 26.35    | 10600571m | 0.03934 | ng      |
| 36) C16(153) #2                    | 26.94    | 11157096  | 0.03939 | ng      |
| 37) C15(105) #2                    | 27.20    | 15174546  | 0.03997 | ng      |
| 38) C16(138) #2                    | 27.78    | 9503588m  | 0.03706 | ng      |
| 39) C17(187) #2                    | 28.14    | 11724266  | 0.04106 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0419\M7341.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0419\M7341.D\ECD2B.CH  
 Acq On : 10-30-2014 04:23:47 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:26:31 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:26:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 16345708  | 0.04090 | ng    |
| 41) | C17(180) #2  | 29.58 | 14686846  | 0.04113 | ng    |
| 42) | C17(170) #2  | 30.22 | 15775092  | 0.04058 | ng    |
| 43) | C18(195) #2  | 31.09 | 14503738m | 0.04071 | ng    |
| 44) | C19(206) #2  | 32.18 | 13122132m | 0.04088 | ng    |
| 45) | C110(209) #2 | 32.62 | 10288595m | 0.04108 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7364.D\ECD1A.CH Vial: 1  
 Signal #2 : I:\M\DATA\SM0420\M7364.D\ECD2B.CH  
 Acq On : 31 Oct 2014 10:49 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:16 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc    | Units   |
|------------------------------------|---------|-----------|---------|---------|
| <b>Internal Standards</b>          |         |           |         |         |
| 1) I C15(96)                       | 17.42   | 2938384m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22   | 7017547m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52   | 13978204m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79   | 33572612  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |         |           |         |         |
| 4) s C13(34)                       | 13.43   | 1150466m  | 0.03836 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 95.90%  |
| 11) s C16(152)                     | 20.49   | 1725936m  | 0.04211 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 104.86% |
| 27) s C13(34) #2                   | 16.49   | 6002691m  | 0.04070 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 101.75% |
| 34) s C16(152) #2                  | 23.57   | 6963603m  | 0.04121 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 102.61% |
| <b>Target Compounds</b>            |         |           |         |         |
| 2) C12(8)                          | 10.26   | 690445m   | 0.03769 | ng      |
| 3) C13(18)                         | 12.17   | 923480m   | 0.04070 | ng      |
| 5) C13(28)                         | 14.24   | 1592254m  | 0.03979 | ng      |
| 6) C14(52)                         | 15.86   | 1187762m  | 0.03851 | ng      |
| 7) C14(44)                         | 16.72   | 1664970m  | 0.04149 | ng      |
| 8) C14(66)                         | 18.61   | 1774169m  | 0.03885 | ng      |
| 9) C15(101)                        | 19.75   | 1940861m  | 0.04350 | ng      |
| 12) C15(118)                       | 22.40   | 1882229m  | 0.03614 | ng      |
| 13) C16(153)                       | 23.46 T | 1997251m  | 0.04090 | ng      |
| 14) C15(105)                       | 23.46 T | 2565161m  | 0.04081 | ng      |
| 15) C16(138)                       | 24.55   | 2462070m  | 0.03906 | ng      |
| 16) C17(187)                       | 25.30   | 2240405m  | 0.04079 | ng      |
| 17) C16(128)                       | 25.65   | 2624454m  | 0.04334 | ng      |
| 18) C17(180)                       | 27.16   | 2655123m  | 0.04110 | ng      |
| 19) C17(170)                       | 27.96   | 3043713m  | 0.04167 | ng      |
| 20) C18(195)                       | 29.04   | 2925583m  | 0.04276 | ng      |
| 21) C19(206)                       | 30.31   | 2865172m  | 0.04348 | ng      |
| 22) C110(209)                      | 30.90   | 2362800m  | 0.04395 | ng      |
| 25) C12(8) #2                      | 13.13   | 3766266m  | 0.04031 | ng      |
| 26) C13(18) #2                     | 15.01   | 4422827m  | 0.04063 | ng      |
| 28) C13(28) #2                     | 17.78   | 7449555m  | 0.03681 | ng      |
| 29) C14(52) #2                     | 19.15   | 4642654m  | 0.03856 | ng      |
| 30) C14(44) #2                     | 19.98   | 7815934m  | 0.03783 | ng      |
| 31) C14(66) #2                     | 22.36   | 9027810m  | 0.03967 | ng      |
| 32) C15(101) #2                    | 23.62   | 4827034m  | 0.03734 | ng      |
| 35) C15(118) #2                    | 26.35   | 8152562m  | 0.03776 | ng      |
| 36) C16(153) #2                    | 26.94   | 8497879m  | 0.03741 | ng      |
| 37) C15(105) #2                    | 27.20   | 11501935m | 0.03788 | ng      |
| 38) C16(138) #2                    | 27.78   | 8642543m  | 0.04225 | ng      |
| 39) C17(187) #2                    | 28.14   | 9336966   | 0.04096 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7364.D\ECD1A.CH Vial: 1  
 Signal #2 : I:\M\DATA\SM0420\M7364.D\ECD2B.CH  
 Acq On : 31 Oct 2014 10:49 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:16 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 12649258m | 0.03960 | ng    |
| 41) | C17(180) #2  | 29.59 | 11559753m | 0.04054 | ng    |
| 42) | C17(170) #2  | 30.22 | 12670340m | 0.04084 | ng    |
| 43) | C18(195) #2  | 31.09 | 11947459m | 0.04204 | ng    |
| 44) | C19(206) #2  | 32.18 | 11146881m | 0.04354 | ng    |
| 45) | C110(209) #2 | 32.62 | 8887747m  | 0.04454 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:30 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Oct 31 15:57:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.39  | 2882190   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.20  | 5960128m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51  | 14899100m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79  | 33015851  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.40  | 2056445   | 0.07633 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 95.41%  |
| 11) s C16(152)                     | 20.48  | 2750113   | 0.08356 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 104.03% |
| 27) s C13(34) #2                   | 16.47  | 11688255m | 0.07965 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 99.56%  |
| 34) s C16(152) #2                  | 23.57  | 12602325m | 0.07806 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 97.19%  |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 1313763   | 0.08039 | ng      |
| 3) C13(18)                         | 12.12  | 1652169   | 0.08189 | ng      |
| 5) C13(28)                         | 14.21  | 2904281   | 0.07849 | ng      |
| 6) C14(52)                         | 15.83  | 2118533   | 0.07784 | ng      |
| 7) C14(44)                         | 16.70  | 2837896m  | 0.07662 | ng      |
| 8) C14(66)                         | 18.60  | 3250928   | 0.07726 | ng      |
| 9) C15(101)                        | 19.73  | 3200364m  | 0.07582 | ng      |
| 12) C15(118)                       | 22.39  | 3391627   | 0.08224 | ng      |
| 13) C16(153)                       | 23.43  | 3136821m  | 0.07782 | ng      |
| 14) C15(105)                       | 23.45  | 3993803m  | 0.07944 | ng      |
| 15) C16(138)                       | 24.54  | 4140770   | 0.08105 | ng      |
| 16) C17(187)                       | 25.29  | 3591602   | 0.08042 | ng      |
| 17) C16(128)                       | 25.63  | 3791086m  | 0.07541 | ng      |
| 18) C17(180)                       | 27.16  | 4224797   | 0.07946 | ng      |
| 19) C17(170)                       | 27.96  | 4807838   | 0.07969 | ng      |
| 20) C18(195)                       | 29.04  | 4523241m  | 0.07976 | ng      |
| 21) C19(206)                       | 30.30  | 4290405m  | 0.07833 | ng      |
| 22) C110(209)                      | 30.90  | 3483568m  | 0.07835 | ng      |
| 25) C12(8) #2                      | 13.10  | 7453781m  | 0.07981 | ng      |
| 26) C13(18) #2                     | 14.99  | 8491714m  | 0.08020 | ng      |
| 28) C13(28) #2                     | 17.76  | 16085402m | 0.07883 | ng      |
| 29) C14(52) #2                     | 19.14  | 9131714m  | 0.07573 | ng      |
| 30) C14(44) #2                     | 19.96  | 18044522m | 0.08710 | ng      |
| 31) C14(66) #2                     | 22.35  | 17928017m | 0.07734 | ng      |
| 32) C15(101) #2                    | 23.61  | 10362311m | 0.07804 | ng      |
| 35) C15(118) #2                    | 26.35  | 15321189m | 0.07593 | ng      |
| 36) C16(153) #2                    | 26.93  | 16841670  | 0.07930 | ng      |
| 37) C15(105) #2                    | 27.20  | 23616805  | 0.08023 | ng      |
| 38) C16(138) #2                    | 27.78  | 14986894m | 0.07407 | ng      |
| 39) C17(187) #2                    | 28.14  | 17802516  | 0.08126 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:30 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Oct 31 15:57:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 25204649  | 0.08143 | ng    |
| 41) | C17(180) #2  | 29.58 | 22564111  | 0.08118 | ng    |
| 42) | C17(170) #2  | 30.21 | 24017802m | 0.07910 | ng    |
| 43) | C18(195) #2  | 31.08 | 21971277m | 0.07868 | ng    |
| 44) | C19(206) #2  | 32.18 | 19513386m | 0.07747 | ng    |
| 45) | C110(209) #2 | 32.62 | 15219381m | 0.07800 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7603.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0424\M7603.D\ECD2B.CH  
 Acq On : 11-15-2014 09:03:03 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:21:53 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.39    | 3483421   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 7849561m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51    | 19118951m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 46749872  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 1372584   | 0.03865 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 96.63%  |
| 11) s C16(152)                     | 20.48    | 1923497   | 0.04194 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 104.43% |
| 27) s C13(34) #2                   | 16.47    | 7880853m  | 0.03886 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 97.15%  |
| 34) s C16(152) #2                  | 23.57    | 9388134m  | 0.03978 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 99.05%  |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 829981    | 0.03830 | ng      |
| 3) C13(18)                         | 12.12    | 1042862   | 0.03844 | ng      |
| 5) C13(28)                         | 14.21    | 1877061   | 0.03954 | ng      |
| 6) C14(52)                         | 15.83    | 1407349   | 0.03849 | ng      |
| 7) C14(44)                         | 16.70    | 1906801m  | 0.03993 | ng      |
| 8) C14(66)                         | 18.60    | 2056583   | 0.03790 | ng      |
| 9) C15(101)                        | 19.73    | 2133770m  | 0.04013 | ng      |
| 12) C15(118)                       | 22.39    | 2155199   | 0.03709 | ng      |
| 13) C16(153)                       | 23.44 TW | 2107012m  | 0.03847 | ng      |
| 14) C15(105)                       | 23.45 TW | 2918654m  | 0.04158 | ng      |
| 15) C16(138)                       | 24.53    | 2727745m  | 0.03866 | ng      |
| 16) C17(187)                       | 25.28    | 2463440m  | 0.04004 | ng      |
| 17) C16(128)                       | 25.63    | 2553054m  | 0.03749 | ng      |
| 18) C17(180)                       | 27.15    | 2841591m  | 0.03922 | ng      |
| 19) C17(170)                       | 27.96    | 3192880m  | 0.03895 | ng      |
| 20) C18(195)                       | 29.04    | 3085498m  | 0.04020 | ng      |
| 21) C19(206)                       | 30.30    | 2949327   | 0.03987 | ng      |
| 22) C110(209)                      | 30.90    | 2432228m  | 0.04027 | ng      |
| 25) C12(8) #2                      | 13.10    | 4828193m  | 0.03753 | ng      |
| 26) C13(18) #2                     | 14.99    | 5411555m  | 0.03562 | ng      |
| 28) C13(28) #2                     | 17.76    | 10309258m | 0.03728 | ng      |
| 29) C14(52) #2                     | 19.14    | 6212451m  | 0.03764 | ng      |
| 30) C14(44) #2                     | 19.96    | 11494650m | 0.04091 | ng      |
| 31) C14(66) #2                     | 22.35    | 12490543m | 0.04016 | ng      |
| 32) C15(101) #2                    | 23.61    | 7564836m  | 0.04330 | ng      |
| 35) C15(118) #2                    | 26.35    | 11037493m | 0.03660 | ng      |
| 36) C16(153) #2                    | 26.93    | 12307201  | 0.03906 | ng      |
| 37) C15(105) #2                    | 27.20    | 15901075m | 0.03760 | ng      |
| 38) C16(138) #2                    | 27.78    | 12073716m | 0.04239 | ng      |
| 39) C17(187) #2                    | 28.13    | 12942281m | 0.04076 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7603.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0424\M7603.D\ECD2B.CH  
 Acq On : 11-15-2014 09:03:03 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:21:53 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 17735825m | 0.03988 | ng    |
| 41) | C17(180) #2  | 29.58 | 16304884m | 0.04108 | ng    |
| 42) | C17(170) #2  | 30.21 | 17724615m | 0.04103 | ng    |
| 43) | C18(195) #2  | 31.08 | 16595913m | 0.04193 | ng    |
| 44) | C19(206) #2  | 32.18 | 15120739m | 0.04240 | ng    |
| 45) | C110(209) #2 | 32.62 | 11986157m | 0.04311 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7614.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0424\M7614.D\ECD2B.CH  
 Acq On : 11-15-2014 05:12:34 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:22:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.39    | 3364116m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 7233456m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51    | 20391286m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.78    | 47356837m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 2329773m  | 0.07379 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 92.24%  |
| 11) s C16(152)                     | 20.48    | 3286783   | 0.08219 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 102.33% |
| 27) s C13(34) #2                   | 16.47    | 14761623m | 0.07285 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 91.06%  |
| 34) s C16(152) #2                  | 23.57    | 20483551m | 0.08852 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 110.21% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 1400600   | 0.07247 | ng      |
| 3) C13(18)                         | 12.12    | 1732812   | 0.07231 | ng      |
| 5) C13(28)                         | 14.20    | 3241849m  | 0.07473 | ng      |
| 6) C14(52)                         | 15.83    | 2346199m  | 0.07322 | ng      |
| 7) C14(44)                         | 16.70    | 3278573m  | 0.07575 | ng      |
| 8) C14(66)                         | 18.59    | 3548384m  | 0.07176 | ng      |
| 9) C15(101)                        | 19.73    | 3825441m  | 0.07778 | ng      |
| 12) C15(118)                       | 22.39    | 3614545m  | 0.07140 | ng      |
| 13) C16(153)                       | 23.44 TW | 3714686m  | 0.07584 | ng      |
| 14) C15(105)                       | 23.45 TW | 4561569m  | 0.07429 | ng      |
| 15) C16(138)                       | 24.53    | 4749981m  | 0.07633 | ng      |
| 16) C17(187)                       | 25.28    | 4239841m  | 0.07808 | ng      |
| 17) C16(128)                       | 25.63    | 4881778m  | 0.08026 | ng      |
| 18) C17(180)                       | 27.15    | 5060963m  | 0.07838 | ng      |
| 19) C17(170)                       | 27.96    | 5712496m  | 0.07795 | ng      |
| 20) C18(195)                       | 29.04    | 5532907m  | 0.08042 | ng      |
| 21) C19(206)                       | 30.30    | 5345153m  | 0.08048 | ng      |
| 22) C110(209)                      | 30.90    | 4391217m  | 0.08152 | ng      |
| 25) C12(8) #2                      | 13.10    | 9065052m  | 0.07001 | ng      |
| 26) C13(18) #2                     | 14.99    | 10619257m | 0.07231 | ng      |
| 28) C13(28) #2                     | 17.76    | 19723159m | 0.06999 | ng      |
| 29) C14(52) #2                     | 19.14    | 11647009m | 0.07005 | ng      |
| 30) C14(44) #2                     | 19.96    | 22938425m | 0.08037 | ng      |
| 31) C14(66) #2                     | 22.35    | 24752984m | 0.07808 | ng      |
| 32) C15(101) #2                    | 23.60    | 15630321m | 0.08609 | ng      |
| 35) C15(118) #2                    | 26.35    | 23430807m | 0.08126 | ng      |
| 36) C16(153) #2                    | 26.93    | 23156354m | 0.07587 | ng      |
| 37) C15(105) #2                    | 27.20    | 32540361m | 0.07706 | ng      |
| 38) C16(138) #2                    | 27.78    | 23378348m | 0.08038 | ng      |
| 39) C17(187) #2                    | 28.13    | 25258029m | 0.08036 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7614.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0424\M7614.D\ECD2B.CH  
 Acq On : 11-15-2014 05:12:34 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:22:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 35690151m | 0.08039 | ng    |
| 41) | C17(180) #2  | 29.58 | 33417542m | 0.08380 | ng    |
| 42) | C17(170) #2  | 30.21 | 36770625m | 0.08437 | ng    |
| 43) | C18(195) #2  | 31.08 | 34842423m | 0.08685 | ng    |
| 44) | C19(206) #2  | 32.18 | 32318906m | 0.08926 | ng    |
| 45) | C110(209) #2 | 32.62 | 25326610m | 0.09044 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2038180   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 12872032m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 102746m   | 0.00162 | ng    |
| 5) C15(101) #2     | 23.23 | 516701m   | 0.00035 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7205.D MM0417F.M Fri Dec 05 16:10:49 2014

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc    | Units |
|--------------------|-------|----------|---------|-------|
| Internal Standards |       |          |         |       |
| 1) I C15(96)       | 17.39 | 2103011  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13386960 | 0.10000 | ng    |
| Target Compounds   |       |          |         |       |
| 2) C15(101)        | 19.73 | 341674m  | 0.00915 | ng    |
| 5) C15(101) #2     | 23.22 | 3258192m | 0.02515 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7207.D MM0417F.M Fri Dec 05 16:10:55 2014

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2225995   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13612237m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 753837m   | 0.02114 | ng    |
| 5) C15(101) #2     | 23.22 | 5441576m  | 0.04378 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7208.D MM0417F.M Fri Dec 05 16:10:57 2014

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:46 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2400478   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14869473m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1636592m  | 0.04499 | ng    |
| 5) C15(101) #2     | 23.21 | 11842524m | 0.08946 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7209.D MM0417F.M Fri Dec 05 16:10:58 2014

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2523572   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15494530m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2973113m  | 0.08080 | ng    |
| 5) C15(101) #2     | 23.21 | 25660002m | 0.18179 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7210.D MM0417F.M Fri Dec 05 16:11:00 2014

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.    | Response  | Conc    | Units |
|--------------------|---------|-----------|---------|-------|
| Internal Standards |         |           |         |       |
| 1) I C15(96)       | 17.39   | 2539311m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51   | 15194166m | 0.10000 | ng    |
| Target Compounds   |         |           |         |       |
| 2) C15(101)        | 19.74   | 11042195m | 0.36809 | ng    |
| 5) C15(101) #2     | 23.22 e | 68456197m | 0.44286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7212.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:24:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:22:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |      |
|--------------------|-------|-----------|---------|-------|------|
| Internal Standards |       |           |         |       |      |
| 1) I C15(96)       | 17.39 | 2508888   | 0.10000 | ng    |      |
| 4) I C15(96) #2    | 20.51 | 13936712m | 0.10000 | ng    |      |
| Target Compounds   |       |           |         |       |      |
| 2) C15(101)        | 19.73 | 1516710m  | 0.03859 | ng    | -3.5 |
| 5) C15(101) #2     | 23.21 | 11320633m | 0.03850 | ng    | -3.8 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7213.D MM0417F.M Fri Dec 05 16:11:01 2014



Signal #1 : I:\M\DATA\SM0418\M7252.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0418\M7252.D\ECD2B.CH  
 Acq On : 10-26-2014 08:58:30 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:29:22 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:29:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 2503423   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 13786769m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2987426m  | 0.07905 | ng    |
| 5) C15(101) #2     | 23.22 | 21160386m | 0.07520 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7252.D MM0417F.M Fri Dec 05 16:13:45 2014

Signal #1 : I:\M\DATA\SM0418\M7263.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0418\M7263.D\ECD2B.CH  
 Acq On : 10-26-2014 05:08:44 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:26:29 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:24:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3503800   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16567909m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2103181m  | 0.03830 | ng    |
| 5) C15(101) #2     | 23.23 | 13459212m | 0.03850 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7263.D MM0417F.M Fri Dec 05 16:13:53 2014

Signal #1 : I:\M\DATA\SM0418\M7274.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0418\M7274.D\ECD2B.CH  
 Acq On : 10-27-2014 01:18:57 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:27:04 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:26:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3425966   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18214041m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4006931m  | 0.07740 | ng    |
| 5) C15(101) #2     | 23.22 | 26949031m | 0.07226 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274.D MM0417F.M Fri Dec 05 16:14:01 2014

Signal #1 : I:\M\DATA\SM0418\M7274K.D\ECD1A.CH Vial: 53  
 Signal #2 : I:\M\DATA\SM0418\M7274K.D\ECD2B.CH  
 Acq On : 10-27-2014 09:31:18 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:27:39 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:27:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3219252m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16073399m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 1965492m  | 0.03899 | ng    |
| 5) C15(101) #2     | 23.22 | 12949138m | 0.03818 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274K.D MM0417F.M Fri Dec 05 16:14:10 2014

Signal #1 : I:\M\DATA\SM0418\M7285.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0418\M7285.D\ECD2B.CH  
 Acq On : 10-27-2014 05:41:11 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:28:16 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3582175m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18940266m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 2187628m  | 0.03900 | ng    |
| 5) C15(101) #2     | 23.21 | 17014286m | 0.04268 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7285.D MM0417F.M Fri Dec 05 16:14:26 2014

Signal #1 : I:\M\DATA\SM0418\M7292.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0418\M7292.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:52 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:28:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3887025m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 17874408m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 4276820m  | 0.07258 | ng    |
| 5) C15(101) #2     | 23.22 | 26759500m | 0.07319 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7292.D MM0417F.M Fri Dec 05 16:14:37 2014

Signal #1 : I:\M\DATA\SM0420\M7364.D\ECD1A.CH Vial: 1  
 Signal #2 : I:\M\DATA\SM0420\M7364.D\ECD2B.CH  
 Acq On : 31 Oct 2014 10:49 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:59:58 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:39:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.42 | 2944764m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 13887062m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.75 | 2071810m  | 0.04531 | ng    |
| 5) C15(101) #2     | 23.22 | 12474969m | 0.04269 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7364.D MM0417F.M Fri Dec 05 16:18:18 2014

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:00:06 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:00:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2882190   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15017810m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 3452418m  | 0.07937 | ng    |
| 5) C15(101) #2     | 23.21 | 23647973m | 0.07734 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7366.D MM0417F.M Fri Dec 05 16:18:20 2014



Signal #1 : I:\M\DATA\SM0418\M7253.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0418\M7253.D\ECD2B.CH  
 Acq On : 10-26-2014 09:43:06 AM Operator: RR  
 Sample : CD580PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.40    | 2558363   | 100.00000 | ng     |
| 10) I C16(161)              | 23.22    | 4492702   | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.52    | 14387734m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.80    | 29611578m | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 5241878   | 270.78214 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 67.70% |
| 11) s C16(152)              | 20.49    | 7203821   | 336.86450 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 83.88% |
| 27) s C13(34) #2            | 16.48    | 35817317m | 309.51342 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 77.38% |
| 34) s C16(152) #2           | 23.63    | 47356996m | 301.29439 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 75.02% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 0.00     | 0d        | N.D.      | ng     |
| 3) C13(18)                  | 0.00     | 0d        | N.D.      | ng     |
| 5) C13(28)                  | 0.00     | 0d        | N.D.      | ng     |
| 6) C14(52)                  | 0.00     | 0d        | N.D.      | ng     |
| 7) C14(44)                  | 0.00     | 0d        | N.D.      | ng     |
| 8) C14(66)                  | 0.00     | 0d        | N.D.      | ng     |
| 9) C15(101)                 | 0.00     | 0d        | N.D.      | ng     |
| 12) C15(118)                | 0.00     | 0d        | N.D.      | ng     |
| 13) C16(153)                | 0.00     | 0d        | N.D.      | ng     |
| 14) C15(105)                | 0.00     | 0d        | N.D.      | ng     |
| 15) C16(138)                | 0.00     | 0d        | N.D.      | ng     |
| 16) C17(187)                | 0.00     | 0d        | N.D.      | ng     |
| 17) C16(128)                | 0.00     | 0d        | N.D.      | ng     |
| 18) C17(180)                | 0.00     | 0d        | N.D.      | ng     |
| 19) C17(170)                | 0.00     | 0d        | N.D.      | ng     |
| 20) C18(195)                | 0.00     | 0d        | N.D.      | ng     |
| 21) C19(206)                | 0.00     | 0d        | N.D.      | ng     |
| 22) C110(209)               | 0.00     | 0d        | N.D.      | ng     |
| 25) C12(8) #2               | 0.00     | 0d        | N.D.      | ng     |
| 26) C13(18) #2              | 0.00     | 0d        | N.D.      | ng     |
| 28) C13(28) #2              | 0.00     | 0d        | N.D.      | ng     |
| 29) C14(52) #2              | 0.00     | 0d        | N.D.      | ng     |
| 30) C14(44) #2              | 0.00     | 0d        | N.D.      | ng     |
| 31) C14(66) #2              | 0.00     | 0d        | N.D.      | ng     |
| 32) C15(101) #2             | 0.00     | 0d        | N.D.      | ng     |
| 35) C15(118) #2             | 0.00     | 0d        | N.D.      | ng     |
| 36) C16(153) #2             | 0.00     | 0d        | N.D.      | ng     |
| 37) C15(105) #2             | 0.00     | 0d        | N.D.      | ng     |
| 38) C16(138) #2             | 0.00     | 0d        | N.D.      | ng     |
| 39) C17(187) #2             | 0.00     | 0d        | N.D.      | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7253.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0418\M7253.D\ECD2B.CH  
 Acq On : 10-26-2014 09:43:06 AM Operator: RR  
 Sample : CD580PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:14:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7254.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0418\M7254.D\ECD2B.CH  
 Acq On : 26 Oct 2014 10:27 am Operator: RR  
 Sample : CD581LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:29 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |     |
|-----------------------------|----------|-----------|-----------|--------|-----|
| Internal Standards          |          |           |           |        |     |
| 1) I C15(96)                | 17.40    | 2768412   | 100.00000 | ng     |     |
| 10) I C16(161)              | 23.22    | 4746649m  | 100.00000 | ng     |     |
| 24) I C15(96) #2            | 20.52    | 13884990m | 100.00000 | ng     |     |
| 33) I C16(161) #2           | 26.80    | 27061528m | 100.00000 | ng     |     |
| System Monitoring Compounds |          |           |           |        |     |
| 4) s C13(34)                | 13.40    | 5573187   | 264.34971 | ng     | 66% |
| Spiked Amount               | 400.0000 | Recovery  | =         | 66.09% |     |
| 11) s C16(152)              | 20.49    | 7834761   | 348.98965 | ng     | 87% |
| Spiked Amount               | 401.6000 | Recovery  | =         | 86.90% |     |
| 27) s C13(34) #2            | 16.48    | 35562915m | 321.70888 | ng     | 80% |
| Spiked Amount               | 400.0000 | Recovery  | =         | 80.43% |     |
| 34) s C16(152) #2           | 23.63    | 53030437m | 359.05609 | ng     | 89% |
| Spiked Amount               | 401.6000 | Recovery  | =         | 89.41% |     |
| Target Compounds            |          |           |           |        |     |
| 2) C12(8)                   | 10.21    | 461201    | 25.18965  | ng     | 67% |
| 3) C13(18)                  | 12.13    | 653062    | 28.91309  | ng     | 77% |
| 5) C13(28)                  | 14.21    | 969867    | 24.54140  | ng     | 65% |
| 6) C14(52)                  | 15.84    | 777407    | 24.49692  | ng     | 65% |
| 7) C14(44)                  | 16.71    | 972882    | 24.16001  | ng     | 64% |
| 8) C14(66)                  | 18.60    | 1108107   | 24.53928  | ng     | 65% |
| 9) C15(101)                 | 19.74    | 1082688m  | 24.74145  | ng     | 66% |
| 12) C15(118)                | 22.40    | 1201034   | 33.87981  | ng     | 90% |
| 13) C16(153)                | 23.44    | 945573m   | 28.14509  | ng     | 75% |
| 14) C15(105)                | 23.46    | 1297126m  | 29.58958  | ng     | 79% |
| 15) C16(138)                | 24.54    | 1425646   | 33.00275  | ng     | 88% |
| 16) C17(187)                | 25.29    | 1213670m  | 32.06359  | ng     | 86% |
| 17) C16(128)                | 25.64    | 1064420m  | 25.48198  | ng     | 68% |
| 18) C17(180)                | 27.16    | 1418956   | 31.97821  | ng     | 85% |
| 19) C17(170)                | 27.96    | 1549428   | 30.85465  | ng     | 82% |
| 20) C18(195)                | 29.05    | 1494824   | 31.83120  | ng     | 85% |
| 21) C19(206)                | 30.31    | 1395213m  | 30.82466  | ng     | 82% |
| 22) C110(209)               | 30.90    | 1213729m  | 32.87490  | ng     | 88% |
| 25) C12(8) #2               | 13.11    | 2785443m  | 29.04486  | ng     | 77% |
| 26) C13(18) #2              | 15.00    | 3397736m  | 29.91032  | ng     | 80% |
| 28) C13(28) #2              | 17.77    | 5767101m  | 28.06876  | ng     | 75% |
| 29) C14(52) #2              | 19.15    | 3748562m  | 30.64064  | ng     | 82% |
| 30) C14(44) #2              | 19.97    | 6056277m  | 28.92518  | ng     | 77% |
| 31) C14(66) #2              | 22.37    | 6668785m  | 28.78628  | ng     | 77% |
| 32) C15(101) #2             | 23.67    | 3810680m  | 28.88048  | ng     | 77% |
| 35) C15(118) #2             | 26.36    | 5748540m  | 32.53654  | ng     | 87% |
| 36) C16(153) #2             | 26.94    | 6301202   | 34.08689  | ng     | 91% |
| 37) C15(105) #2             | 27.21    | 8268915   | 33.61173  | ng     | 90% |
| 38) C16(138) #2             | 27.79    | 5752258m  | 34.83907  | ng     | 93% |
| 39) C17(187) #2             | 28.15    | 6298924   | 33.87837  | ng     | 90% |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7254.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0418\M7254.D\ECD2B.CH  
 Acq On : 26 Oct 2014 10:27 am Operator: RR  
 Sample : CD581LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:29 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |     |
|-----|--------------|-------|----------|----------|-------|-----|
| 40) | C16(128) #2  | 28.55 | 8641100  | 33.29152 | ng    | 89% |
| 41) | C17(180) #2  | 29.59 | 7666133  | 33.09557 | ng    | 88% |
| 42) | C17(170) #2  | 30.22 | 7998289m | 31.74969 | ng    | 85% |
| 43) | C18(195) #2  | 31.09 | 7361668m | 31.93702 | ng    | 85% |
| 44) | C19(206) #2  | 32.19 | 6446985m | 31.04210 | ng    | 83% |
| 45) | C110(209) #2 | 32.63 | 5391372m | 33.23930 | ng    | 89% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7255.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0418\M7255.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:12 am Operator: RR  
 Sample : M8152-P(2) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:35 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.38    | 2637572m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 5230257m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.53    | 14511731m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 22817839m    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.40    | 7449306m     | 430.41335  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 113.31% |
| 11) s C16(152)                     | 20.49    | 7956236      | 300.31100  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 78.74%  |
| 27) s C13(34) #2                   | 16.48    | 42157359m    | 365.99227  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 96.35%  |
| 34) s C16(152) #2                  | 23.64    | 36177097m    | 284.07043  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 74.48%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.21    | E 12744930   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 27789623   | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 246688971  | BelowCal   | ng      |
| 6) C14(52)                         | 15.85    | E 103180490  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 40721670   | BelowCal   | ng      |
| 8) C14(66)                         | 18.66    | E 98330517m  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 52345296   | BelowCal   | ng      |
| 12) C15(118)                       | 22.40    | E 36974359   | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 63515361   | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | 7634002m     | 185.15446  | ng      |
| 15) C16(138)                       | 24.54    | E 47363737   | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 9420380      | 250.79554  | ng      |
| 17) C16(128)                       | 25.64    | 7537817      | 172.53625  | ng      |
| 18) C17(180)                       | 27.17    | 11383578     | 246.11061  | ng      |
| 19) C17(170)                       | 27.98    | 8624478m     | 159.73407  | ng      |
| 20) C18(195)                       | 29.05    | 1606724      | 29.45526   | ng      |
| 21) C19(206)                       | 30.32    | 2117149m     | 40.93605   | ng      |
| 22) C110(209)                      | 30.91    | 558052m      | 12.06042   | ng      |
| 25) C12(8) #2                      | 13.11    | E 67860031   | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 142104107  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 709691650  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 525983210  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 203592422  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.35    | E 292214636  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 235551605m | 1138.18792 | ng      |
| 35) C15(118) #2                    | 26.35    | E 213196312  | 2054.22133 | ng      |
| 36) C16(153) #2                    | 26.95    | E 237051788  | 1420.57902 | ng      |
| 37) C15(105) #2                    | 27.21    | 40214433m    | 184.10839  | ng      |
| 38) C16(138) #2                    | 27.79    | e 89526775   | 499.38873  | ng      |
| 39) C17(187) #2                    | 28.15    | 43506112     | 266.68894  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7255.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0418\M7255.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:12 am Operator: RR  
 Sample : M8152-P(2) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:35 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 39780098m | 174.00246 | ng    |
| 41) | C17(180) #2  | 29.60 | 51472454m | 243.66770 | ng    |
| 42) | C17(170) #2  | 30.23 | 38870263  | 171.82922 | ng    |
| 43) | C18(195) #2  | 31.09 | 8068293   | 39.67817  | ng    |
| 44) | C19(206) #2  | 32.19 | 7038180m  | 38.38624  | ng    |
| 45) | C110(209) #2 | 32.63 | 1901297m  | 12.41779  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7256.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0418\M7256.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:56 am Operator: RR  
 Sample : M8153-P(2) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:41 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.40    | 2481340m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.22    | 5978963m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.53    | 13546422m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.81    | 18882860m    | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 8676798m     | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.50    | 8280472      | 268.66929  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 70.45% |
| 27) s C13(34) #2                   | 16.49    | 39777272m    | 371.97868  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 97.92% |
| 34) s C16(152) #2                  | 23.64    | 35182087m    | 326.69087  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 85.66% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.21    | E 17430959   | BelowCal   | ng     |
| 3) C13(18)                         | 12.14    | E 38374301   | BelowCal   | ng     |
| 5) C13(28)                         | 14.21    | E 336552873  | BelowCal   | ng     |
| 6) C14(52)                         | 15.85    | E 151534578  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 63580097   | BelowCal   | ng     |
| 8) C14(66)                         | 18.66    | E 117932221m | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 78179870   | BelowCal   | ng     |
| 12) C15(118)                       | 22.41    | E 61451752   | BelowCal   | ng     |
| 13) C16(153)                       | 23.45    | E 92636766   | BelowCal   | ng     |
| 14) C15(105)                       | 23.49    | 11877460m    | 278.02856  | ng     |
| 15) C16(138)                       | 24.55    | E 70515985   | BelowCal   | ng     |
| 16) C17(187)                       | 25.32    | e 13599558   | 328.48233  | ng     |
| 17) C16(128)                       | 25.65    | 11115011     | 230.33421  | ng     |
| 18) C17(180)                       | 27.18    | e 15952353m  | 306.94596  | ng     |
| 19) C17(170)                       | 27.98    | 12511624m    | 205.48112  | ng     |
| 20) C18(195)                       | 29.05    | 2233789      | 36.20783   | ng     |
| 21) C19(206)                       | 30.32    | 3108766m     | 53.11001   | ng     |
| 22) C110(209)                      | 30.92    | 698703m      | 13.36026   | ng     |
| 25) C12(8) #2                      | 13.11    | E 79951753   | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 169081656  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.77    | E 827043250  | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 630813028  | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.97    | E 267866240  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.35    | E 389193643  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.46    | E 310077900m | 1447.74735 | ng     |
| 35) C15(118) #2                    | 26.35    | E 276521536  | BelowCal   | ng     |
| 36) C16(153) #2                    | 26.95    | E 286350349  | 1978.35074 | ng     |
| 37) C15(105) #2                    | 27.22    | 54613060     | 293.25580  | ng     |
| 38) C16(138) #2                    | 27.79    | e 115474023  | 712.09800  | ng     |
| 39) C17(187) #2                    | 28.15    | 55348227     | 398.45409  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7256.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0418\M7256.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:56 am Operator: RR  
 Sample : M8153-P(2) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:41 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 46725207m | 242.72173 | ng    |
| 41) | C17(180) #2  | 29.60 | 64469970m | 355.74864 | ng    |
| 42) | C17(170) #2  | 30.23 | 43894911m | 230.23494 | ng    |
| 43) | C18(195) #2  | 31.10 | 8471246m  | 50.46795  | ng    |
| 44) | C19(206) #2  | 32.19 | 8953234m  | 59.14466  | ng    |
| 45) | C110(209) #2 | 32.63 | 1980482m  | 15.99725  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7257.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0418\M7257.D\ECD2B.CH  
 Acq On : 26 Oct 2014 12:41 pm Operator: RR  
 Sample : M8154-P(2) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:47 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.39    | 2883928m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 6152753m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.53    | 12851167m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 19706908m    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.41    | 9173888m     | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.50    | 8590069      | 271.22530  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 71.12%  |
| 27) s C13(34) #2                   | 16.48    | 38409971m    | 382.23130  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 100.62% |
| 34) s C16(152) #2                  | 23.64    | 32220145m    | 291.79430  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 76.51%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.22    | E 27374068   | BelowCal   | ng      |
| 3) C13(18)                         | 12.14    | E 59784657   | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 381548193  | BelowCal   | ng      |
| 6) C14(52)                         | 15.85    | E 168722985  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 91925567   | BelowCal   | ng      |
| 8) C14(66)                         | 18.66    | E 146349071m | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 95844718   | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 80027597   | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 106244266  | BelowCal   | ng      |
| 14) C15(105)                       | 23.49    | 12105714m    | 274.22867  | ng      |
| 15) C16(138)                       | 24.55    | E 80029249   | BelowCal   | ng      |
| 16) C17(187)                       | 25.32    | e 12763096m  | 294.88160  | ng      |
| 17) C16(128)                       | 25.66    | 13036563     | 268.68579  | ng      |
| 18) C17(180)                       | 27.18    | e 19901112   | 379.75138  | ng      |
| 19) C17(170)                       | 27.98    | 15405949m    | 248.89553  | ng      |
| 20) C18(195)                       | 29.05    | 2245395      | 35.32551   | ng      |
| 21) C19(206)                       | 30.33    | 2697957m     | 44.49204   | ng      |
| 22) C110(209)                      | 30.92    | 610718m      | 11.10991   | ng      |
| 25) C12(8) #2                      | 13.11    | E 114493385  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 235914676  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 858036637  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 646930098  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 336366553  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.35    | E 427230968  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 297658267m | 1459.50724 | ng      |
| 35) C15(118) #2                    | 26.35    | E 305327878  | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.95    | E 293535838  | 1948.07032 | ng      |
| 37) C15(105) #2                    | 27.21    | 58888938m    | 302.22894  | ng      |
| 38) C16(138) #2                    | 27.79    | e 122513063  | 721.26437  | ng      |
| 39) C17(187) #2                    | 28.15    | 55420081     | 383.54835  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7257.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0418\M7257.D\ECD2B.CH  
 Acq On : 26 Oct 2014 12:41 pm Operator: RR  
 Sample : M8154-P(2) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:47 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 49595985m | 246.60856 | ng    |
| 41) | C17(180) #2  | 29.60 | 75251548m | 393.13382 | ng    |
| 42) | C17(170) #2  | 30.23 | 50394330m | 251.55259 | ng    |
| 43) | C18(195) #2  | 31.09 | 8751644m  | 49.95566  | ng    |
| 44) | C19(206) #2  | 32.19 | 7853045m  | 49.70696  | ng    |
| 45) | C110(209) #2 | 32.62 | 1403681m  | 10.40594  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7257.D MM0417B.M Tue Nov 18 09:46:12 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7258.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0418\M7258.D\ECD2B.CH  
 Acq On : 10-26-2014 01:25:50 PM Operator: RR  
 Sample : M8155-P(2) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:53 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.39    | 2476290m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 7248097m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.53    | 12441652m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.83    | 19123017m    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.41    | 8953658      | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.50    | 8880991m     | 233.03905  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 61.10%  |
| 27) s C13(34) #2                   | 16.49    | 40024402m    | 430.70733  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 113.38% |
| 34) s C16(152) #2                  | 23.64    | 32857072m    | 304.65513  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 79.88%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.22    | E 31697773   | BelowCal   | ng      |
| 3) C13(18)                         | 12.14    | E 67501913   | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 446746411  | BelowCal   | ng      |
| 6) C14(52)                         | 15.85    | E 155479149  | BelowCal   | ng      |
| 7) C14(44)                         | 16.72    | E 110673127  | BelowCal   | ng      |
| 8) C14(66)                         | 18.63    | E 191745200  | BelowCal   | ng      |
| 9) C15(101)                        | 19.74    | E 123657387  | BelowCal   | ng      |
| 12) C15(118)                       | 22.42    | E 125289468  | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 128984646  | BelowCal   | ng      |
| 14) C15(105)                       | 23.49    | e 21258165m  | BelowCal   | ng      |
| 15) C16(138)                       | 24.56    | E 97221837   | BelowCal   | ng      |
| 16) C17(187)                       | 25.32    | e 14663157   | 286.44902  | ng      |
| 17) C16(128)                       | 25.65    | e 16509521   | 293.22915  | ng      |
| 18) C17(180)                       | 27.18    | e 23771193m  | 385.68880  | ng      |
| 19) C17(170)                       | 27.98    | e 18270039m  | 250.68559  | ng      |
| 20) C18(195)                       | 29.06    | 2672994m     | 35.71683   | ng      |
| 21) C19(206)                       | 30.33    | 3310169m     | 46.41445   | ng      |
| 22) C110(209)                      | 30.92    | 786399m      | 12.29062   | ng      |
| 25) C12(8) #2                      | 13.11    | E 136533881  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 284277894  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.78    | E 1083812788 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 641503319  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 452140336  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.37    | E 637705842  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 441842159m | 1941.80519 | ng      |
| 35) C15(118) #2                    | 26.35    | E 470763463  | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.95    | E 355818851  | 2354.14944 | ng      |
| 37) C15(105) #2                    | 27.22    | e 95187682   | 478.98286  | ng      |
| 38) C16(138) #2                    | 27.79    | E 177360228  | 976.44494  | ng      |
| 39) C17(187) #2                    | 28.15    | 57303129     | 406.61262  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7258.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0418\M7258.D\ECD2B.CH  
 Acq On : 10-26-2014 01:25:50 PM Operator: RR  
 Sample : M8155-P(2) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:53 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response    | Conc      | Units |
|-----|--------------|-------|-------------|-----------|-------|
| 40) | C16(128) #2  | 28.56 | 67260696    | 336.42266 | ng    |
| 41) | C17(180) #2  | 29.60 | e 90063278m | 472.76477 | ng    |
| 42) | C17(170) #2  | 30.23 | 64055139    | 322.11359 | ng    |
| 43) | C18(195) #2  | 31.10 | 6952973m    | 40.81769  | ng    |
| 44) | C19(206) #2  | 32.19 | 8598283m    | 56.09365  | ng    |
| 45) | C110(209) #2 | 32.64 | 2153864m    | 17.28222  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7259.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0418\M7259.D\ECD2B.CH  
 Acq On : 10-26-2014 02:10:27 PM Operator: RR  
 Sample : M8167-P(2) Inst : INST. M  
 Misc : NBH14-0065 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:59 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3609297m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7247431m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.53    | 15537356m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.80    | 35992629  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8291592   | 302.73891 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 79.70% |
| 11) s C16(152)                     | 20.49    | 11909387  | 329.73751 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 86.46% |
| 27) s C13(34) #2                   | 16.48    | 43476850m | 346.24672 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 91.15% |
| 34) s C16(152) #2                  | 23.63    | 58029360m | 288.25727 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 75.58% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 269924m   | 8.42707   | ng     |
| 3) C13(18)                         | 12.13    | 655562    | 19.86955  | ng     |
| 5) C13(28)                         | 14.20    | 3291435m  | 66.81716  | ng     |
| 6) C14(52)                         | 15.84    | 2666846m  | 74.39270  | ng     |
| 7) C14(44)                         | 16.71    | 1125758m  | 19.97634  | ng     |
| 8) C14(66)                         | 18.63    | 1198756m  | 18.82516  | ng     |
| 9) C15(101)                        | 19.72    | 1958621   | 33.47729  | ng     |
| 12) C15(118)                       | 22.40    | 2026843   | 35.96225  | ng     |
| 13) C16(153)                       | 23.43    | 2188574m  | 41.33706  | ng     |
| 14) C15(105)                       | 23.46    | 589496m   | 6.53899   | ng     |
| 15) C16(138)                       | 24.53    | 1990096m  | 28.42890  | ng     |
| 16) C17(187)                       | 25.30    | 453526    | 5.60951   | ng     |
| 17) C16(128)                       | 25.63    | 368746m   | 4.93940   | ng     |
| 18) C17(180)                       | 27.16    | 458202m   | 4.88566   | ng     |
| 19) C17(170)                       | 27.97    | 341197m   | 2.79486   | ng     |
| 20) C18(195)                       | 29.04    | 73270     | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 80048m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.90    | 28728m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 1380826m  | 10.63424  | ng     |
| 26) C13(18) #2                     | 15.00    | 3595809m  | 26.54822  | ng     |
| 28) C13(28) #2                     | 17.77    | 14741060m | 65.12372  | ng     |
| 29) C14(52) #2                     | 19.15    | 13359973m | 105.06724 | ng     |
| 30) C14(44) #2                     | 19.97    | 5602948m  | 22.33233  | ng     |
| 31) C14(66) #2                     | 22.35    | 5257442m  | 18.58447  | ng     |
| 32) C15(101) #2                    | 23.66    | 8450071m  | 57.59788  | ng     |
| 35) C15(118) #2                    | 26.34    | 10031735m | 41.72606  | ng     |
| 36) C16(153) #2                    | 26.94    | 9723429m  | 38.18329  | ng     |
| 37) C15(105) #2                    | 27.21    | 2533841m  | 5.92683   | ng     |
| 38) C16(138) #2                    | 27.79    | 4595262   | 19.62528  | ng     |
| 39) C17(187) #2                    | 28.15    | 1878607   | 5.16666   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7259.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0418\M7259.D\ECD2B.CH  
 Acq On : 10-26-2014 02:10:27 PM Operator: RR  
 Sample : M8167-P(2) Inst : INST. M  
 Misc : NBH14-0065 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:02:59 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:02:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 2252449m | 4.57715  | ng    |
| 41) | C17(180) #2  | 29.59 | 1951428m | 4.57644  | ng    |
| 42) | C17(170) #2  | 30.22 | 1492492  | 2.99054  | ng    |
| 43) | C18(195) #2  | 31.09 | 241205   | BelowCal | ng    |
| 44) | C19(206) #2  | 32.19 | 141656m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.58 | 275459m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7260.D\ECD1A.CH Vial: 10  
 Acq On : 10-26-2014 02:55:00 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0065 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7260.D\ECD2B.CH Vial: 10  
 Acq On : 10-26-2014 02:54:59 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:03:05 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:02:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3127952m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 6620840   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 17019126m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.80    | 38749000  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.41    | 7599663m  | 329.73048 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 86.80% |
| 11) s C16(152)                     | 20.49    | 10373869m | 311.19175 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 81.59% |
| 27) s C13(34) #2                   | 16.48    | 46401615m | 333.51629 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 87.80% |
| 34) s C16(152) #2                  | 23.63    | 60406582m | 279.90240 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 73.39% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 261414m   | 9.89024   | ng     |
| 3) C13(18)                         | 12.13    | 655975    | 23.78610  | ng     |
| 5) C13(28)                         | 14.20    | 2443349m  | 56.39392  | ng     |
| 6) C14(52)                         | 15.84    | 2409792   | 78.09556  | ng     |
| 7) C14(44)                         | 16.71    | 1014963m  | 20.92179  | ng     |
| 8) C14(66)                         | 18.63    | 1157456m  | 21.31748  | ng     |
| 9) C15(101)                        | 19.72    | 1759041m  | 34.78299  | ng     |
| 12) C15(118)                       | 22.40    | 1728258   | 33.31904  | ng     |
| 13) C16(153)                       | 23.43    | 1951138m  | 40.29584  | ng     |
| 14) C15(105)                       | 23.47    | 486780m   | 5.67690   | ng     |
| 15) C16(138)                       | 24.54    | 1884950m  | 29.57538  | ng     |
| 16) C17(187)                       | 25.30    | 405446    | 5.43880   | ng     |
| 17) C16(128)                       | 25.63    | 376477m   | 5.59791   | ng     |
| 18) C17(180)                       | 27.17    | 430550m   | 5.07988   | ng     |
| 19) C17(170)                       | 27.97    | 325794m   | 2.99569   | ng     |
| 20) C18(195)                       | 29.05    | 58427m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 81837m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.91    | 15333m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 1466274m  | 10.22806  | ng     |
| 26) C13(18) #2                     | 15.00    | 3657933m  | 24.23673  | ng     |
| 28) C13(28) #2                     | 17.77    | 15967730m | 64.34417  | ng     |
| 29) C14(52) #2                     | 19.16    | 14140029m | 101.05969 | ng     |
| 30) C14(44) #2                     | 19.97    | 6125135m  | 22.28386  | ng     |
| 31) C14(66) #2                     | 22.35    | 5614645m  | 18.06419  | ng     |
| 32) C15(101) #2                    | 23.67    | 5932626m  | 35.83964  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7260.D\ECD1A.CH Vial: 10  
 Acq On : 10-26-2014 02:55:00 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0065 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7260.D\ECD2B.CH Vial: 10  
 Acq On : 10-26-2014 02:54:59 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:03:05 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:02:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 35) | C15(118) #2  | 26.34 | 10584792 | 40.81877 | ng    |
| 36) | C16(153) #2  | 26.95 | 10130329 | 36.82854 | ng    |
| 37) | C15(105) #2  | 27.21 | 2626230  | 5.63419  | ng    |
| 38) | C16(138) #2  | 27.79 | 5413174  | 21.54596 | ng    |
| 39) | C17(187) #2  | 28.15 | 2048576  | 5.26816  | ng    |
| 40) | C16(128) #2  | 28.55 | 2647158m | 5.18648  | ng    |
| 41) | C17(180) #2  | 29.59 | 2241765m | 5.00715  | ng    |
| 42) | C17(170) #2  | 30.22 | 1575769m | 2.90406  | ng    |
| 43) | C18(195) #2  | 31.09 | 301346   | BelowCal | ng    |
| 44) | C19(206) #2  | 32.19 | 341928   | BelowCal | ng    |
| 45) | C110(209) #2 | 32.63 | 52894m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7261.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0418\M7261.D\ECD2B.CH  
 Acq On : 10-26-2014 03:39:36 PM Operator: RR  
 Sample : M8356-P(2) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.40    | 2905499m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.23    | 4701199m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.53    | 19012656m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.81    | 21270500     | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 10273318m    | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.50    | 8225392      | 356.31361  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 93.43% |
| 27) s C13(34) #2                   | 16.49    | 49878347m    | 315.90868  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 83.16% |
| 34) s C16(152) #2                  | 23.64    | 38246508m    | 316.85652  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 83.08% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.21    | E 29709864   | BelowCal   | ng     |
| 3) C13(18)                         | 12.14    | E 84941199   | BelowCal   | ng     |
| 5) C13(28)                         | 14.21    | E 546942228  | BelowCal   | ng     |
| 6) C14(52)                         | 15.85    | E 272735159  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 91758496   | BelowCal   | ng     |
| 8) C14(66)                         | 18.66    | E 144277508m | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 91678233   | BelowCal   | ng     |
| 12) C15(118)                       | 22.40    | E 52391101m  | BelowCal   | ng     |
| 13) C16(153)                       | 23.45    | E 118350357  | BelowCal   | ng     |
| 14) C15(105)                       | 23.49    | 8870432m     | 258.56269  | ng     |
| 15) C16(138)                       | 24.55    | E 83611909   | BelowCal   | ng     |
| 16) C17(187)                       | 25.31    | e 21118015   | 851.44949  | ng     |
| 17) C16(128)                       | 25.65    | 10494758m    | 286.12631  | ng     |
| 18) C17(180)                       | 27.18    | e 21509308   | 566.05165  | ng     |
| 19) C17(170)                       | 27.98    | 15885513m    | 344.81088  | ng     |
| 20) C18(195)                       | 29.05    | 3250469      | 68.79474   | ng     |
| 21) C19(206)                       | 30.32    | 4565658m     | 101.50302  | ng     |
| 22) C110(209)                      | 30.92    | 968069m      | 24.79887   | ng     |
| 25) C12(8) #2                      | 13.11    | E 140193288  | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 372646560  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.78    | E 1395965371 | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 1213289636 | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.97    | E 420396588  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.34    | E 455421757  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.46    | E 374900035m | 1305.85404 | ng     |
| 35) C15(118) #2                    | 26.35    | E 319655788  | BelowCal   | ng     |
| 36) C16(153) #2                    | 26.95    | E 463190933  | 2683.89193 | ng     |
| 37) C15(105) #2                    | 27.22    | 50012555     | 241.84984  | ng     |
| 38) C16(138) #2                    | 27.79    | e 126491843  | 696.76333  | ng     |
| 39) C17(187) #2                    | 28.15    | e 97516616   | 596.51054  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7261.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0418\M7261.D\ECD2B.CH  
 Acq On : 10-26-2014 03:39:36 PM Operator: RR  
 Sample : M8356-P(2) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response    | Conc      | Units |
|-----|--------------|-------|-------------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 60875951m   | 278.10145 | ng    |
| 41) | C17(180) #2  | 29.60 | e 119922098 | 552.09627 | ng    |
| 42) | C17(170) #2  | 30.23 | 70699597    | 319.86368 | ng    |
| 43) | C18(195) #2  | 31.10 | 16481335m   | 86.80813  | ng    |
| 44) | C19(206) #2  | 32.19 | 18444102m   | 107.13265 | ng    |
| 45) | C110(209) #2 | 32.64 | 3807916m    | 28.25251  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7262.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0418\M7262.D\ECD2B.CH  
 Acq On : 10-26-2014 04:24:07 PM Operator: RR  
 Sample : M8357-P(2) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:17 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.42    | 2987928m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.23    | 4380345m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.53    | 16071084m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 22120995     | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.41    | 12147299     | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.50    | 8153296m     | 385.25916  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 101.02% |
| 27) s C13(34) #2                   | 16.49    | 52889218m    | 448.13639  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 117.97% |
| 34) s C16(152) #2                  | 23.64    | 37660099m    | 302.23568  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 79.25%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.22    | E 90262125   | BelowCal   | ng      |
| 3) C13(18)                         | 12.14    | E 218916780  | BelowCal   | ng      |
| 5) C13(28)                         | 14.22    | E 666524053  | BelowCal   | ng      |
| 6) C14(52)                         | 15.86    | E 558269347  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 189093330  | BelowCal   | ng      |
| 8) C14(66)                         | 18.61    | E 39885818m  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 112394798  | BelowCal   | ng      |
| 12) C15(118)                       | 22.34    | E 265976186  | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 132111215m | BelowCal   | ng      |
| 14) C15(105)                       | 23.50    | 3637801m     | 95.84931   | ng      |
| 15) C16(138)                       | 24.54    | E 93579867   | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | E 30078275   | BelowCal   | ng      |
| 17) C16(128)                       | 25.64    | 5206029m     | 139.54145  | ng      |
| 18) C17(180)                       | 27.18    | e 18290189   | 508.17989  | ng      |
| 19) C17(170)                       | 27.98    | 13054911m    | 300.48337  | ng      |
| 20) C18(195)                       | 29.05    | 3486983m     | 79.62505   | ng      |
| 21) C19(206)                       | 30.32    | 5395641m     | 129.97989  | ng      |
| 22) C110(209)                      | 30.91    | 1197599m     | 33.52492   | ng      |
| 25) C12(8) #2                      | 13.11    | E 367346981  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.01    | E 834602064  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.78    | E 1564164850 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.17    | E 2184286958 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 761810746  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.33    | E 684065062  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 468638796m | 1705.15286 | ng      |
| 35) C15(118) #2                    | 26.35    | E 300315913  | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.95    | E 516734367  | 2843.41295 | ng      |
| 37) C15(105) #2                    | 27.21    | 18904126m    | 90.98903   | ng      |
| 38) C16(138) #2                    | 27.85    | E 287925982m | 1247.52585 | ng      |
| 39) C17(187) #2                    | 28.15    | e 122178886  | 702.25018  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7262.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0418\M7262.D\ECD2B.CH  
 Acq On : 10-26-2014 04:24:07 PM Operator: RR  
 Sample : M8357-P(2) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:17 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response   | Conc      | Units |
|-----|--------------|-------|------------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 24559789m  | 112.20503 | ng    |
| 41) | C17(180) #2  | 29.60 | e 88594860 | 410.10199 | ng    |
| 42) | C17(170) #2  | 30.23 | 44675991   | 201.83474 | ng    |
| 43) | C18(195) #2  | 31.09 | 15002266m  | 76.15125  | ng    |
| 44) | C19(206) #2  | 32.19 | 22343822   | 124.18155 | ng    |
| 45) | C110(209) #2 | 32.63 | 4488723m   | 32.18400  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7264.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0418\M7264.D\ECD2B.CH  
 Acq On : 10-26-2014 05:53:15 PM Operator: RR  
 Sample : M8360-P(2) Inst : INST. M  
 Misc : NBH14-0220 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:22 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.39    | 2370713m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 4556617m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 12106572m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 23766636m    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.41    | 7809480      | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.50    | 8494654      | 386.02839  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 101.22% |
| 27) s C13(34) #2                   | 16.48    | 38223376m    | 417.31771  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 109.86% |
| 34) s C16(152) #2                  | 23.64    | 37913430m    | 285.59867  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 74.88%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.21    | e 5968280    | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 13257083   | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 131611630  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 57804900   | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 27066987   | BelowCal   | ng      |
| 8) C14(66)                         | 18.64    | E 58264709   | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 43951536   | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 50481822   | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 62979610   | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | 8187847m     | 241.88881  | ng      |
| 15) C16(138)                       | 24.55    | E 49627914   | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 6678253m     | 199.12575  | ng      |
| 17) C16(128)                       | 25.64    | 8994235m     | 247.03801  | ng      |
| 18) C17(180)                       | 27.17    | 10673079m    | 266.40431  | ng      |
| 19) C17(170)                       | 27.98    | 8276588m     | 176.87170  | ng      |
| 20) C18(195)                       | 29.05    | 1485428      | 31.36444   | ng      |
| 21) C19(206)                       | 30.32    | 1675045m     | 37.02045   | ng      |
| 22) C110(209)                      | 30.91    | 473672m      | 11.70962   | ng      |
| 25) C12(8) #2                      | 13.11    | e 30723161   | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 64815661   | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 360006521  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 273525101  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 128305181  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 214849239  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 163823029m | 997.89941  | ng      |
| 35) C15(118) #2                    | 26.35    | E 219814433  | 2021.78182 | ng      |
| 36) C16(153) #2                    | 26.95    | E 192281279  | 1134.03485 | ng      |
| 37) C15(105) #2                    | 27.21    | 54323261     | 235.51526  | ng      |
| 38) C16(138) #2                    | 27.79    | e 112365573  | 581.03634  | ng      |
| 39) C17(187) #2                    | 28.15    | 32395412     | 193.41057  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7264.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0418\M7264.D\ECD2B.CH  
 Acq On : 10-26-2014 05:53:15 PM Operator: RR  
 Sample : M8360-P(2) Inst : INST. M  
 Misc : NBH14-0220 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:22 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 50814280m | 211.43164 | ng    |
| 41) | C17(180) #2  | 29.60 | 47683163m | 218.45300 | ng    |
| 42) | C17(170) #2  | 30.23 | 36050510  | 153.82738 | ng    |
| 43) | C18(195) #2  | 31.09 | 6798433   | 31.94989  | ng    |
| 44) | C19(206) #2  | 32.19 | 5798410m  | 30.21930  | ng    |
| 45) | C110(209) #2 | 32.63 | 1667752m  | 10.23023  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7265.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0418\M7265.D\ECD2B.CH  
 Acq On : 10-26-2014 06:37:52 PM Operator: RR  
 Sample : M8361-P(2) Inst : INST. M  
 Misc : NBH14-0224 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units  |
|------------------------------------|----------|------------|-----------|--------|
| <b>Internal Standards</b>          |          |            |           |        |
| 1) I C15(96)                       | 17.40    | 3844228m   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7925858m   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 16526564m  | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.80    | 37193038m  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |            |           |        |
| 4) s C13(34)                       | 13.41    | 8420748    | 282.45588 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 74.36% |
| 11) s C16(152)                     | 20.49    | 11302775   | 278.09403 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 72.92% |
| 27) s C13(34) #2                   | 16.48    | 46597215m  | 350.10768 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 92.17% |
| 34) s C16(152) #2                  | 23.63 TW | 48383105m  | 238.48102 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 62.53% |
| <b>Target Compounds</b>            |          |            |           |        |
| 2) C12(8)                          | 10.21    | 2005508m   | 89.23105  | ng     |
| 3) C13(18)                         | 12.13    | e 5314181  | 235.70555 | ng     |
| 5) C13(28)                         | 14.20    | E 29571685 | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | E 14991476 | BelowCal  | ng     |
| 7) C14(44)                         | 16.71    | 5532552    | 111.49978 | ng     |
| 8) C14(66)                         | 18.63    | 4352344m   | 73.70610  | ng     |
| 9) C15(101)                        | 19.72    | 7120156    | 125.64287 | ng     |
| 12) C15(118)                       | 22.40    | 6814120    | 122.82683 | ng     |
| 13) C16(153)                       | 23.43    | 8767454m   | 163.43795 | ng     |
| 14) C15(105)                       | 23.47    | 1729077m   | 21.83460  | ng     |
| 15) C16(138)                       | 24.54    | 7422649    | 105.83098 | ng     |
| 16) C17(187)                       | 25.30    | 1358526m   | 19.55361  | ng     |
| 17) C16(128)                       | 25.63    | 1502643m   | 20.32434  | ng     |
| 18) C17(180)                       | 27.16    | 1679459m   | 20.92842  | ng     |
| 19) C17(170)                       | 27.97    | 1322431m   | 14.12318  | ng     |
| 20) C18(195)                       | 29.05    | 227687m    | 1.34875   | ng     |
| 21) C19(206)                       | 30.31    | 261171m    | 2.09777   | ng     |
| 22) C110(209)                      | 30.91    | 59631m     | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 10745093m  | 101.70850 | ng     |
| 26) C13(18) #2                     | 15.00    | e 29929170 | 324.87194 | ng     |
| 28) C13(28) #2                     | 17.77    | e 95864370 | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.16    | E 87030708 | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 30757222m  | 133.25337 | ng     |
| 31) C14(66) #2                     | 22.34    | 21498076m  | 79.90333  | ng     |
| 32) C15(101) #2                    | 23.64 TW | 26466572m  | 167.35470 | ng     |
| 35) C15(118) #2                    | 26.34    | 39962763   | 174.04499 | ng     |
| 36) C16(153) #2                    | 26.94    | 39448153   | 159.56763 | ng     |
| 37) C15(105) #2                    | 27.21    | 9017830    | 24.99704  | ng     |
| 38) C16(138) #2                    | 27.79    | 19541458   | 81.12559  | ng     |
| 39) C17(187) #2                    | 28.15    | 7557754    | 27.78744  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7265.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0418\M7265.D\ECD2B.CH  
 Acq On : 10-26-2014 06:37:52 PM Operator: RR  
 Sample : M8361-P(2) Inst : INST. M  
 Misc : NBH14-0224 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 8599035m | 22.39548 | ng    |
| 41) | C17(180) #2  | 29.59 | 8748314m | 25.84791 | ng    |
| 42) | C17(170) #2  | 30.22 | 5983712m | 15.82882 | ng    |
| 43) | C18(195) #2  | 31.09 | 843311m  | 1.33140  | ng    |
| 44) | C19(206) #2  | 32.19 | 1004816m | 2.35629  | ng    |
| 45) | C110(209) #2 | 32.63 | 321977m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7266.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0418\M7266.D\ECD2B.CH  
 Acq On : 10-26-2014 07:22:23 PM Operator: RR  
 Sample : M8362-P(2) Inst : INST. M  
 Misc : NBH14-0228 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:34 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc      | Units   |
|------------------------------------|----------|--------------|-----------|---------|
| <b>Internal Standards</b>          |          |              |           |         |
| 1) I C15(96)                       | 17.40    | 3037866m     | 95.00000  | ng      |
| 10) I C16(161)                     | 23.24    | 5326577m     | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.53    | 12375657     | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.80    | 25520812m    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |              |           |         |
| 4) s C13(34)                       | 13.41    | 7966894m     | 374.04559 | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =         | 98.47%  |
| 11) s C16(152)                     | 20.50    | 8618052      | 323.54300 | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =         | 84.83%  |
| 27) s C13(34) #2                   | 16.48    | 38086620m    | 400.26510 | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =         | 105.37% |
| 34) s C16(152) #2                  | 23.64    | 37584781m    | 266.25289 | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =         | 69.81%  |
| <b>Target Compounds</b>            |          |              |           |         |
| 2) C12(8)                          | 10.21    | E 8187681    | BelowCal  | ng      |
| 3) C13(18)                         | 12.13    | E 19329414   | BelowCal  | ng      |
| 5) C13(28)                         | 14.20    | E 92801947   | BelowCal  | ng      |
| 6) C14(52)                         | 15.85    | E 45338707   | BelowCal  | ng      |
| 7) C14(44)                         | 16.71    | E 18655895   | BelowCal  | ng      |
| 8) C14(66)                         | 18.66    | E 24563310   | BelowCal  | ng      |
| 9) C15(101)                        | 19.73    | 10579141     | 261.53111 | ng      |
| 12) C15(118)                       | 22.35    | e 12853916m  | 430.88920 | ng      |
| 13) C16(153)                       | 23.45    | e 11387634m  | 348.74569 | ng      |
| 14) C15(105)                       | 23.48    | 2081293m     | 41.71657  | ng      |
| 15) C16(138)                       | 24.55    | 10929807m    | 249.02251 | ng      |
| 16) C17(187)                       | 25.32    | 3035942m     | 71.99812  | ng      |
| 17) C16(128)                       | 25.65    | 1684329      | 34.59110  | ng      |
| 18) C17(180)                       | 27.18    | 3000614m     | 59.35845  | ng      |
| 19) C17(170)                       | 27.98    | 2178299m     | 37.21027  | ng      |
| 20) C18(195)                       | 29.05    | 1722722m     | 31.10294  | ng      |
| 21) C19(206)                       | 30.33    | 3923921m     | 76.21254  | ng      |
| 22) C110(209)                      | 30.92    | 2489446m     | 58.89581  | ng      |
| 25) C12(8) #2                      | 13.11    | e 42966867   | BelowCal  | ng      |
| 26) C13(18) #2                     | 15.00    | E 93716143   | BelowCal  | ng      |
| 28) C13(28) #2                     | 17.77    | E 249164230  | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.16    | E 224111440  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.97    | e 83427901   | BelowCal  | ng      |
| 31) C14(66) #2                     | 22.35    | T e 79147229 | 565.19194 | ng      |
| 32) C15(101) #2                    | 23.46    | 44687349m    | 348.41396 | ng      |
| 35) C15(118) #2                    | 26.35    | 36511775     | 234.84167 | ng      |
| 36) C16(153) #2                    | 26.95    | 41290400     | 243.44875 | ng      |
| 37) C15(105) #2                    | 27.22    | 7005720      | 28.52298  | ng      |
| 38) C16(138) #2                    | 27.79    | 17116135m    | 102.63418 | ng      |
| 39) C17(187) #2                    | 28.15    | 20312063m    | 114.12200 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7266.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0418\M7266.D\ECD2B.CH  
 Acq On : 10-26-2014 07:22:23 PM Operator: RR  
 Sample : M8362-P(2) Inst : INST. M  
 Misc : NBH14-0228 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:34 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 7332831m  | 28.28208 | ng    |
| 41) | C17(180) #2  | 29.60 | 13500480m | 59.67173 | ng    |
| 42) | C17(170) #2  | 30.23 | 7292018m  | 29.12102 | ng    |
| 43) | C18(195) #2  | 31.09 | 2903629m  | 12.01157 | ng    |
| 44) | C19(206) #2  | 32.19 | 16165443m | 78.79928 | ng    |
| 45) | C110(209) #2 | 32.63 | 10489965m | 66.06664 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7267.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0418\M7267.D\ECD2B.CH  
 Acq On : 10-26-2014 08:06:58 PM Operator: RR  
 Sample : M8363-P(2) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:40 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.38    | 2787303m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 5087859m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.53    | 13728083     | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 22093566m    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.40    | 8063706m     | 453.56138  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 119.40% |
| 11) s C16(152)                     | 20.49    | 8391314      | 331.21879  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 86.85%  |
| 27) s C13(34) #2                   | 16.48    | 38730439m    | 350.42114  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 92.25%  |
| 34) s C16(152) #2                  | 23.64    | 37948702     | 304.56927  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 79.86%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.21    | E 10835780   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 27963459   | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 212268547  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 105838458  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 47206887   | BelowCal   | ng      |
| 8) C14(66)                         | 18.62    | E 23475879m  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 55623126   | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 58662967   | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 79674044   | BelowCal   | ng      |
| 14) C15(105)                       | 23.49    | 9886576m     | 269.42295  | ng      |
| 15) C16(138)                       | 24.55    | E 62212910   | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 9548807      | 262.80968  | ng      |
| 17) C16(128)                       | 25.64    | 12010997     | 306.39893  | ng      |
| 18) C17(180)                       | 27.17    | 14139532m    | 320.97388  | ng      |
| 19) C17(170)                       | 27.98    | 11295283m    | 218.82627  | ng      |
| 20) C18(195)                       | 29.05    | 1797990      | 34.14984   | ng      |
| 21) C19(206)                       | 30.32    | 2423937m     | 48.49962   | ng      |
| 22) C110(209)                      | 30.91    | 784632       | 18.14761   | ng      |
| 25) C12(8) #2                      | 13.11    | E 54934435   | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 130907017  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 548608519  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 482394979  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.97    | E 210224875  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.35    | E 276479527  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.46    | E 230867681m | 1167.31335 | ng      |
| 35) C15(118) #2                    | 26.35    | E 261631373  | 3502.07391 | ng      |
| 36) C16(153) #2                    | 26.95    | E 244319213  | 1501.66432 | ng      |
| 37) C15(105) #2                    | 27.21    | 58631328     | 270.78156  | ng      |
| 38) C16(138) #2                    | 27.79    | E 130675772  | 693.81828  | ng      |
| 39) C17(187) #2                    | 28.15    | 42534447     | 269.14258  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7267.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0418\M7267.D\ECD2B.CH  
 Acq On : 10-26-2014 08:06:58 PM Operator: RR  
 Sample : M8363-P(2) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:40 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 59067930  | 260.98175 | ng    |
| 41) | C17(180) #2  | 29.59 | 62412696m | 299.70873 | ng    |
| 42) | C17(170) #2  | 30.23 | 43513786  | 197.11898 | ng    |
| 43) | C18(195) #2  | 31.09 | 7184995m  | 36.43615  | ng    |
| 44) | C19(206) #2  | 32.19 | 7042385m  | 39.68643  | ng    |
| 45) | C110(209) #2 | 32.63 | 1996373m  | 13.58668  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7268.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0418\M7268.D\ECD2B.CH  
 Acq On : 10-26-2014 08:51:25 PM Operator: RR  
 Sample : M8368-P(2) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:46 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.40    | 2866852m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.23    | 4785445m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.53    | 16355129m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.83    | 20039548m    | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 10105120     | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.50    | 7710341      | 321.90538  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 84.40% |
| 27) s C13(34) #2                   | 16.48    | 43943594m    | 326.65919  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 85.99% |
| 34) s C16(152) #2                  | 23.64    | 33487200     | 297.39033  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 77.98% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.22    | E 66667044   | BelowCal   | ng     |
| 3) C13(18)                         | 12.14    | E 142562475  | BelowCal   | ng     |
| 5) C13(28)                         | 14.21    | E 610307336  | BelowCal   | ng     |
| 6) C14(52)                         | 15.85    | E 289466839  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 153437461  | BelowCal   | ng     |
| 8) C14(66)                         | 18.49    | E 59126192   | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 138316698  | BelowCal   | ng     |
| 12) C15(118)                       | 22.41    | E 113025111  | BelowCal   | ng     |
| 13) C16(153)                       | 23.45    | E 136839988  | BelowCal   | ng     |
| 14) C15(105)                       | 23.50    | 9654775m     | 284.31668  | ng     |
| 15) C16(138)                       | 24.55    | E 99552643   | BelowCal   | ng     |
| 16) C17(187)                       | 25.31    | e 18962132   | 683.09333  | ng     |
| 17) C16(128)                       | 25.65    | 12531787m    | 349.16300  | ng     |
| 18) C17(180)                       | 27.18    | e 22787494   | 593.83294  | ng     |
| 19) C17(170)                       | 27.98    | e 17729695m  | 381.88625  | ng     |
| 20) C18(195)                       | 29.06    | 2927799m     | 60.58991   | ng     |
| 21) C19(206)                       | 30.32    | 4049190m     | 87.98119   | ng     |
| 22) C110(209)                      | 30.92    | 838448m      | 20.84446   | ng     |
| 25) C12(8) #2                      | 13.11    | E 270735038  | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 552887676  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.78    | E 1433774933 | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 1145196903 | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.97    | E 605481295  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.35    | E 687442396  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.46    | E 559236888m | 1894.32365 | ng     |
| 35) C15(118) #2                    | 26.35    | E 489045801  | BelowCal   | ng     |
| 36) C16(153) #2                    | 26.95    | E 447923145  | 2742.28270 | ng     |
| 37) C15(105) #2                    | 27.21    | 62719303     | 315.37278  | ng     |
| 38) C16(138) #2                    | 27.79    | E 142723896  | 800.84284  | ng     |
| 39) C17(187) #2                    | 28.15    | e 79435545   | 524.06183  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7268.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0418\M7268.D\ECD2B.CH  
 Acq On : 10-26-2014 08:51:25 PM Operator: RR  
 Sample : M8368-P(2) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:46 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response    | Conc      | Units |
|-----|--------------|-------|-------------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 59747439m   | 288.87361 | ng    |
| 41) | C17(180) #2  | 29.60 | e 98052523m | 488.70459 | ng    |
| 42) | C17(170) #2  | 30.23 | 65426317    | 314.70973 | ng    |
| 43) | C18(195) #2  | 31.09 | 12758371m   | 71.54406  | ng    |
| 44) | C19(206) #2  | 32.19 | 13787315m   | 85.46962  | ng    |
| 45) | C110(209) #2 | 32.63 | 3065267m    | 23.95416  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7269.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0418\M7269.D\ECD2B.CH  
 Acq On : 10-26-2014 09:35:56 PM Operator: RR  
 Sample : M8369-P(2) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:52 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.40    | 2390269m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.22    | 4951624m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.52    | 15394826m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.80    | 22688283m    | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 8804670      | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.49    | 8445594      | 345.20621  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 90.51% |
| 27) s C13(34) #2                   | 16.48    | 41341972m    | 326.42008  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 85.93% |
| 34) s C16(152) #2                  | 23.64    | 38786869     | 303.32736  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 79.53% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.21    | E 18149504   | BelowCal   | ng     |
| 3) C13(18)                         | 12.13    | E 52084239   | BelowCal   | ng     |
| 5) C13(28)                         | 14.21    | E 317191502  | BelowCal   | ng     |
| 6) C14(52)                         | 15.85    | E 166617314  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 63326819   | BelowCal   | ng     |
| 8) C14(66)                         | 18.48    | E 23064051   | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 62775523   | BelowCal   | ng     |
| 12) C15(118)                       | 22.40    | E 45486099m  | BelowCal   | ng     |
| 13) C16(153)                       | 23.44    | E 80195462   | BelowCal   | ng     |
| 14) C15(105)                       | 23.48    | 7954857m     | 208.87538  | ng     |
| 15) C16(138)                       | 24.54    | E 58335979   | BelowCal   | ng     |
| 16) C17(187)                       | 25.31    | 11613039m    | 340.64195  | ng     |
| 17) C16(128)                       | 25.64    | 8691097m     | 215.55683  | ng     |
| 18) C17(180)                       | 27.17    | 14014126     | 327.47457  | ng     |
| 19) C17(170)                       | 27.97    | 10537179m    | 209.18054  | ng     |
| 20) C18(195)                       | 29.05    | 1953029m     | 38.32816   | ng     |
| 21) C19(206)                       | 30.32    | 2705071m     | 55.90531   | ng     |
| 22) C110(209)                      | 30.91    | 564020m      | 12.98232   | ng     |
| 25) C12(8) #2                      | 13.11    | E 84771028   | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 225093471  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.77    | E 790869054  | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 719136220  | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.97    | E 278707272  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.34    | E 312998012  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.46    | E 265659011m | 1188.89207 | ng     |
| 35) C15(118) #2                    | 26.34    | E 238028640  | 2509.18655 | ng     |
| 36) C16(153) #2                    | 26.95    | E 278723469  | 1647.63984 | ng     |
| 37) C15(105) #2                    | 27.21    | 41735471     | 191.78118  | ng     |
| 38) C16(138) #2                    | 27.79    | e 96782255   | 534.69872  | ng     |
| 39) C17(187) #2                    | 28.15    | 52846084     | 321.98267  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7269.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0418\M7269.D\ECD2B.CH  
 Acq On : 10-26-2014 09:35:56 PM Operator: RR  
 Sample : M8369-P(2) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:52 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 47937515  | 209.06780 | ng    |
| 41) | C17(180) #2  | 29.59 | 64364748m | 300.86833 | ng    |
| 42) | C17(170) #2  | 30.23 | 43116975  | 190.58882 | ng    |
| 43) | C18(195) #2  | 31.09 | 8790384m  | 43.53219  | ng    |
| 44) | C19(206) #2  | 32.19 | 8741373m  | 48.05207  | ng    |
| 45) | C110(209) #2 | 32.63 | 2109044m  | 14.01808  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7270.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0418\M7270.D\ECD2B.CH  
 Acq On : 26 Oct 2014 10:20 pm Operator: RR  
 Sample : M8370-P(2) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:58 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.40    | 2802792m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.22    | 5133630m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.53    | 18282342m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.82    | 21393245m    | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 9953659      | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.49    | 8686940      | 341.84204  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 89.63% |
| 27) s C13(34) #2                   | 16.48    | 45009899m    | 289.67948  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 76.26% |
| 34) s C16(152) #2                  | 23.63    | 39546572     | 324.48905  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 85.08% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.21    | E 37092422   | BelowCal   | ng     |
| 3) C13(18)                         | 12.14    | E 95902626   | BelowCal   | ng     |
| 5) C13(28)                         | 14.21    | E 426638307  | BelowCal   | ng     |
| 6) C14(52)                         | 15.85    | E 259355123  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 83081012   | BelowCal   | ng     |
| 8) C14(66)                         | 18.48    | E 39647068   | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 79786198   | BelowCal   | ng     |
| 12) C15(118)                       | 22.41    | E 69353315   | BelowCal   | ng     |
| 13) C16(153)                       | 23.44    | E 115165068  | BelowCal   | ng     |
| 14) C15(105)                       | 23.48    | e 17647670m  | BelowCal   | ng     |
| 15) C16(138)                       | 24.55    | E 87080163   | BelowCal   | ng     |
| 16) C17(187)                       | 25.31    | e 14111601m  | 413.28800  | ng     |
| 17) C16(128)                       | 25.64    | e 16168396   | 448.13816  | ng     |
| 18) C17(180)                       | 27.17    | e 18985248   | 441.77273  | ng     |
| 19) C17(170)                       | 27.98    | 15391017m    | 302.43245  | ng     |
| 20) C18(195)                       | 29.05    | 2605409      | 49.88315   | ng     |
| 21) C19(206)                       | 30.32    | 3614001m     | 72.71210   | ng     |
| 22) C110(209)                      | 30.91    | 723864m      | 16.45267   | ng     |
| 25) C12(8) #2                      | 13.11    | E 163443648  | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 385667835  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.77    | E 1044429221 | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 1077223532 | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.97    | E 353415017  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.34    | E 367503457  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.46    | E 288134987m | 1114.41284 | ng     |
| 35) C15(118) #2                    | 26.34    | E 321015249  | BelowCal   | ng     |
| 36) C16(153) #2                    | 26.95    | E 324794002  | 1980.31451 | ng     |
| 37) C15(105) #2                    | 27.21    | e 98487166   | 446.97943  | ng     |
| 38) C16(138) #2                    | 27.79    | E 173835890  | 884.88417  | ng     |
| 39) C17(187) #2                    | 28.15    | e 66156517   | 418.51478  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7270.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0418\M7270.D\ECD2B.CH  
 Acq On : 26 Oct 2014 10:20 pm Operator: RR  
 Sample : M8370-P(2) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:03:58 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 77858197  | 347.09388 | ng    |
| 41) | C17(180) #2  | 29.60 | 82055536m | 394.69183 | ng    |
| 42) | C17(170) #2  | 30.23 | 55622926  | 255.44680 | ng    |
| 43) | C18(195) #2  | 31.09 | 11421415m | 60.06861  | ng    |
| 44) | C19(206) #2  | 32.19 | 12348244m | 71.89457  | ng    |
| 45) | C110(209) #2 | 32.63 | 2589314m  | 18.67435  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7271.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0418\M7271.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:04 pm Operator: RR  
 Sample : M8387-P(2) Inst : INST. M  
 Misc : NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:04:04 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3096478   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 6330074m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14120078m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 33224675m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7338570   | 317.28318 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 83.52% |
| 11) s C16(152)                     | 20.49    | 10050792m | 316.23004 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 82.92% |
| 27) s C13(34) #2                   | 16.48    | 38713114m | 336.19086 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 88.50% |
| 34) s C16(152) #2                  | 23.63    | 51324205m | 277.67320 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 72.81% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 83133     | 0.51934   | ng     |
| 3) C13(18)                         | 12.13    | 70320m    | BelowCal  | ng     |
| 5) C13(28)                         | 14.20    | 505804m   | 9.49894   | ng     |
| 6) C14(52)                         | 15.84    | 238025m   | 1.92099   | ng     |
| 7) C14(44)                         | 16.70    | 116837m   | BelowCal  | ng     |
| 8) C14(66)                         | 18.60    | 473494m   | 7.17231   | ng     |
| 9) C15(101)                        | 19.72    | 335334m   | 5.22728   | ng     |
| 12) C15(118)                       | 22.39    | 763112m   | 13.64645  | ng     |
| 13) C16(153)                       | 23.43    | 516687m   | 10.27501  | ng     |
| 14) C15(105)                       | 23.46    | 265197m   | 2.20098   | ng     |
| 15) C16(138)                       | 24.54    | 699434m   | 9.95510   | ng     |
| 16) C17(187)                       | 25.30    | 130154m   | 0.26668   | ng     |
| 17) C16(128)                       | 25.63    | 187994m   | 2.61173   | ng     |
| 18) C17(180)                       | 27.16    | 119872m   | 0.13097   | ng     |
| 19) C17(170)                       | 27.97    | 120280m   | 0.14806   | ng     |
| 20) C18(195)                       | 29.04    | 17853m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 25542m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.90    | 15011m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 394225m   | 1.58864   | ng     |
| 26) C13(18) #2                     | 15.00    | 387245m   | BelowCal  | ng     |
| 28) C13(28) #2                     | 17.77    | 1930622m  | 7.35728   | ng     |
| 29) C14(52) #2                     | 19.15    | 1104659m  | 6.50112   | ng     |
| 30) C14(44) #2                     | 19.96    | 602674m   | 1.09482   | ng     |
| 31) C14(66) #2                     | 22.36    | 2298840m  | 7.86653   | ng     |
| 32) C15(101) #2                    | 23.68    | 1459718m  | 7.73162   | ng     |
| 35) C15(118) #2                    | 26.34    | 3620021m  | 14.08827  | ng     |
| 36) C16(153) #2                    | 26.94    | 2793578m  | 9.18216   | ng     |
| 37) C15(105) #2                    | 27.21    | 1291812m  | 2.40737   | ng     |
| 38) C16(138) #2                    | 27.78    | 2475217m  | 11.08378  | ng     |
| 39) C17(187) #2                    | 28.14    | 928379m   | 1.50877   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7271.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0418\M7271.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:04 pm Operator: RR  
 Sample : M8387-P(2) Inst : INST. M  
 Misc : NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:04:04 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:03:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 1115568m | 1.49164  | ng    |
| 41) | C17(180) #2  | 29.59 | 621590m  | 0.36278  | ng    |
| 42) | C17(170) #2  | 30.22 | 501604m  | 0.13889  | ng    |
| 43) | C18(195) #2  | 31.09 | 92876m   | BelowCal | ng    |
| 44) | C19(206) #2  | 32.19 | 53367m   | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 110665m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7271.D MM0417B.M Tue Nov 18 09:46:29 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7272.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0418\M7272.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:49 pm Operator: RR  
 Sample : M8387MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 13:10:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.40    | 2794790m  | 100.00000 | ng     |
| 10) I C16(161)              | 23.22    | 5471518   | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.52    | 13782385m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.79    | 31704327m | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 6655998m  | 336.49093 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 84.12% |
| 11) s C16(152)              | 20.48    | 9001961   | 347.60508 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 86.56% |
| 27) s C13(34) #2            | 16.48    | 38447214m | 362.83755 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 90.71% |
| 34) s C16(152) #2           | 23.63    | 63565678m | 366.11708 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 91.16% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 839791    | 49.96731  | ng     |
| 3) C13(18)                  | 12.13    | 1072495   | 51.39430  | ng     |
| 5) C13(28)                  | 14.21    | 2099709m  | 56.88642  | ng     |
| 6) C14(52)                  | 15.84    | 1445248m  | 51.63079  | ng     |
| 7) C14(44)                  | 16.70    | 1884961m  | 50.36297  | ng     |
| 8) C14(66)                  | 18.60    | 2357148   | 56.12214  | ng     |
| 9) C15(101)                 | 19.74    | 1978292m  | 46.83538  | ng     |
| 12) C15(118)                | 22.40    | 2421817m  | 62.57085  | ng     |
| 13) C16(153)                | 23.44 TW | 2213354m  | 59.06133  | ng     |
| 14) C15(105)                | 23.45 TW | 2892733m  | 61.18445  | ng     |
| 15) C16(138)                | 24.54    | 3068328   | 64.52997  | ng     |
| 16) C17(187)                | 25.29    | 2378684   | 56.79230  | ng     |
| 17) C16(128)                | 25.63    | 1970249m  | 41.66977  | ng     |
| 18) C17(180)                | 27.16    | 2811209   | 56.73358  | ng     |
| 19) C17(170)                | 27.96    | 3118968   | 55.48981  | ng     |
| 20) C18(195)                | 29.04    | 2950645   | 55.93465  | ng     |
| 21) C19(206)                | 30.31    | 2610406m  | 51.12727  | ng     |
| 22) C110(209)               | 30.90    | 2227140m  | 53.64063  | ng     |
| 25) C12(8) #2               | 13.11    | 4803227m  | 53.53132  | ng     |
| 26) C13(18) #2              | 15.00    | 5730276m  | 55.81920  | ng     |
| 28) C13(28) #2              | 17.77    | 11610435m | 60.30400  | ng     |
| 29) C14(52) #2              | 19.15    | 6576079m  | 57.45568  | ng     |
| 30) C14(44) #2              | 19.96    | 12191361m | 61.96997  | ng     |
| 31) C14(66) #2              | 22.36    | 13226713m | 60.67601  | ng     |
| 32) C15(101) #2             | 23.66    | 6172709m  | 49.44082  | ng     |
| 35) C15(118) #2             | 26.36    | 12504691m | 63.87147  | ng     |
| 36) C16(153) #2             | 26.94    | 13208490  | 64.09926  | ng     |
| 37) C15(105) #2             | 27.21    | 16797171m | 59.28849  | ng     |
| 38) C16(138) #2             | 27.79    | 11315980m | 58.48854  | ng     |
| 39) C17(187) #2             | 28.14    | 12503692m | 59.00131  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7272.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0418\M7272.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:49 pm Operator: RR  
 Sample : M8387MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 13:10:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 09:01:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 17156294m | 57.50784 | ng    |
| 41) | C17(180) #2  | 29.59 | 15476376m | 57.91431 | ng    |
| 42) | C17(170) #2  | 30.22 | 16772957m | 57.53624 | ng    |
| 43) | C18(195) #2  | 31.09 | 15637908m | 58.42306 | ng    |
| 44) | C19(206) #2  | 32.18 | 14171602m | 58.70002 | ng    |
| 45) | C110(209) #2 | 32.63 | 11768853m | 62.77010 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7273.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0418\M7273.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:34 am Operator: RR  
 Sample : M8387MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0101 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 13:10:38 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 13:10:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3335608   | 100.00000 | ng     |
| 10) I C16(161)                     | 23.22    | 6582280   | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.52    | 13686861m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.80    | 31391845  | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7709034   | 321.53678 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 80.38% |
| 11) s C16(152)                     | 20.49    | 10855480  | 348.62948 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 86.81% |
| 27) s C13(34) #2                   | 16.48    | 37614456m | 355.09112 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 88.77% |
| 34) s C16(152) #2                  | 23.63    | 62037694m | 361.64876 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 90.05% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 937424    | 46.29045  | ng     |
| 3) C13(18)                         | 12.13    | 1186411   | 47.04450  | ng     |
| 5) C13(28)                         | 14.21    | 2440366   | 55.25890  | ng     |
| 6) C14(52)                         | 15.84    | 1703295   | 50.86952  | ng     |
| 7) C14(44)                         | 16.70    | 2213300   | 49.45914  | ng     |
| 8) C14(66)                         | 18.60    | 2645650   | 52.46129  | ng     |
| 9) C15(101)                        | 19.74    | 2245084m  | 44.37981  | ng     |
| 12) C15(118)                       | 22.40    | 2999609   | 64.58631  | ng     |
| 13) C16(153)                       | 23.44 TW | 2883456m  | 64.19526  | ng     |
| 14) C15(105)                       | 23.45 TW | 3185926m  | 55.53527  | ng     |
| 15) C16(138)                       | 24.54    | 3552435   | 61.94929  | ng     |
| 16) C17(187)                       | 25.30    | 2823194   | 55.97951  | ng     |
| 17) C16(128)                       | 25.63    | 2056600m  | 35.96155  | ng     |
| 18) C17(180)                       | 27.16    | 3306051   | 55.39844  | ng     |
| 19) C17(170)                       | 27.96    | 3596779m  | 53.09069  | ng     |
| 20) C18(195)                       | 29.04    | 3417273m  | 53.76434  | ng     |
| 21) C19(206)                       | 30.31    | 3061367m  | 49.79165  | ng     |
| 22) C110(209)                      | 30.90    | 2615915m  | 52.31170  | ng     |
| 25) C12(8) #2                      | 13.11    | 4680367m  | 52.42564  | ng     |
| 26) C13(18) #2                     | 15.00    | 5455216m  | 53.16313  | ng     |
| 28) C13(28) #2                     | 17.77    | 11161786m | 58.23223  | ng     |
| 29) C14(52) #2                     | 19.15    | 6720353m  | 59.29584  | ng     |
| 30) C14(44) #2                     | 19.96    | 11715249m | 59.81294  | ng     |
| 31) C14(66) #2                     | 22.36    | 12786458m | 58.95215  | ng     |
| 32) C15(101) #2                    | 23.66    | 5418979m  | 43.33009  | ng     |
| 35) C15(118) #2                    | 26.36    | 11779606m | 60.55892  | ng     |
| 36) C16(153) #2                    | 26.94    | 12692051  | 62.09506  | ng     |
| 37) C15(105) #2                    | 27.21    | 16621928  | 59.25343  | ng     |
| 38) C16(138) #2                    | 27.79    | 11791366m | 61.51030  | ng     |
| 39) C17(187) #2                    | 28.14    | 12327289  | 58.73964  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7273.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0418\M7273.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:34 am Operator: RR  
 Sample : M8387MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0101 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 13:10:38 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 13:10:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 16933511  | 57.32246 | ng    |
| 41) | C17(180) #2  | 29.59 | 14927334  | 56.39651 | ng    |
| 42) | C17(170) #2  | 30.22 | 15756207  | 54.56423 | ng    |
| 43) | C18(195) #2  | 31.09 | 14379188m | 54.24629 | ng    |
| 44) | C19(206) #2  | 32.18 | 12583540m | 52.63432 | ng    |
| 45) | C110(209) #2 | 32.63 | 10356356m | 55.72049 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Data File : I:\M\DATA\SM0418\M7274A.D\ECD1A.CH Vial: 43  
 Acq On : 10-27-2014 02:03:53 AM Operator: RR  
 Sample : M8400-P(2) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274A.D\ECD2B.CH Vial: 43  
 Acq On : 10-27-2014 02:03:52 AM Operator: RR  
 Sample : M8400-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:04:50 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:04:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2497949m  | 95.00000 | ng    |
| 10) I C16(161)     | 23.22 | 4430780m  | 95.00000 | ng    |
| 24) I C15(96) #2   | 20.52 | 17718049m | 95.00000 | ng    |
| 33) I C16(161) #2  | 26.80 | 22703015  | 95.00000 | ng    |

|                             |          |           |           |        |
|-----------------------------|----------|-----------|-----------|--------|
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 9405102   | BelowCal  | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 0.00%  |
| 11) s C16(152)              | 20.49    | 7994275m  | 370.32764 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 97.10% |
| 27) s C13(34) #2            | 16.48    | 45607385m | 307.72324 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 81.01% |
| 34) s C16(152) #2           | 23.63    | 42836505  | 330.24188 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 86.59% |

|                  |       |   |            |               |
|------------------|-------|---|------------|---------------|
| Target Compounds |       |   |            |               |
| 2) C12(8)        | 10.21 | E | 18448760   | BelowCal ng   |
| 3) C13(18)       | 12.13 | E | 57721544   | BelowCal ng   |
| 5) C13(28)       | 14.20 | E | 327245959  | BelowCal ng   |
| 6) C14(52)       | 15.84 | E | 207635742  | BelowCal ng   |
| 7) C14(44)       | 16.71 | E | 71489992   | BelowCal ng   |
| 8) C14(66)       | 18.48 | e | 19592744   | BelowCal ng   |
| 9) C15(101)      | 19.72 | E | 65023952   | BelowCal ng   |
| 12) C15(118)     | 22.38 | E | 59645919m  | BelowCal ng   |
| 13) C16(153)     | 23.43 | E | 80688489   | BelowCal ng   |
| 14) C15(105)     | 23.48 |   | 5243600m   | 143.83771 ng  |
| 15) C16(138)     | 24.53 | E | 58924835   | BelowCal ng   |
| 16) C17(187)     | 25.30 | e | 14139573   | 500.69242 ng  |
| 17) C16(128)     | 25.63 |   | 6606715m   | 179.21554 ng  |
| 18) C17(180)     | 27.17 |   | 12881097m  | 337.30644 ng  |
| 19) C17(170)     | 27.97 |   | 9427886m   | 209.15872 ng  |
| 20) C18(195)     | 29.04 |   | 2135619    | 47.27061 ng   |
| 21) C19(206)     | 30.31 |   | 2856624m   | 66.37977 ng   |
| 22) C110(209)    | 30.91 |   | 612421m    | 16.09569 ng   |
| 25) C12(8) #2    | 13.11 | E | 89477766   | BelowCal ng   |
| 26) C13(18) #2   | 15.00 | E | 262078811  | BelowCal ng   |
| 28) C13(28) #2   | 17.77 | E | 855799160  | BelowCal ng   |
| 29) C14(52) #2   | 19.15 | E | 924139625  | BelowCal ng   |
| 30) C14(44) #2   | 19.96 | E | 329573442  | BelowCal ng   |
| 31) C14(66) #2   | 22.33 | E | 375514410  | BelowCal ng   |
| 32) C15(101) #2  | 23.45 | E | 325717352m | 1243.24303 ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7274A.D\ECD1A.CH Vial: 43  
 Acq On : 10-27-2014 02:03:53 AM Operator: RR  
 Sample : M8400-P(2) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274A.D\ECD2B.CH Vial: 43  
 Acq On : 10-27-2014 02:03:52 AM Operator: RR  
 Sample : M8400-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:04:50 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:04:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  |   | Response  | Conc       | Units |
|-----|--------------|-------|---|-----------|------------|-------|
| 35) | C15(118) #2  | 26.34 | E | 222075394 | 2213.00048 | ng    |
| 36) | C16(153) #2  | 26.94 | E | 302773474 | 1770.25845 | ng    |
| 37) | C15(105) #2  | 27.21 |   | 27974095m | 130.36630  | ng    |
| 38) | C16(138) #2  | 27.79 | e | 80210904  | 457.96192  | ng    |
| 39) | C17(187) #2  | 28.14 | e | 64812804  | 388.89840  | ng    |
| 40) | C16(128) #2  | 28.55 |   | 38256557m | 168.40560  | ng    |
| 41) | C17(180) #2  | 29.59 |   | 64192297m | 299.95568  | ng    |
| 42) | C17(170) #2  | 30.22 |   | 42058793  | 186.05206  | ng    |
| 43) | C18(195) #2  | 31.09 |   | 9800502m  | 48.55165   | ng    |
| 44) | C19(206) #2  | 32.19 |   | 12043915m | 66.13142   | ng    |
| 45) | C110(209) #2 | 32.63 |   | 2505259m  | 16.90379   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274B.D\ECD1A.CH Vial: 44  
 Signal #2 : I:\M\DATA\SM0418\M7274B.D\ECD2B.CH  
 Acq On : 10-27-2014 02:48:40 AM Operator: RR  
 Sample : M8401-P(2) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:04:56 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:04:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units  |
|------------------------------------|----------|--------------|------------|--------|
| <b>Internal Standards</b>          |          |              |            |        |
| 1) I C15(96)                       | 17.41    | 2784850m     | 95.00000   | ng     |
| 10) I C16(161)                     | 23.23    | 5113679m     | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.52    | 18887710m    | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.82    | 21321835m    | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |              |            |        |
| 4) s C13(34)                       | 13.41    | 11854246     | BelowCal   | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%  |
| 11) s C16(152)                     | 20.49    | 8219211      | 320.95569  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 84.15% |
| 27) s C13(34) #2                   | 16.48    | 53732219m    | 354.73740  | ng     |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 93.38% |
| 34) s C16(152) #2                  | 23.63    | 38400058     | 317.29251  | ng     |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 83.19% |
| <b>Target Compounds</b>            |          |              |            |        |
| 2) C12(8)                          | 10.21    | E 46914709   | BelowCal   | ng     |
| 3) C13(18)                         | 12.14    | E 191077650  | BelowCal   | ng     |
| 5) C13(28)                         | 14.22    | E 819309161  | BelowCal   | ng     |
| 6) C14(52)                         | 15.86    | E 583161723  | BelowCal   | ng     |
| 7) C14(44)                         | 16.71    | E 198032530  | BelowCal   | ng     |
| 8) C14(66)                         | 18.49    | E 36133324   | BelowCal   | ng     |
| 9) C15(101)                        | 19.73    | E 150476882  | BelowCal   | ng     |
| 12) C15(118)                       | 22.34    | E 349941687  | BelowCal   | ng     |
| 13) C16(153)                       | 23.44    | E 205490256  | BelowCal   | ng     |
| 14) C15(105)                       | 23.49    | 10324818m    | 284.63017  | ng     |
| 15) C16(138)                       | 24.54    | E 145666086  | BelowCal   | ng     |
| 16) C17(187)                       | 25.31    | E 41995500   | BelowCal   | ng     |
| 17) C16(128)                       | 25.64    | e 16035348   | 445.34040  | ng     |
| 18) C17(180)                       | 27.17    | E 31019146   | 804.93705  | ng     |
| 19) C17(170)                       | 27.97    | e 22056274m  | 453.30192  | ng     |
| 20) C18(195)                       | 29.05    | 5431183m     | 107.39217  | ng     |
| 21) C19(206)                       | 30.32    | 7800212m     | 162.54499  | ng     |
| 22) C110(209)                      | 30.91    | 1774554m     | 43.10315   | ng     |
| 25) C12(8) #2                      | 13.11    | E 202053637  | BelowCal   | ng     |
| 26) C13(18) #2                     | 15.00    | E 759420621  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.77    | E 1987553528 | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.16    | E 2372303988 | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.96    | E 827060225  | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.33    | E 836855982  | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.45    | E 793725419m | 2165.08577 | ng     |
| 35) C15(118) #2                    | 26.34    | E 455759890  | BelowCal   | ng     |
| 36) C16(153) #2                    | 26.94    | E 724406812  | 3838.81032 | ng     |
| 37) C15(105) #2                    | 27.21    | 58873420m    | 280.94070  | ng     |
| 38) C16(138) #2                    | 27.79    | E 156447427  | 819.22201  | ng     |
| 39) C17(187) #2                    | 28.15    | E 170286443  | 961.24595  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274B.D\ECD1A.CH Vial: 44  
 Signal #2 : I:\M\DATA\SM0418\M7274B.D\ECD2B.CH  
 Acq On : 10-27-2014 02:48:40 AM Operator: RR  
 Sample : M8401-P(2) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:04:56 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:04:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response    | Conc      | Units |
|-----|--------------|-------|-------------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 80361304    | 358.35249 | ng    |
| 41) | C17(180) #2  | 29.59 | e 151712999 | 671.82088 | ng    |
| 42) | C17(170) #2  | 30.22 | 84432289    | 374.46087 | ng    |
| 43) | C18(195) #2  | 31.09 | 23521239m   | 122.35379 | ng    |
| 44) | C19(206) #2  | 32.19 | 29410651m   | 167.29361 | ng    |
| 45) | C110(209) #2 | 32.63 | 5989773m    | 44.95887  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274B.D MM0417B.M Tue Nov 18 09:46:45 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7274D.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0418\M7274D.D\ECD2B.CH  
 Acq On : 10-27-2014 04:18:16 AM Operator: RR  
 Sample : M8404-P(2) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:08 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:00 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.38    | 2764098m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 5765366m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 13258912m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 21017691     | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.41    | 9426200      | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.49    | 9054655m     | 312.07392  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 81.83%  |
| 27) s C13(34) #2                   | 16.48    | 42432270m    | 426.90960  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 112.38% |
| 34) s C16(152) #2                  | 23.63    | 41154177     | 340.87296  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 89.38%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.21    | E 11035956   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 28514287   | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 208116155  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 101258777  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 42257829   | BelowCal   | ng      |
| 8) C14(66)                         | 18.65    | E 83303966   | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 57637217   | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 63494491   | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 80522295   | BelowCal   | ng      |
| 14) C15(105)                       | 23.49    | 8696636m     | 192.88966  | ng      |
| 15) C16(138)                       | 24.54    | E 62572374   | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 8646627m     | 204.26915  | ng      |
| 17) C16(128)                       | 25.64    | 11980181     | 262.51512  | ng      |
| 18) C17(180)                       | 27.17    | 14661775     | 291.27970  | ng      |
| 19) C17(170)                       | 27.97    | 11315891m    | 191.97655  | ng      |
| 20) C18(195)                       | 29.05    | 1769781m     | 29.43187   | ng      |
| 21) C19(206)                       | 30.32    | 2443996m     | 42.95253   | ng      |
| 22) C110(209)                      | 30.91    | 556166m      | 10.75318   | ng      |
| 25) C12(8) #2                      | 13.11    | E 52764985   | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 126276849  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 518137692  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.16    | E 442438709  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 179334378  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.35    | E 262723299  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.45    | E 225113862m | 1175.25638 | ng      |
| 35) C15(118) #2                    | 26.34    | E 259477138  | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.94    | E 232728779  | 1503.42211 | ng      |
| 37) C15(105) #2                    | 27.21    | 56537211     | 274.21286  | ng      |
| 38) C16(138) #2                    | 27.79    | e 126756198  | 704.43799  | ng      |
| 39) C17(187) #2                    | 28.14    | 41113592m    | 273.23518  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274D.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0418\M7274D.D\ECD2B.CH  
 Acq On : 10-27-2014 04:18:16 AM Operator: RR  
 Sample : M8404-P(2) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:08 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:00 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 53204573m | 247.96396 | ng    |
| 41) | C17(180) #2  | 29.59 | 60439481m | 304.60881 | ng    |
| 42) | C17(170) #2  | 30.22 | 42596270  | 202.49882 | ng    |
| 43) | C18(195) #2  | 31.09 | 7129308m  | 38.03579  | ng    |
| 44) | C19(206) #2  | 32.19 | 6419327m  | 38.00412  | ng    |
| 45) | C110(209) #2 | 32.63 | 1929928m  | 13.82985  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274D.D MM0417B.M Tue Nov 18 09:46:47 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7274E.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0418\M7274E.D\ECD2B.CH  
 Acq On : 10-27-2014 05:03:05 AM Operator: RR  
 Sample : M8405-P(2) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:14 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response     | Conc       | Units   |
|------------------------------------|----------|--------------|------------|---------|
| <b>Internal Standards</b>          |          |              |            |         |
| 1) I C15(96)                       | 17.39    | 2014377m     | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 5579760m     | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 13318212m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 22281197     | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |              |            |         |
| 4) s C13(34)                       | 13.40    | 9130549      | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 0.00%   |
| 11) s C16(152)                     | 20.49    | 9882477      | 361.79671  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 94.86%  |
| 27) s C13(34) #2                   | 16.48    | 43122766m    | 435.53309  | ng      |
| Spiked Amount                      | 379.8670 | Recovery     | =          | 114.65% |
| 34) s C16(152) #2                  | 23.63    | 43891687     | 342.62723  | ng      |
| Spiked Amount                      | 381.3865 | Recovery     | =          | 89.84%  |
| <b>Target Compounds</b>            |          |              |            |         |
| 2) C12(8)                          | 10.21    | E 12005286   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 33016408   | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 205723812  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 112043937  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 51535409   | BelowCal   | ng      |
| 8) C14(66)                         | 18.63    | E 43652666m  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 55110667   | BelowCal   | ng      |
| 12) C15(118)                       | 22.40    | E 54856069   | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 71913003   | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | 8971656m     | 209.10453  | ng      |
| 15) C16(138)                       | 24.54    | E 55777017   | BelowCal   | ng      |
| 16) C17(187)                       | 25.30    | 8455870m     | 206.64305  | ng      |
| 17) C16(128)                       | 25.64    | 9700426m     | 213.20703  | ng      |
| 18) C17(180)                       | 27.17    | 12623759     | 256.59802  | ng      |
| 19) C17(170)                       | 27.97    | 9984279m     | 174.09632  | ng      |
| 20) C18(195)                       | 29.05    | 1561604m     | 26.68211   | ng      |
| 21) C19(206)                       | 30.32    | 2218055m     | 40.16980   | ng      |
| 22) C110(209)                      | 30.91    | 547529m      | 10.96534   | ng      |
| 25) C12(8) #2                      | 13.11    | E 59939644   | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 150778389  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 521292820  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 504692761  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 229337369  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.34    | E 265102262  | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.45    | E 229095650m | 1186.21698 | ng      |
| 35) C15(118) #2                    | 26.34    | E 242794462  | 2712.54890 | ng      |
| 36) C16(153) #2                    | 26.94    | E 224309266  | 1381.25258 | ng      |
| 37) C15(105) #2                    | 27.21    | 45332400     | 211.03658  | ng      |
| 38) C16(138) #2                    | 27.79    | e 108413804  | 594.57641  | ng      |
| 39) C17(187) #2                    | 28.14    | 38833939m    | 244.87600  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274E.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0418\M7274E.D\ECD2B.CH  
 Acq On : 10-27-2014 05:03:05 AM Operator: RR  
 Sample : M8405-P(2) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:14 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 45043885m | 200.47184 | ng    |
| 41) | C17(180) #2  | 29.59 | 55137944m | 265.45253 | ng    |
| 42) | C17(170) #2  | 30.22 | 37502473  | 169.87618 | ng    |
| 43) | C18(195) #2  | 31.09 | 6624486m  | 33.24202  | ng    |
| 44) | C19(206) #2  | 32.19 | 6862591m  | 38.32923  | ng    |
| 45) | C110(209) #2 | 32.63 | 1953614m  | 13.14148  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Data File : I:\M\DATA\SM0418\M7274F.D\ECD1A.CH Vial: 48  
 Acq On : 10-27-2014 05:47:48 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274F.D\ECD2B.CH Vial: 48  
 Acq On : 10-27-2014 05:47:47 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:05:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:05:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound | R.T. | Response | Conc | Units |
|----------|------|----------|------|-------|
|----------|------|----------|------|-------|

Internal Standards

|       |             |       |           |             |
|-------|-------------|-------|-----------|-------------|
| 1) I  | C15(96)     | 17.40 | 3176875m  | 95.00000 ng |
| 10) I | C16(161)    | 23.21 | 7784313m  | 95.00000 ng |
| 24) I | C15(96) #2  | 20.52 | 16725519  | 95.00000 ng |
| 33) I | C16(161) #2 | 26.79 | 40197084m | 95.00000 ng |

System Monitoring Compounds

|               |             |         |          |      |       |
|---------------|-------------|---------|----------|------|-------|
| 4) s          | C13(34)     | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount |             | 18.9997 | Recovery | =    | 0.00% |
| 11) s         | C16(152)    | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount |             | 19.0757 | Recovery | =    | 0.00% |
| 27) s         | C13(34) #2  | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount |             | 18.9997 | Recovery | =    | 0.00% |
| 34) s         | C16(152) #2 | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount |             | 19.0757 | Recovery | =    | 0.00% |

Target Compounds

|     |             |       |             |           |    |
|-----|-------------|-------|-------------|-----------|----|
| 2)  | C12(8)      | 10.21 | 1368554m    | 71.58742  | ng |
| 3)  | C13(18)     | 12.13 | 3673890m    | 183.44144 | ng |
| 5)  | C13(28)     | 14.20 | e 11173682m | 343.42533 | ng |
| 6)  | C14(52)     | 15.84 | E 14189868m | BelowCal  | ng |
| 7)  | C14(44)     | 16.70 | 4744709m    | 116.32113 | ng |
| 8)  | C14(66)     | 18.62 | 2977544m    | 59.86552  | ng |
| 9)  | C15(101)    | 19.72 | 4453127m    | 92.60734  | ng |
| 12) | C15(118)    | 22.35 | 3934966m    | 68.68236  | ng |
| 13) | C16(153)    | 23.43 | 5026479m    | 91.70827  | ng |
| 14) | C15(105)    | 0.00  | 0d          | N.D.      | ng |
| 15) | C16(138)    | 24.52 | 4153822m    | 58.14551  | ng |
| 16) | C17(187)    | 25.29 | 1117206m    | 15.96610  | ng |
| 17) | C16(128)    | 0.00  | 0d          | N.D.      | ng |
| 18) | C17(180)    | 0.00  | 0d          | N.D.      | ng |
| 19) | C17(170)    | 0.00  | 0d          | N.D.      | ng |
| 20) | C18(195)    | 0.00  | 0d          | N.D.      | ng |
| 21) | C19(206)    | 0.00  | 0d          | N.D.      | ng |
| 22) | C110(209)   | 0.00  | 0d          | N.D.      | ng |
| 25) | C12(8) #2   | 13.11 | 7346876m    | 65.63776  | ng |
| 26) | C13(18) #2  | 15.00 | 22962439m   | 218.48974 | ng |
| 28) | C13(28) #2  | 17.77 | e 75045152m | 415.61029 | ng |
| 29) | C14(52) #2  | 19.15 | E 79852559m | BelowCal  | ng |
| 30) | C14(44) #2  | 19.96 | 27321539m   | 115.07069 | ng |
| 31) | C14(66) #2  | 22.33 | 15713729m   | 56.34457  | ng |
| 32) | C15(101) #2 | 23.45 | 28563447m   | 177.73751 | ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7274F.D\ECD1A.CH Vial: 48  
 Acq On : 10-27-2014 05:47:48 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274F.D\ECD2B.CH Vial: 48  
 Acq On : 10-27-2014 05:47:47 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e  
 Quant Time: Oct 28 10:05:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 35) | C15(118) #2  | 26.34 | 19246667m | 74.56138 | ng    |
| 36) | C16(153) #2  | 26.94 | 26679299m | 98.97978 | ng    |
| 37) | C15(105) #2  | 0.00  | 0d        | N.D.     | ng    |
| 38) | C16(138) #2  | 27.84 | 13387012m | 51.88358 | ng    |
| 39) | C17(187) #2  | 28.14 | 5994098m  | 19.71613 | ng    |
| 40) | C16(128) #2  | 0.00  | 0d        | N.D.     | ng    |
| 41) | C17(180) #2  | 0.00  | 0d        | N.D.     | ng    |
| 42) | C17(170) #2  | 0.00  | 0d        | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d        | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d        | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d        | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7274G.D\ECD1A.CH Vial: 49  
 Acq On : 10-27-2014 06:32:31 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274G.D\ECD2B.CH Vial: 49  
 Acq On : 10-27-2014 06:32:32 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:05:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:05:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3510574m  | 95.00000 | ng    |
| 10) I C16(161)     | 23.21 | 8686728m  | 95.00000 | ng    |
| 24) I C15(96) #2   | 20.52 | 17239597m | 95.00000 | ng    |
| 33) I C16(161) #2  | 26.79 | 40703958  | 95.00000 | ng    |

| Compound                    | R.T.    | Response | Conc | Units |
|-----------------------------|---------|----------|------|-------|
| System Monitoring Compounds |         |          |      |       |
| 4) s C13(34)                | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount               | 18.9997 | Recovery | =    | 0.00% |
| 11) s C16(152)              | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount               | 19.0757 | Recovery | =    | 0.00% |
| 27) s C13(34) #2            | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount               | 18.9997 | Recovery | =    | 0.00% |
| 34) s C16(152) #2           | 0.00    | 0d       | N.D. | ng    |
| Spiked Amount               | 19.0757 | Recovery | =    | 0.00% |

| Compound         | R.T.  | Response    | Conc      | Units |
|------------------|-------|-------------|-----------|-------|
| Target Compounds |       |             |           |       |
| 2) C12(8)        | 10.21 | 3360332     | 186.83526 | ng    |
| 3) C13(18)       | 12.13 | E 13053245  | BelowCal  | ng    |
| 5) C13(28)       | 14.20 | E 64401179  | BelowCal  | ng    |
| 6) C14(52)       | 15.84 | E 43963438  | BelowCal  | ng    |
| 7) C14(44)       | 16.70 | e 13073624  | 385.43155 | ng    |
| 8) C14(66)       | 18.65 | e 17085924m | 497.86621 | ng    |
| 9) C15(101)      | 19.72 | 10022778    | 205.62110 | ng    |
| 12) C15(118)     | 22.37 | 6889349m    | 112.35081 | ng    |
| 13) C16(153)     | 23.43 | e 12688245m | 222.65908 | ng    |
| 14) C15(105)     | 0.00  | 0d          | N.D.      | ng    |
| 15) C16(138)     | 24.53 | 9076073     | 118.97713 | ng    |
| 16) C17(187)     | 25.29 | 2909046     | 40.79604  | ng    |
| 17) C16(128)     | 25.63 | 1098271     | 13.28844  | ng    |
| 18) C17(180)     | 27.16 | 1895385     | 21.61066  | ng    |
| 19) C17(170)     | 27.97 | 1395635m    | 13.53648  | ng    |
| 20) C18(195)     | 0.00  | 0d          | N.D.      | ng    |
| 21) C19(206)     | 0.00  | 0d          | N.D.      | ng    |
| 22) C110(209)    | 0.00  | 0d          | N.D.      | ng    |
| 25) C12(8) #2    | 13.11 | 17097890m   | 166.56321 | ng    |
| 26) C13(18) #2   | 15.00 | E 68429914  | BelowCal  | ng    |
| 28) C13(28) #2   | 17.77 | E 206563984 | BelowCal  | ng    |
| 29) C14(52) #2   | 19.15 | E 235324847 | BelowCal  | ng    |
| 30) C14(44) #2   | 19.96 | e 72435548  | 375.17293 | ng    |
| 31) C14(66) #2   | 22.32 | e 71111724m | 296.21288 | ng    |
| 32) C15(101) #2  | 23.63 | 4286539     | 24.49307  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0418\M7274G.D\ECD1A.CH Vial: 49  
 Acq On : 10-27-2014 06:32:31 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274G.D\ECD2B.CH Vial: 49  
 Acq On : 10-27-2014 06:32:32 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Oct 28 10:05:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)

Title : NBH  
 Last Update : Tue Oct 28 10:05:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA

Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response   | Conc      | Units |
|-----|--------------|-------|------------|-----------|-------|
| 35) | C15(118) #2  | 26.33 | 37312030m  | 147.43006 | ng    |
| 36) | C16(153) #2  | 26.94 | e 63217141 | 233.76208 | ng    |
| 37) | C15(105) #2  | 0.00  | 0d         | N.D.      | ng    |
| 38) | C16(138) #2  | 27.83 | 30181051m  | 112.94960 | ng    |
| 39) | C17(187) #2  | 28.14 | 14811720   | 51.57025  | ng    |
| 40) | C16(128) #2  | 28.54 | 5794604m   | 13.03277  | ng    |
| 41) | C17(180) #2  | 29.59 | 10480348m  | 28.44107  | ng    |
| 42) | C17(170) #2  | 30.22 | 6636546m   | 16.06009  | ng    |
| 43) | C18(195) #2  | 0.00  | 0d         | N.D.      | ng    |
| 44) | C19(206) #2  | 0.00  | 0d         | N.D.      | ng    |
| 45) | C110(209) #2 | 0.00  | 0d         | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274H.D\ECD1A.CH Vial: 50  
 Signal #2 : I:\M\DATA\SM0418\M7274H.D\ECD2B.CH  
 Acq On : 10-27-2014 07:17:11 AM Operator: RR  
 Sample : M8402-P-D(4) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:36 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response     | Conc      | Units |
|------------------------------------|---------|--------------|-----------|-------|
| <b>Internal Standards</b>          |         |              |           |       |
| 1) I C15(96)                       | 17.39   | 3643347m     | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 4687937m     | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 25778192     | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 32087613m    | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |              |           |       |
| 4) s C13(34)                       | 0.00    | 0d           | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery     | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d           | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery     | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d           | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery     | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d           | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery     | =         | 0.00% |
| <b>Target Compounds</b>            |         |              |           |       |
| 2) C12(8)                          | 10.21   | E 93656551   | BelowCal  | ng    |
| 3) C13(18)                         | 12.13   | E 125977515  | BelowCal  | ng    |
| 5) C13(28)                         | 14.19   | E 306414681  | BelowCal  | ng    |
| 6) C14(52)                         | 15.84   | E 212723448  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | E 89493917   | BelowCal  | ng    |
| 8) C14(66)                         | 18.65   | E 43796603m  | BelowCal  | ng    |
| 9) C15(101)                        | 19.71   | E 30207261   | BelowCal  | ng    |
| 12) C15(118)                       | 22.38   | e 12270265m  | 488.79442 | ng    |
| 13) C16(153)                       | 23.43   | E 31644136m  | BelowCal  | ng    |
| 14) C15(105)                       | 23.49   | 759936m      | 15.52057  | ng    |
| 15) C16(138)                       | 24.53   | E 29109553   | BelowCal  | ng    |
| 16) C17(187)                       | 25.29   | 7018927m     | 203.88831 | ng    |
| 17) C16(128)                       | 25.63   | 3253817m     | 78.52899  | ng    |
| 18) C17(180)                       | 27.16   | 7946096      | 188.43129 | ng    |
| 19) C17(170)                       | 27.97   | 5765080m     | 117.47254 | ng    |
| 20) C18(195)                       | 29.04   | 1211606m     | 24.51106  | ng    |
| 21) C19(206)                       | 30.31   | 1365854m     | 29.01284  | ng    |
| 22) C110(209)                      | 30.90   | 261553m      | 5.56687   | ng    |
| 25) C12(8) #2                      | 13.11   | E 382327310  | BelowCal  | ng    |
| 26) C13(18) #2                     | 15.00   | E 498339423  | BelowCal  | ng    |
| 28) C13(28) #2                     | 17.77   | E 528916850  | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | E 873159307  | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | E 396783401  | BelowCal  | ng    |
| 31) C14(66) #2                     | 22.32   | E 220065578  | BelowCal  | ng    |
| 32) C15(101) #2                    | 23.63   | 6213940      | 23.62521  | ng    |
| 35) C15(118) #2                    | 26.34   | e 70941723   | 371.71774 | ng    |
| 36) C16(153) #2                    | 26.94   | E 126050699  | 577.73782 | ng    |
| 37) C15(105) #2                    | 27.21   | 7028019      | 22.41378  | ng    |
| 38) C16(138) #2                    | 27.83   | e 109971589m | 446.51358 | ng    |
| 39) C17(187) #2                    | 28.14   | 31943032m    | 142.37533 | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274H.D\ECD1A.CH Vial: 50  
 Signal #2 : I:\M\DATA\SM0418\M7274H.D\ECD2B.CH  
 Acq On : 10-27-2014 07:17:11 AM Operator: RR  
 Sample : M8402-P-D(4) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:36 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 19317157m | 60.88903  | ng    |
| 41) | C17(180) #2  | 29.59 | 38121672m | 132.66717 | ng    |
| 42) | C17(170) #2  | 30.22 | 23013671m | 74.09097  | ng    |
| 43) | C18(195) #2  | 31.09 | 6233550   | 21.36866  | ng    |
| 44) | C19(206) #2  | 32.18 | 6033887m  | 23.09370  | ng    |
| 45) | C110(209) #2 | 32.62 | 1351038m  | 5.55303   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274H.D MM0417B.M Tue Nov 18 09:46:52 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7274I.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0418\M7274I.D\ECD2B.CH  
 Acq On : 10-27-2014 08:02:03 AM Operator: RR  
 Sample : M8404-P-D(4) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:42 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.40   | 3243028m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 7746904m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 17180000    | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 39175001m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 848049m     | 40.49339  | ng    |
| 3) C13(18)                         | 12.13   | 2129566m    | 91.20607  | ng    |
| 5) C13(28)                         | 14.20   | e 13215964m | 449.89210 | ng    |
| 6) C14(52)                         | 15.83   | e 6770195m  | 268.09974 | ng    |
| 7) C14(44)                         | 16.70   | 2906827m    | 65.57609  | ng    |
| 8) C14(66)                         | 18.62   | 2534768m    | 49.04182  | ng    |
| 9) C15(101)                        | 19.72   | 4039880m    | 81.51282  | ng    |
| 12) C15(118)                       | 22.39   | 4118094m    | 72.54571  | ng    |
| 13) C16(153)                       | 23.43   | 4307107m    | 78.31720  | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 4147990m    | 58.35728  | ng    |
| 16) C17(187)                       | 0.00    | 0d          | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d          | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 4218167m    | 34.55531  | ng    |
| 26) C13(18) #2                     | 15.00   | 10966550m   | 86.79073  | ng    |
| 28) C13(28) #2                     | 17.77   | 43011725    | 191.88263 | ng    |
| 29) C14(52) #2                     | 19.15   | e 39728263  | 385.52422 | ng    |
| 30) C14(44) #2                     | 19.96   | 15931321m   | 61.94598  | ng    |
| 31) C14(66) #2                     | 22.34   | 12355082m   | 42.30428  | ng    |
| 32) C15(101) #2                    | 23.45   | 21261898m   | 130.98652 | ng    |
| 35) C15(118) #2                    | 26.34   | 23340341    | 93.89241  | ng    |
| 36) C16(153) #2                    | 26.94   | 21419593    | 80.99050  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 11433730    | 45.50592  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d          | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274I.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0418\M7274I.D\ECD2B.CH  
 Acq On : 10-27-2014 08:02:03 AM Operator: RR  
 Sample : M8404-P-D(4) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:42 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274I.D MM0417B.M Tue Nov 18 09:46:53 2014 046776CFS



Signal #1 : I:\M\DATA\SM0418\M7274J.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0418\M7274J.D\ECD2B.CH  
 Acq On : 10-27-2014 08:46:39 AM Operator: RR  
 Sample : M8405-P-D(4) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.40   | 3234848     | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 7146689     | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15400055    | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 34738680m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 943584      | 45.88688  | ng    |
| 3) C13(18)                         | 12.13   | 2523612     | 111.91976 | ng    |
| 5) C13(28)                         | 14.20   | e 13189041  | 450.37879 | ng    |
| 6) C14(52)                         | 15.84   | e 7624236   | 322.64558 | ng    |
| 7) C14(44)                         | 16.70   | 3556490     | 82.30816  | ng    |
| 8) C14(66)                         | 18.62   | 2198905m    | 42.06345  | ng    |
| 9) C15(101)                        | 19.72   | 3765537     | 75.77275  | ng    |
| 12) C15(118)                       | 22.39   | 3121704     | 58.59250  | ng    |
| 13) C16(153)                       | 23.43   | 4073488m    | 80.39532  | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3481836     | 52.76818  | ng    |
| 16) C17(187)                       | 0.00    | 0d          | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d          | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 4758579m    | 44.54414  | ng    |
| 26) C13(18) #2                     | 14.99   | 12784211m   | 117.75131 | ng    |
| 28) C13(28) #2                     | 17.76   | 40509599    | 203.49930 | ng    |
| 29) C14(52) #2                     | 19.15   | e 40019259m | 515.58095 | ng    |
| 30) C14(44) #2                     | 19.96   | 18581295    | 82.40425  | ng    |
| 31) C14(66) #2                     | 22.33   | 11336881m   | 43.37926  | ng    |
| 32) C15(101) #2                    | 23.45   | 19029364m   | 130.79028 | ng    |
| 35) C15(118) #2                    | 26.34   | 18363045    | 82.77770  | ng    |
| 36) C16(153) #2                    | 26.94   | 17774504    | 75.57816  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 8516640     | 38.21860  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d          | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7274J.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0418\M7274J.D\ECD2B.CH  
 Acq On : 10-27-2014 08:46:39 AM Operator: RR  
 Sample : M8405-P-D(4) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7274J.D MM0417B.M Tue Nov 18 09:46:55 2014 046776CFS

Signal #1 : I:\M\DATA\SM0418\M7275.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0418\M7275.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:15 am Operator: RR  
 Sample : M8152-P-D(4) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:54 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3406914     | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 8028174m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14052605m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 33291203m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 911841      | 41.58602  | ng    |
| 3) C13(18)                         | 12.13   | 2209336m    | 89.87229  | ng    |
| 5) C13(28)                         | 14.19   | e 18184512m | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | e 7605992   | 296.22170 | ng    |
| 7) C14(44)                         | 16.70   | 3081806     | 66.24553  | ng    |
| 8) C14(66)                         | 18.62   | 2181801m    | 39.38854  | ng    |
| 9) C15(101)                        | 19.71   | 4135493     | 79.26798  | ng    |
| 12) C15(118)                       | 22.39   | 2954083     | 48.60341  | ng    |
| 13) C16(153)                       | 23.43   | 4656390m    | 81.88534  | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3637543m    | 48.83276  | ng    |
| 16) C17(187)                       | 0.00    | 0d          | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d          | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 4527504m    | 46.64211  | ng    |
| 26) C13(18) #2                     | 14.99   | 10291321m   | 101.72845 | ng    |
| 28) C13(28) #2                     | 17.76   | 51373807    | 308.18421 | ng    |
| 29) C14(52) #2                     | 19.15   | e 38620927  | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 14454577m   | 69.28923  | ng    |
| 31) C14(66) #2                     | 22.34   | 8446757m    | 34.87749  | ng    |
| 32) C15(101) #2                    | 23.45   | 18161786m   | 136.55182 | ng    |
| 35) C15(118) #2                    | 26.34   | 15563541    | 72.69771  | ng    |
| 36) C16(153) #2                    | 26.94   | 17684810    | 78.59351  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 6767744     | 31.63515  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d          | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7275.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0418\M7275.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:15 am Operator: RR  
 Sample : M8152-P-D(4) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:05:54 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7276.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0418\M7276.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:00 am Operator: RR  
 Sample : M8153-P-D(4) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:00 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:52 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response   | Conc      | Units |
|------------------------------------|---------|------------|-----------|-------|
| <b>Internal Standards</b>          |         |            |           |       |
| 1) I C15(96)                       | 17.40   | 3482089    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 7903402m   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15867156m  | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 38113503m  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |            |           |       |
| 4) s C13(34)                       | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| <b>Target Compounds</b>            |         |            |           |       |
| 2) C12(8)                          | 10.21   | 1298168    | 60.69703  | ng    |
| 3) C13(18)                         | 12.13   | 2840169    | 118.08916 | ng    |
| 5) C13(28)                         | 14.20   | E 23775945 | BelowCal  | ng    |
| 6) C14(52)                         | 15.84   | e 10710274 | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 4523218    | 99.26086  | ng    |
| 8) C14(66)                         | 18.62   | 3243028m   | 59.45094  | ng    |
| 9) C15(101)                        | 19.72   | 5756299    | 110.85231 | ng    |
| 12) C15(118)                       | 22.39   | 4446533m   | 77.16651  | ng    |
| 13) C16(153)                       | 23.42   | 6693327m   | 122.39606 | ng    |
| 14) C15(105)                       | 0.00    | 0d         | N.D.      | ng    |
| 15) C16(138)                       | 24.52   | 5003139m   | 69.74166  | ng    |
| 16) C17(187)                       | 25.29   | 1209045    | 17.18175  | ng    |
| 17) C16(128)                       | 0.00    | 0d         | N.D.      | ng    |
| 18) C17(180)                       | 27.16   | 1251198    | 15.13187  | ng    |
| 19) C17(170)                       | 0.00    | 0d         | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d         | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d         | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d         | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 6558076m   | 61.36884  | ng    |
| 26) C13(18) #2                     | 14.99   | 14870330m  | 135.91124 | ng    |
| 28) C13(28) #2                     | 17.76   | e 73789810 | 440.98747 | ng    |
| 29) C14(52) #2                     | 19.15   | e 59281760 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 23819277m  | 104.75141 | ng    |
| 31) C14(66) #2                     | 22.34   | 16803012m  | 64.05889  | ng    |
| 32) C15(101) #2                    | 23.45   | 28900706m  | 188.71996 | ng    |
| 35) C15(118) #2                    | 26.34   | 25586779m  | 106.42650 | ng    |
| 36) C16(153) #2                    | 26.94   | 27770769   | 108.93893 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d         | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 11055720   | 45.22775  | ng    |
| 39) C17(187) #2                    | 28.14   | 5695234m   | 19.76257  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7276.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0418\M7276.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:00 am Operator: RR  
 Sample : M8153-P-D(4) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:00 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:52 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 0.00  | 0d       | N.D.     | ng    |
| 41) | C17(180) #2  | 29.59 | 6385935m | 17.93570 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7277.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0418\M7277.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:44 am Operator: RR  
 Sample : M8154-P-D(4) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:58 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response   | Conc      | Units |
|------------------------------------|---------|------------|-----------|-------|
| <b>Internal Standards</b>          |         |            |           |       |
| 1) I C15(96)                       | 17.39   | 3382846m   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 8278172    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14300558m  | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 32571241m  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |            |           |       |
| 4) s C13(34)                       | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| <b>Target Compounds</b>            |         |            |           |       |
| 2) C12(8)                          | 10.21   | 2059693m   | 106.87329 | ng    |
| 3) C13(18)                         | 12.13   | 4381368    | 214.37474 | ng    |
| 5) C13(28)                         | 14.20   | E 26282837 | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | e 11688652 | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 6331453    | 151.21384 | ng    |
| 8) C14(66)                         | 18.61   | 3486560m   | 66.45683  | ng    |
| 9) C15(101)                        | 19.71   | 6877788    | 139.37188 | ng    |
| 12) C15(118)                       | 22.39   | 5216880m   | 87.32349  | ng    |
| 13) C16(153)                       | 23.42   | 6841556m   | 119.23490 | ng    |
| 14) C15(105)                       | 0.00    | 0d         | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 5582799    | 74.59836  | ng    |
| 16) C17(187)                       | 25.29   | 1199800    | 16.14793  | ng    |
| 17) C16(128)                       | 0.00    | 0d         | N.D.      | ng    |
| 18) C17(180)                       | 27.16   | 1421047    | 16.57453  | ng    |
| 19) C17(170)                       | 0.00    | 0d         | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d         | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d         | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d         | N.D.      | ng    |
| 25) C12(8) #2                      | 13.10   | 9279578m   | 101.48252 | ng    |
| 26) C13(18) #2                     | 14.99   | 19942133m  | 223.04495 | ng    |
| 28) C13(28) #2                     | 17.76   | e 71805245 | 507.73977 | ng    |
| 29) C14(52) #2                     | 19.15   | e 59157654 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 29124079m  | 147.68669 | ng    |
| 31) C14(66) #2                     | 22.34   | 16831473m  | 71.75074  | ng    |
| 32) C15(101) #2                    | 23.44   | 26839479m  | 194.03154 | ng    |
| 35) C15(118) #2                    | 26.33   | 25663002m  | 125.85319 | ng    |
| 36) C16(153) #2                    | 26.94   | 26212410   | 120.59410 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d         | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 10940633   | 52.32564  | ng    |
| 39) C17(187) #2                    | 28.14   | 4924163m   | 20.02470  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7277.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0418\M7277.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:44 am Operator: RR  
 Sample : M8154-P-D(4) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:05:58 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 0.00  | 0d       | N.D.     | ng    |
| 41) | C17(180) #2  | 29.58 | 5792629m | 19.14252 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7278.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0418\M7278.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:29 pm Operator: RR  
 Sample : M8155-P-D(4) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:12 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response   | Conc      | Units |
|------------------------------------|---------|------------|-----------|-------|
| <b>Internal Standards</b>          |         |            |           |       |
| 1) I C15(96)                       | 17.39   | 3070304m   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 7326429    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14612568m  | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 33562683m  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |            |           |       |
| 4) s C13(34)                       | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| <b>Target Compounds</b>            |         |            |           |       |
| 2) C12(8)                          | 10.21   | 2279547m   | 135.51689 | ng    |
| 3) C13(18)                         | 12.13   | e 4717027  | 278.44259 | ng    |
| 5) C13(28)                         | 14.20   | E 30795605 | BelowCal  | ng    |
| 6) C14(52)                         | 15.84   | e 10583020 | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 7378060    | 205.04642 | ng    |
| 8) C14(66)                         | 18.60   | 4385867m   | 95.40532  | ng    |
| 9) C15(101)                        | 19.72   | 8368636    | 194.72287 | ng    |
| 12) C15(118)                       | 22.39   | 7623570    | 152.00449 | ng    |
| 13) C16(153)                       | 23.43   | 7802256m   | 156.79082 | ng    |
| 14) C15(105)                       | 23.46   | 1603028m   | 21.90757  | ng    |
| 15) C16(138)                       | 24.53   | 5875241    | 89.69366  | ng    |
| 16) C17(187)                       | 25.29   | 1091164    | 16.66199  | ng    |
| 17) C16(128)                       | 25.63   | 1109978    | 16.07537  | ng    |
| 18) C17(180)                       | 27.16   | 1405763    | 18.76077  | ng    |
| 19) C17(170)                       | 27.96   | 1050365m   | 11.89723  | ng    |
| 20) C18(195)                       | 0.00    | 0d         | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d         | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d         | N.D.      | ng    |
| 25) C12(8) #2                      | 13.10   | 11392866m  | 125.23205 | ng    |
| 26) C13(18) #2                     | 14.99   | 24314715m  | 285.23193 | ng    |
| 28) C13(28) #2                     | 17.76   | e 95272931 | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | e 57088717 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 40147148   | 210.51036 | ng    |
| 31) C14(66) #2                     | 22.35   | 22568945m  | 96.19382  | ng    |
| 32) C15(101) #2                    | 23.45   | 39347848m  | 269.33766 | ng    |
| 35) C15(118) #2                    | 26.34   | 40243528   | 195.19485 | ng    |
| 36) C16(153) #2                    | 26.94   | 31181408   | 139.56155 | ng    |
| 37) C15(105) #2                    | 27.21   | 7609101m   | 23.26166  | ng    |
| 38) C16(138) #2                    | 27.78   | 15061461   | 69.58145  | ng    |
| 39) C17(187) #2                    | 28.14   | 5073739m   | 20.02331  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7278.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0418\M7278.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:29 pm Operator: RR  
 Sample : M8155-P-D(4) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:12 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 6035009  | 16.98670 | ng    |
| 41) | C17(180) #2  | 29.59 | 7327007m | 23.87545 | ng    |
| 42) | C17(170) #2  | 30.22 | 5139702m | 14.99987 | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7281.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0418\M7281.D\ECD2B.CH  
 Acq On : 10-27-2014 02:43:03 PM Operator: RR  
 Sample : M8356-P-D(4) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3597548m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 8394196m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14517179m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 31795320m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 2810574     | 144.25536 | ng    |
| 3) C13(18)                         | 12.13   | e 6692119   | 431.19372 | ng    |
| 5) C13(28)                         | 14.20   | E 45569802  | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | E 21783042  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 7217715     | 164.26779 | ng    |
| 8) C14(66)                         | 18.62   | 4388801m    | 80.04752  | ng    |
| 9) C15(101)                        | 19.71   | 7419882     | 141.62470 | ng    |
| 12) C15(118)                       | 22.35   | 6239368m    | 104.61526 | ng    |
| 13) C16(153)                       | 23.43   | 8780918m    | 153.76373 | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.52   | 6122146m    | 81.07782  | ng    |
| 16) C17(187)                       | 25.29   | 1917292     | 26.91949  | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 27.16   | 1613298m    | 18.79501  | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 10954573m   | 120.58658 | ng    |
| 26) C13(18) #2                     | 15.00   | e 31644973  | 467.07564 | ng    |
| 28) C13(28) #2                     | 17.76   | E 124047121 | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | E 103987635 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 33920036    | 173.27789 | ng    |
| 31) C14(66) #2                     | 22.33   | 19853390m   | 84.33314  | ng    |
| 32) C15(101) #2                    | 23.45   | 32157507m   | 225.89947 | ng    |
| 35) C15(118) #2                    | 26.33   | 23271837m   | 116.51205 | ng    |
| 36) C16(153) #2                    | 26.94   | 34144666    | 161.57893 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.83   | 16593753m   | 80.59946  | ng    |
| 39) C17(187) #2                    | 28.14   | 7135062m    | 30.94235  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7281.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0418\M7281.D\ECD2B.CH  
 Acq On : 10-27-2014 02:43:03 PM Operator: RR  
 Sample : M8356-P-D(4) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:28 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 0.00  | 0d       | N.D.     | ng    |
| 41) | C17(180) #2  | 29.59 | 7095428m | 24.44178 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7282.D\ECD1A.CH Vial: 32  
 Signal #2 : I:\M\DATA\SM0418\M7282.D\ECD2B.CH  
 Acq On : 10-27-2014 03:27:38 PM Operator: RR  
 Sample : M8357-P-D(4) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:35 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3055648m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 4919129m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 16252217m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 33831910m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | e 6020286m  | BelowCal  | ng    |
| 3) C13(18)                         | 12.13   | E 14749305  | BelowCal  | ng    |
| 5) C13(28)                         | 14.20   | E 49645907  | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | E 41105142  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | e 12299243  | 450.05524 | ng    |
| 8) C14(66)                         | 18.64   | 5614602m    | 126.82864 | ng    |
| 9) C15(101)                        | 19.71   | 7425660     | 170.51848 | ng    |
| 12) C15(118)                       | 22.38   | 3774031m    | 108.32167 | ng    |
| 13) C16(153)                       | 23.42   | 8093784m    | 255.17269 | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.52   | 5909017m    | 138.22297 | ng    |
| 16) C17(187)                       | 25.29   | 2145745m    | 54.14676  | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 27.16   | 1229908m    | 25.06306  | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | e 34641095  | BelowCal  | ng    |
| 26) C13(18) #2                     | 15.00   | E 74230608  | BelowCal  | ng    |
| 28) C13(28) #2                     | 17.77   | E 147495913 | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | E 209746464 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | e 64627681  | 344.61363 | ng    |
| 31) C14(66) #2                     | 22.32   | 30598674m   | 119.38977 | ng    |
| 32) C15(101) #2                    | 23.45   | 46137482m   | 282.29154 | ng    |
| 35) C15(118) #2                    | 26.34   | 24523226    | 115.33365 | ng    |
| 36) C16(153) #2                    | 26.94   | 42813240    | 190.55746 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.83   | 22495493m   | 101.79111 | ng    |
| 39) C17(187) #2                    | 28.14   | 10434472    | 43.39337  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7282.D\ECD1A.CH Vial: 32  
 Signal #2 : I:\M\DATA\SM0418\M7282.D\ECD2B.CH  
 Acq On : 10-27-2014 03:27:38 PM Operator: RR  
 Sample : M8357-P-D(4) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:35 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 0.00  | 0d       | N.D.     | ng    |
| 41) | C17(180) #2  | 29.59 | 6301395m | 20.12774 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7283.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0418\M7283.D\ECD2B.CH  
 Acq On : 10-27-2014 04:12:07 PM Operator: RR  
 Sample : M8360-P-D(4) Inst : INST. M  
 Misc : NBH14-0220 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:41 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 3289085m  | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 8015995m  | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15128658  | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 36734170  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 485713m   | 20.69513  | ng    |
| 3) C13(18)                         | 12.13   | 1119327   | 42.44612  | ng    |
| 5) C13(28)                         | 14.20   | 5046998m  | 119.29524 | ng    |
| 6) C14(52)                         | 15.84   | 4304908   | 146.00482 | ng    |
| 7) C14(44)                         | 16.70   | 2078637   | 44.51147  | ng    |
| 8) C14(66)                         | 18.61   | 1896272m  | 35.07179  | ng    |
| 9) C15(101)                        | 19.72   | 3398893   | 66.67950  | ng    |
| 12) C15(118)                       | 22.39   | 3459059   | 57.82140  | ng    |
| 13) C16(153)                       | 23.42   | 3671090m  | 63.89114  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3450492m  | 46.22584  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 2180545m  | 18.95873  | ng    |
| 26) C13(18) #2                     | 15.00   | 5322922   | 43.70466  | ng    |
| 28) C13(28) #2                     | 17.76   | 25184101  | 120.36282 | ng    |
| 29) C14(52) #2                     | 19.15   | 19906594m | 172.89309 | ng    |
| 30) C14(44) #2                     | 19.96   | 9865528   | 42.40909  | ng    |
| 31) C14(66) #2                     | 22.34   | 7723926m  | 29.22726  | ng    |
| 32) C15(101) #2                    | 23.45   | 14852140m | 104.57846 | ng    |
| 35) C15(118) #2                    | 26.34   | 15945400  | 67.19604  | ng    |
| 36) C16(153) #2                    | 26.94   | 14729101  | 58.47243  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 8626080m  | 36.59751  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7283.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0418\M7283.D\ECD2B.CH  
 Acq On : 10-27-2014 04:12:07 PM Operator: RR  
 Sample : M8360-P-D(4) Inst : INST. M  
 Misc : NBH14-0220 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:41 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:33 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7284.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0418\M7284.D\ECD2B.CH  
 Acq On : 10-27-2014 04:56:42 PM Operator: RR  
 Sample : M8361-P-D(4) Inst : INST. M  
 Misc : NBH14-0224 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:45 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.    | Response | Conc     | Units |
|-----------------------------|---------|----------|----------|-------|
| Internal Standards          |         |          |          |       |
| 1) I C15(96)                | 17.39   | 2992240  | 95.00000 | ng    |
| 10) I C16(161)              | 23.21   | 6558205  | 95.00000 | ng    |
| 24) I C15(96) #2            | 20.52   | 15340131 | 95.00000 | ng    |
| 33) I C16(161) #2           | 26.79   | 35625740 | 95.00000 | ng    |
| System Monitoring Compounds |         |          |          |       |
| 4) s C13(34)                | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount               | 18.9997 | Recovery | =        | 0.00% |
| 11) s C16(152)              | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount               | 19.0757 | Recovery | =        | 0.00% |
| 27) s C13(34) #2            | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount               | 18.9997 | Recovery | =        | 0.00% |
| 34) s C16(152) #2           | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount               | 19.0757 | Recovery | =        | 0.00% |
| Target Compounds            |         |          |          |       |
| 2) C12(8)                   | 0.00    | 0d       | N.D.     | ng    |
| 3) C13(18)                  | 12.13   | 405264   | 13.49656 | ng    |
| 5) C13(28)                  | 14.20   | 953815m  | 20.96001 | ng    |
| 6) C14(52)                  | 15.84   | 1041977  | 30.50625 | ng    |
| 7) C14(44)                  | 0.00    | 0d       | N.D.     | ng    |
| 8) C14(66)                  | 0.00    | 0d       | N.D.     | ng    |
| 9) C15(101)                 | 0.00    | 0d       | N.D.     | ng    |
| 12) C15(118)                | 0.00    | 0d       | N.D.     | ng    |
| 13) C16(153)                | 0.00    | 0d       | N.D.     | ng    |
| 14) C15(105)                | 0.00    | 0d       | N.D.     | ng    |
| 15) C16(138)                | 0.00    | 0d       | N.D.     | ng    |
| 16) C17(187)                | 0.00    | 0d       | N.D.     | ng    |
| 17) C16(128)                | 0.00    | 0d       | N.D.     | ng    |
| 18) C17(180)                | 0.00    | 0d       | N.D.     | ng    |
| 19) C17(170)                | 0.00    | 0d       | N.D.     | ng    |
| 20) C18(195)                | 0.00    | 0d       | N.D.     | ng    |
| 21) C19(206)                | 0.00    | 0d       | N.D.     | ng    |
| 22) C110(209)               | 0.00    | 0d       | N.D.     | ng    |
| 25) C12(8) #2               | 0.00    | 0d       | N.D.     | ng    |
| 26) C13(18) #2              | 14.99   | 2135912m | 13.74759 | ng    |
| 28) C13(28) #2              | 17.76   | 5987036  | 24.90780 | ng    |
| 29) C14(52) #2              | 19.15   | 5527127m | 40.07457 | ng    |
| 30) C14(44) #2              | 0.00    | 0d       | N.D.     | ng    |
| 31) C14(66) #2              | 0.00    | 0d       | N.D.     | ng    |
| 32) C15(101) #2             | 0.00    | 0d       | N.D.     | ng    |
| 35) C15(118) #2             | 0.00    | 0d       | N.D.     | ng    |
| 36) C16(153) #2             | 0.00    | 0d       | N.D.     | ng    |
| 37) C15(105) #2             | 0.00    | 0d       | N.D.     | ng    |
| 38) C16(138) #2             | 0.00    | 0d       | N.D.     | ng    |
| 39) C17(187) #2             | 0.00    | 0d       | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7284.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0418\M7284.D\ECD2B.CH  
 Acq On : 10-27-2014 04:56:42 PM Operator: RR  
 Sample : M8361-P-D(4) Inst : INST. M  
 Misc : NBH14-0224 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:45 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7286.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0418\M7286.D\ECD2B.CH  
 Acq On : 10-27-2014 06:25:45 PM Operator: RR  
 Sample : M8362-P-D(4) Inst : INST. M  
 Misc : NBH14-0228 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:51 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 2943758m  | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 6367899m  | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14963886m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 34699727m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 634541    | 32.40328  | ng    |
| 3) C13(18)                         | 12.12   | 1528149   | 69.31808  | ng    |
| 5) C13(28)                         | 14.20   | 3487467m  | 89.19146  | ng    |
| 6) C14(52)                         | 15.83   | 3306042m  | 121.47909 | ng    |
| 7) C14(44)                         | 16.70   | 1484538   | 34.60340  | ng    |
| 8) C14(66)                         | 18.61   | 762723m   | 14.05082  | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 22.36   | 649447m   | 11.07961  | ng    |
| 13) C16(153)                       | 23.42   | 797360m   | 16.34890  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.10   | 3250734m  | 30.16035  | ng    |
| 26) C13(18) #2                     | 14.99   | 7880054m  | 69.57697  | ng    |
| 28) C13(28) #2                     | 17.76   | 19528574m | 92.04441  | ng    |
| 29) C14(52) #2                     | 19.15   | 18430909m | 159.59603 | ng    |
| 30) C14(44) #2                     | 19.96   | 7522110m  | 32.04185  | ng    |
| 31) C14(66) #2                     | 22.33   | 3632298m  | 12.72959  | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 26.33   | 3347603m  | 12.06395  | ng    |
| 36) C16(153) #2                    | 26.94   | 3916799m  | 13.68129  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7286.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0418\M7286.D\ECD2B.CH  
 Acq On : 10-27-2014 06:25:45 PM Operator: RR  
 Sample : M8362-P-D(4) Inst : INST. M  
 Misc : NBH14-0228 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:51 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7287.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0418\M7287.D\ECD2B.CH  
 Acq On : 10-27-2014 07:10:12 PM Operator: RR  
 Sample : M8363-P-D(4) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response   | Conc      | Units |
|------------------------------------|---------|------------|-----------|-------|
| <b>Internal Standards</b>          |         |            |           |       |
| 1) I C15(96)                       | 17.39   | 3086995    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 6755595m   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15614619m  | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 35348992m  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |            |           |       |
| 4) s C13(34)                       | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery   | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d         | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery   | =         | 0.00% |
| <b>Target Compounds</b>            |         |            |           |       |
| 2) C12(8)                          | 10.21   | 892352     | 45.41544  | ng    |
| 3) C13(18)                         | 12.13   | 2181455    | 99.46317  | ng    |
| 5) C13(28)                         | 14.20   | 7937030m   | 221.12721 | ng    |
| 6) C14(52)                         | 15.83   | e 6878455  | 295.34695 | ng    |
| 7) C14(44)                         | 16.70   | 3153129    | 75.82207  | ng    |
| 8) C14(66)                         | 18.62   | 2314774m   | 46.85723  | ng    |
| 9) C15(101)                        | 19.71   | 3740610    | 79.11873  | ng    |
| 12) C15(118)                       | 22.39   | 3587808    | 72.47260  | ng    |
| 13) C16(153)                       | 23.42   | 4318266m   | 90.73150  | ng    |
| 14) C15(105)                       | 0.00    | 0d         | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3893849    | 63.12127  | ng    |
| 16) C17(187)                       | 0.00    | 0d         | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d         | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d         | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d         | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d         | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d         | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d         | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 4466710m   | 40.91329  | ng    |
| 26) C13(18) #2                     | 14.99   | 11524439m  | 102.65028 | ng    |
| 28) C13(28) #2                     | 17.77   | 44650806   | 225.10787 | ng    |
| 29) C14(52) #2                     | 19.15   | e 41598647 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 18595287   | 81.23725  | ng    |
| 31) C14(66) #2                     | 22.34   | 12700342m  | 48.27776  | ng    |
| 32) C15(101) #2                    | 23.44   | 20385600m  | 137.88030 | ng    |
| 35) C15(118) #2                    | 26.34   | 21790582   | 97.31400  | ng    |
| 36) C16(153) #2                    | 26.94   | 20791504   | 87.36794  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d         | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 11047075   | 48.71040  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d         | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7287.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0418\M7287.D\ECD2B.CH  
 Acq On : 10-27-2014 07:10:12 PM Operator: RR  
 Sample : M8363-P-D(4) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:06:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7288.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0418\M7288.D\ECD2B.CH  
 Acq On : 10-27-2014 07:54:44 PM Operator: RR  
 Sample : M8368-P-D(4) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:03 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3094014m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 8070732m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15871908m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 37391478m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | e 4473516   | 358.27903 | ng    |
| 3) C13(18)                         | 12.13   | e 9149746   | BelowCal  | ng    |
| 5) C13(28)                         | 14.19   | E 42565413  | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | E 19108141  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | e 9741855   | 294.76985 | ng    |
| 8) C14(66)                         | 18.61   | 4987484m    | 109.27902 | ng    |
| 9) C15(101)                        | 19.72   | 9146418     | 214.28053 | ng    |
| 12) C15(118)                       | 22.39   | 7324314     | 130.42741 | ng    |
| 13) C16(153)                       | 23.42   | 8336426m    | 151.66074 | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 6541908     | 90.72409  | ng    |
| 16) C17(187)                       | 25.29   | 1505828     | 21.51024  | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 27.16   | 1555058     | 18.84768  | ng    |
| 19) C17(170)                       | 27.96   | 1198429m    | 12.38273  | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | e 26136102  | 332.79559 | ng    |
| 26) C13(18) #2                     | 14.99   | e 49306810  | BelowCal  | ng    |
| 28) C13(28) #2                     | 17.76   | E 135643635 | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | E 109700439 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 54161431    | 277.70728 | ng    |
| 31) C14(66) #2                     | 22.34   | 28670805m   | 114.09202 | ng    |
| 32) C15(101) #2                    | 23.45   | e 50670773m | 313.04694 | ng    |
| 35) C15(118) #2                    | 26.33   | 44217306    | 192.38588 | ng    |
| 36) C16(153) #2                    | 26.94   | 40756590m   | 164.02158 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.83   | 19538857m   | 80.69764  | ng    |
| 39) C17(187) #2                    | 28.14   | 7537353m    | 27.54558  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7288.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0418\M7288.D\ECD2B.CH  
 Acq On : 10-27-2014 07:54:44 PM Operator: RR  
 Sample : M8368-P-D(4) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:03 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:06:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 0.00  | 0d       | N.D.     | ng    |
| 41) | C17(180) #2  | 29.59 | 8434116m | 24.72221 | ng    |
| 42) | C17(170) #2  | 30.22 | 5547388m | 14.48826 | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0418\M7289.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0418\M7289.D\ECD2B.CH  
 Acq On : 10-27-2014 08:39:10 PM Operator: RR  
 Sample : M8369-P-D(4) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:09 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:07:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3251142m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 7835514m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14761140m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 34597478m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 1388570     | 70.88733  | ng    |
| 3) C13(18)                         | 12.13   | 3860656     | 190.08752 | ng    |
| 5) C13(28)                         | 14.20   | e 10939262m | 320.50787 | ng    |
| 6) C14(52)                         | 15.83   | e 11558861  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 4426253     | 104.67787 | ng    |
| 8) C14(66)                         | 18.62   | 2729073m    | 53.03931  | ng    |
| 9) C15(101)                        | 19.71   | 4576450     | 93.03111  | ng    |
| 12) C15(118)                       | 22.36   | 3537979m    | 60.74518  | ng    |
| 13) C16(153)                       | 23.42   | 5270923m    | 95.76888  | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 4013347m    | 55.66186  | ng    |
| 16) C17(187)                       | 0.00    | 0d          | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d          | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d          | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 6507041m    | 65.89564  | ng    |
| 26) C13(18) #2                     | 15.00   | 18799732    | 198.20143 | ng    |
| 28) C13(28) #2                     | 17.76   | e 62816043  | 382.62206 | ng    |
| 29) C14(52) #2                     | 19.15   | e 56882513m | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 22065153    | 104.26045 | ng    |
| 31) C14(66) #2                     | 22.33   | 13080848m   | 52.92396  | ng    |
| 32) C15(101) #2                    | 23.45   | 21433485m   | 152.57886 | ng    |
| 35) C15(118) #2                    | 26.33   | 17944121m   | 81.13439  | ng    |
| 36) C16(153) #2                    | 26.94   | 21897437    | 94.24930  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 7622060     | 34.31635  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d          | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7289.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0418\M7289.D\ECD2B.CH  
 Acq On : 10-27-2014 08:39:10 PM Operator: RR  
 Sample : M8369-P-D(4) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:09 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:07:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7290.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0418\M7290.D\ECD2B.CH  
 Acq On : 10-27-2014 09:23:42 PM Operator: RR  
 Sample : M8370-P-D(4) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:15 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:07:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3217440m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 7679457m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15166553m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 35188862m   | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | 2624806m    | 152.21868 | ng    |
| 3) C13(18)                         | 12.13   | e 6576247   | BelowCal  | ng    |
| 5) C13(28)                         | 14.19   | e 15550142m | BelowCal  | ng    |
| 6) C14(52)                         | 15.83   | E 17413342  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | 5429760     | 133.92590 | ng    |
| 8) C14(66)                         | 18.61   | 3192231m    | 63.73143  | ng    |
| 9) C15(101)                        | 19.71   | 5432419     | 113.45335 | ng    |
| 12) C15(118)                       | 22.38   | 4614092m    | 82.89528  | ng    |
| 13) C16(153)                       | 23.42   | 6602602m    | 124.39426 | ng    |
| 14) C15(105)                       | 23.46   | 1448610m    | 18.50063  | ng    |
| 15) C16(138)                       | 24.53   | 5566239m    | 80.54467  | ng    |
| 16) C17(187)                       | 25.29   | 1195110     | 17.52212  | ng    |
| 17) C16(128)                       | 25.62   | 1146142     | 15.82432  | ng    |
| 18) C17(180)                       | 27.16   | 1248498m    | 15.59263  | ng    |
| 19) C17(170)                       | 0.00    | 0d          | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 12950085m   | 139.26039 | ng    |
| 26) C13(18) #2                     | 14.99   | e 33003920  | 464.92576 | ng    |
| 28) C13(28) #2                     | 17.76   | e 84524117  | 676.81529 | ng    |
| 29) C14(52) #2                     | 19.15   | E 90323481  | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 28117569    | 132.67247 | ng    |
| 31) C14(66) #2                     | 22.33   | 17086228m   | 68.45595  | ng    |
| 32) C15(101) #2                    | 23.45   | 22276525m   | 154.24810 | ng    |
| 35) C15(118) #2                    | 26.33   | 23745379m   | 107.00283 | ng    |
| 36) C16(153) #2                    | 26.94   | 25286510    | 107.40015 | ng    |
| 37) C15(105) #2                    | 27.20   | 6975916m    | 20.11902  | ng    |
| 38) C16(138) #2                    | 27.78   | 13226820    | 58.47496  | ng    |
| 39) C17(187) #2                    | 28.14   | 5322105m    | 20.03408  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7290.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0418\M7290.D\ECD2B.CH  
 Acq On : 10-27-2014 09:23:42 PM Operator: RR  
 Sample : M8370-P-D(4) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 10:07:15 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 10:07:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 5832487m | 15.50304 | ng    |
| 41) | C17(180) #2  | 29.59 | 6054865m | 18.46539 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7326.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0419\M7326.D\ECD2B.CH  
 Acq On : 10-29-2014 05:15:30 PM Operator: RR  
 Sample : M8152-P-D(5) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:02 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:19:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response | Conc      | Units |
|------------------------------------|--------|----------|-----------|-------|
| <b>Internal Standards</b>          |        |          |           |       |
| 1) I C15(96)                       | 17.40  | 2767041  | 100.00000 | ng    |
| 10) I C16(161)                     | 23.22  | 5696514  | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15194168 | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 35447285 | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |          |           |       |
| 4) s C13(34)                       | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery | =         | 0.00% |
| <b>Target Compounds</b>            |        |          |           |       |
| 2) C12(8)                          | 0.00   | 0d       | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d       | N.D.      | ng    |
| 5) C13(28)                         | 14.20  | 495127m  | 11.19905  | ng    |
| 6) C14(52)                         | 15.84  | 478900m  | 12.52177  | ng    |
| 7) C14(44)                         | 0.00   | 0d       | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d       | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d       | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d       | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d       | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d       | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d       | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d       | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d       | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d       | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d       | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d       | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d       | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d       | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d       | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d       | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 3420888m | 14.13723  | ng    |
| 29) C14(52) #2                     | 19.15  | 2642112m | 18.60048  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d       | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d       | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d       | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d       | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d       | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d       | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d       | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d       | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7326.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0419\M7326.D\ECD2B.CH  
 Acq On : 10-29-2014 05:15:30 PM Operator: RR  
 Sample : M8152-P-D(5) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:02 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:19:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7327.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0419\M7327.D\ECD2B.CH  
 Acq On : 10-29-2014 06:00:05 PM Operator: RR  
 Sample : M8153-P-D(5) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc      | Units |
|-----------------------------|--------|-----------|-----------|-------|
| Internal Standards          |        |           |           |       |
| 1) I C15(96)                | 17.39  | 2816223   | 100.00000 | ng    |
| 10) I C16(161)              | 23.22  | 6320722   | 100.00000 | ng    |
| 24) I C15(96) #2            | 20.52  | 14969586m | 100.00000 | ng    |
| 33) I C16(161) #2           | 26.79  | 36607115  | 100.00000 | ng    |
| System Monitoring Compounds |        |           |           |       |
| 4) s C13(34)                | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)              | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2            | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2           | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery  | =         | 0.00% |
| Target Compounds            |        |           |           |       |
| 2) C12(8)                   | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                  | 12.13  | 194519    | 4.72131   | ng    |
| 5) C13(28)                  | 14.19  | 723342m   | 17.23025  | ng    |
| 6) C14(52)                  | 15.84  | 674689    | 19.88524  | ng    |
| 7) C14(44)                  | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                  | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                 | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)               | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2               | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2              | 14.99  | 1043532m  | 4.49867   | ng    |
| 28) C13(28) #2              | 17.76  | 4350267m  | 18.90402  | ng    |
| 29) C14(52) #2              | 19.15  | 3801139m  | 28.61298  | ng    |
| 30) C14(44) #2              | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2              | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2             | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2             | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2             | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2             | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2             | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2             | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7327.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0419\M7327.D\ECD2B.CH  
 Acq On : 10-29-2014 06:00:05 PM Operator: RR  
 Sample : M8153-P-D(5) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:06 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0419\M7328.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0419\M7328.D\ECD2B.CH  
 Acq On : 10-29-2014 06:44:43 PM Operator: RR  
 Sample : M8154-P-D(5) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 2949879   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6663226   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15313576m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 36886426  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 14.19  | 831062m   | 19.16796  | ng    |
| 6) C14(52)                         | 15.83  | 808497m   | 23.74137  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 5118309m  | 22.09699  | ng    |
| 29) C14(52) #2                     | 19.15  | 4390921m  | 32.76576  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7328.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0419\M7328.D\ECD2B.CH  
 Acq On : 10-29-2014 06:44:43 PM Operator: RR  
 Sample : M8154-P-D(5) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:11 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7329.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0419\M7329.D\ECD2B.CH  
 Acq On : 10-29-2014 07:29:22 PM Operator: RR  
 Sample : M8155-P-D(5) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:16 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 2990561   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.22  | 6552986   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 14533596m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 33301359  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 12.13  | 336953    | 10.93312  | ng    |
| 5) C13(28)                         | 14.19  | 967863m   | 22.44533  | ng    |
| 6) C14(52)                         | 15.83  | 769131m   | 21.85060  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 14.99  | 1788655m  | 12.13819  | ng    |
| 28) C13(28) #2                     | 17.76  | 5725981m  | 26.49133  | ng    |
| 29) C14(52) #2                     | 19.15  | 3856955m  | 30.05998  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7329.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0419\M7329.D\ECD2B.CH  
 Acq On : 10-29-2014 07:29:22 PM Operator: RR  
 Sample : M8155-P-D(5) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:20:16 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7330.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0419\M7330.D\ECD2B.CH  
 Acq On : 10-29-2014 08:13:52 PM Operator: RR  
 Sample : M8356-P-D(5) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:42 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc      | Units |
|-----------------------------|--------|-----------|-----------|-------|
| Internal Standards          |        |           |           |       |
| 1) I C15(96)                | 17.39  | 2938650   | 100.00000 | ng    |
| 10) I C16(161)              | 23.22  | 6671910m  | 100.00000 | ng    |
| 24) I C15(96) #2            | 20.52  | 14948996m | 100.00000 | ng    |
| 33) I C16(161) #2           | 26.79  | 36016798  | 100.00000 | ng    |
| System Monitoring Compounds |        |           |           |       |
| 4) s C13(34)                | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)              | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2            | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2           | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery  | =         | 0.00% |
| Target Compounds            |        |           |           |       |
| 2) C12(8)                   | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                  | 12.13  | 432556    | 15.90589  | ng    |
| 5) C13(28)                  | 14.19  | 1363470m  | 33.54219  | ng    |
| 6) C14(52)                  | 15.83  | 1343159   | 44.61563  | ng    |
| 7) C14(44)                  | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                  | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                 | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)               | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2               | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2              | 14.99  | 2375929m  | 17.32569  | ng    |
| 28) C13(28) #2              | 17.76  | 7916178m  | 36.55531  | ng    |
| 29) C14(52) #2              | 19.15  | 7288467m  | 58.83734  | ng    |
| 30) C14(44) #2              | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2              | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2             | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2             | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2             | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2             | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2             | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2             | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7330.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0419\M7330.D\ECD2B.CH  
 Acq On : 10-29-2014 08:13:52 PM Operator: RR  
 Sample : M8356-P-D(5) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:42 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:20:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7331.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0419\M7331.D\ECD2B.CH  
 Acq On : 10-29-2014 08:58:26 PM Operator: RR  
 Sample : M8357-P-D(5) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:47 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 3048346   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6679027   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15083826m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 36224030m | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 10.21  | 423418    | 20.21290  | ng    |
| 3) C13(18)                         | 12.13  | 1070238   | 46.33658  | ng    |
| 5) C13(28)                         | 14.19  | 1477388m  | 35.19331  | ng    |
| 6) C14(52)                         | 15.84  | 2712828   | 97.24455  | ng    |
| 7) C14(44)                         | 16.70  | 816087    | 17.54298  | ng    |
| 8) C14(66)                         | 18.64  | 470404m   | 7.64480   | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11  | 2298282m  | 21.27309  | ng    |
| 26) C13(18) #2                     | 14.99  | 5613598m  | 49.10640  | ng    |
| 28) C13(28) #2                     | 17.76  | 9438439m  | 43.77720  | ng    |
| 29) C14(52) #2                     | 19.15  | 14421644m | 124.83199 | ng    |
| 30) C14(44) #2                     | 19.96  | 4514081m  | 19.13978  | ng    |
| 31) C14(66) #2                     | 22.32  | 2342307m  | 7.80041   | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7331.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0419\M7331.D\ECD2B.CH  
 Acq On : 10-29-2014 08:58:26 PM Operator: RR  
 Sample : M8357-P-D(5) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:47 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0419\M7332.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0419\M7332.D\ECD2B.CH  
 Acq On : 10-29-2014 09:42:55 PM Operator: RR  
 Sample : M8368-P-D(5) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:52 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 2889515   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.22  | 6150244m  | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15093250m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 35486816  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 10.21  | 324385    | 15.47054  | ng    |
| 3) C13(18)                         | 12.13  | 686391    | 29.15797  | ng    |
| 5) C13(28)                         | 14.19  | 1378029m  | 34.57420  | ng    |
| 6) C14(52)                         | 15.83  | 1360617   | 46.22182  | ng    |
| 7) C14(44)                         | 16.70  | 684433    | 15.12155  | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11  | 1781725m  | 15.80456  | ng    |
| 26) C13(18) #2                     | 14.99  | 3886942m  | 31.81414  | ng    |
| 28) C13(28) #2                     | 17.76  | 8921847m  | 41.17014  | ng    |
| 29) C14(52) #2                     | 19.15  | 7639106m  | 61.30837  | ng    |
| 30) C14(44) #2                     | 19.96  | 3898083m  | 16.23532  | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7332.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0419\M7332.D\ECD2B.CH  
 Acq On : 10-29-2014 09:42:55 PM Operator: RR  
 Sample : M8368-P-D(5) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:52 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7333.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0419\M7333.D\ECD2B.CH  
 Acq On : 29 Oct 2014 10:27 pm Operator: RR  
 Sample : M8369-P-D(5) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.39  | 2821161   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 5961579   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15506392m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 36969050  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 14.20  | 736885m   | 17.56870  | ng    |
| 6) C14(52)                         | 15.83  | 737422    | 22.32053  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 4332510m  | 18.08600  | ng    |
| 29) C14(52) #2                     | 19.15  | 4340679m  | 31.90202  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7333.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0419\M7333.D\ECD2B.CH  
 Acq On : 29 Oct 2014 10:27 pm Operator: RR  
 Sample : M8369-P-D(5) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:24:57 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7334.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0419\M7334.D\ECD2B.CH  
 Acq On : 29 Oct 2014 11:11 pm Operator: RR  
 Sample : M8370-P-D(5) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:02 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response | Conc      | Units |
|-----------------------------|--------|----------|-----------|-------|
| Internal Standards          |        |          |           |       |
| 1) I C15(96)                | 17.40  | 2973108  | 100.00000 | ng    |
| 10) I C16(161)              | 23.21  | 6464020  | 100.00000 | ng    |
| 24) I C15(96) #2            | 20.52  | 15005989 | 100.00000 | ng    |
| 33) I C16(161) #2           | 26.79  | 34778869 | 100.00000 | ng    |
| System Monitoring Compounds |        |          |           |       |
| 4) s C13(34)                | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery | =         | 0.00% |
| 11) s C16(152)              | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery | =         | 0.00% |
| 27) s C13(34) #2            | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount               | 1.0000 | Recovery | =         | 0.00% |
| 34) s C16(152) #2           | 0.00   | 0d       | N.D.      | ng    |
| Spiked Amount               | 1.0040 | Recovery | =         | 0.00% |
| Target Compounds            |        |          |           |       |
| 2) C12(8)                   | 0.00   | 0d       | N.D.      | ng    |
| 3) C13(18)                  | 12.12  | 450104   | 16.51365  | ng    |
| 5) C13(28)                  | 14.19  | 801989m  | 18.23419  | ng    |
| 6) C14(52)                  | 15.83  | 1145283  | 36.33151  | ng    |
| 7) C14(44)                  | 0.00   | 0d       | N.D.      | ng    |
| 8) C14(66)                  | 0.00   | 0d       | N.D.      | ng    |
| 9) C15(101)                 | 0.00   | 0d       | N.D.      | ng    |
| 12) C15(118)                | 0.00   | 0d       | N.D.      | ng    |
| 13) C16(153)                | 0.00   | 0d       | N.D.      | ng    |
| 14) C15(105)                | 0.00   | 0d       | N.D.      | ng    |
| 15) C16(138)                | 0.00   | 0d       | N.D.      | ng    |
| 16) C17(187)                | 0.00   | 0d       | N.D.      | ng    |
| 17) C16(128)                | 0.00   | 0d       | N.D.      | ng    |
| 18) C17(180)                | 0.00   | 0d       | N.D.      | ng    |
| 19) C17(170)                | 0.00   | 0d       | N.D.      | ng    |
| 20) C18(195)                | 0.00   | 0d       | N.D.      | ng    |
| 21) C19(206)                | 0.00   | 0d       | N.D.      | ng    |
| 22) C110(209)               | 0.00   | 0d       | N.D.      | ng    |
| 25) C12(8) #2               | 0.00   | 0d       | N.D.      | ng    |
| 26) C13(18) #2              | 14.99  | 2419388m | 17.65874  | ng    |
| 28) C13(28) #2              | 17.76  | 6035246  | 27.09686  | ng    |
| 29) C14(52) #2              | 19.15  | 6172294m | 48.80353  | ng    |
| 30) C14(44) #2              | 0.00   | 0d       | N.D.      | ng    |
| 31) C14(66) #2              | 0.00   | 0d       | N.D.      | ng    |
| 32) C15(101) #2             | 0.00   | 0d       | N.D.      | ng    |
| 35) C15(118) #2             | 0.00   | 0d       | N.D.      | ng    |
| 36) C16(153) #2             | 0.00   | 0d       | N.D.      | ng    |
| 37) C15(105) #2             | 0.00   | 0d       | N.D.      | ng    |
| 38) C16(138) #2             | 0.00   | 0d       | N.D.      | ng    |
| 39) C17(187) #2             | 0.00   | 0d       | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7334.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0419\M7334.D\ECD2B.CH  
 Acq On : 29 Oct 2014 11:11 pm Operator: RR  
 Sample : M8370-P-D(5) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:02 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:24:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7335.D\ECD1A.CH Vial: 43  
 Signal #2 : I:\M\DATA\SM0419\M7335.D\ECD2B.CH  
 Acq On : 29 Oct 2014 11:56 pm Operator: RR  
 Sample : M8400-P-D(5) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:07 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 3085883   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6875052   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15428932m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 36527958  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 14.19  | 653123m   | 13.72453  | ng    |
| 6) C14(52)                         | 15.83  | 962666    | 28.00302  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 4178141m  | 17.45859  | ng    |
| 29) C14(52) #2                     | 19.15  | 5039449m  | 37.85361  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7335.D\ECD1A.CH Vial: 43  
 Signal #2 : I:\M\DATA\SM0419\M7335.D\ECD2B.CH  
 Acq On : 29 Oct 2014 11:56 pm Operator: RR  
 Sample : M8400-P-D(5) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:07 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0419\M7337.D\ECD1A.CH Vial: 45  
 Signal #2 : I:\M\DATA\SM0419\M7337.D\ECD2B.CH  
 Acq On : 10-30-2014 01:25:38 AM Operator: RR  
 Sample : M8401-P-D(5) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:13 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 3115868   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6757821m  | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 16535400m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 38967966  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 12.12  | 931540    | 38.37474  | ng    |
| 5) C13(28)                         | 14.20  | 1959777m  | 46.84057  | ng    |
| 6) C14(52)                         | 15.83  | 2887793   | 101.96966 | ng    |
| 7) C14(44)                         | 16.70  | 872042    | 18.49975  | ng    |
| 8) C14(66)                         | 18.65  | 589339m   | 10.01135  | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 23.42  | 742859m   | 14.96272  | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 14.99  | 5248037m  | 40.78076  | ng    |
| 28) C13(28) #2                     | 17.76  | 12920925m | 55.61415  | ng    |
| 29) C14(52) #2                     | 19.15  | 16289148m | 129.20135 | ng    |
| 30) C14(44) #2                     | 19.96  | 5172366m  | 20.10152  | ng    |
| 31) C14(66) #2                     | 22.32  | 2917420m  | 9.15132   | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 26.94  | 4512313   | 14.88112  | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7337.D\ECD1A.CH Vial: 45  
 Signal #2 : I:\M\DATA\SM0419\M7337.D\ECD2B.CH  
 Acq On : 10-30-2014 01:25:38 AM Operator: RR  
 Sample : M8401-P-D(5) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:13 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7338.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0419\M7338.D\ECD2B.CH  
 Acq On : 10-30-2014 02:10:06 AM Operator: RR  
 Sample : M8402-P-D(5) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:18 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units        |
|------------------------------------|--------|-----------|-----------|--------------|
| <b>Internal Standards</b>          |        |           |           |              |
| 1) I C15(96)                       | 17.39  | 3622059   | 100.00000 | ng           |
| 10) I C16(161)                     | 23.21  | 7357294   | 100.00000 | ng           |
| 24) I C15(96) #2                   | 20.51  | 16322694m | 100.00000 | ng           |
| 33) I C16(161) #2                  | 26.79  | 38141330  | 100.00000 | ng           |
| <b>System Monitoring Compounds</b> |        |           |           |              |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng           |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00%        |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng           |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00%        |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng           |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00%        |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng           |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00%        |
| <b>Target Compounds</b>            |        |           |           |              |
| 2) C12(8)                          | 10.21  | e         | 5804282   | BelowCal ng  |
| 3) C13(18)                         | 12.13  | e         | 8073517   | BelowCal ng  |
| 5) C13(28)                         | 14.19  |           | 8423359m  | 205.13856 ng |
| 6) C14(52)                         | 15.83  | E         | 13304017  | BelowCal ng  |
| 7) C14(44)                         | 16.70  |           | 5334887   | 120.51098 ng |
| 8) C14(66)                         | 18.63  |           | 914989m   | 14.34605 ng  |
| 9) C15(101)                        | 19.71  |           | 1870141   | 33.40535 ng  |
| 12) C15(118)                       | 22.36  |           | 1032722m  | 17.25701 ng  |
| 13) C16(153)                       | 23.42  |           | 1614783m  | 31.15976 ng  |
| 14) C15(105)                       | 0.00   |           | 0d        | N.D. ng      |
| 15) C16(138)                       | 24.52  |           | 1751015   | 25.56415 ng  |
| 16) C17(187)                       | 0.00   |           | 0d        | N.D. ng      |
| 17) C16(128)                       | 0.00   |           | 0d        | N.D. ng      |
| 18) C17(180)                       | 0.00   |           | 0d        | N.D. ng      |
| 19) C17(170)                       | 0.00   |           | 0d        | N.D. ng      |
| 20) C18(195)                       | 0.00   |           | 0d        | N.D. ng      |
| 21) C19(206)                       | 0.00   |           | 0d        | N.D. ng      |
| 22) C110(209)                      | 0.00   |           | 0d        | N.D. ng      |
| 25) C12(8) #2                      | 13.11  | e         | 31938340  | 501.35299 ng |
| 26) C13(18) #2                     | 14.99  | e         | 42113588  | BelowCal ng  |
| 28) C13(28) #2                     | 17.76  |           | 38841975  | 190.27244 ng |
| 29) C14(52) #2                     | 19.15  | E         | 70633094  | BelowCal ng  |
| 30) C14(44) #2                     | 19.96  |           | 28635051m | 131.21065 ng |
| 31) C14(66) #2                     | 22.33  |           | 5295427m  | 18.66080 ng  |
| 32) C15(101) #2                    | 23.45  |           | 5641814m  | 37.37637 ng  |
| 35) C15(118) #2                    | 26.33  |           | 5003970   | 18.62911 ng  |
| 36) C16(153) #2                    | 26.93  |           | 8945264   | 34.36239 ng  |
| 37) C15(105) #2                    | 0.00   |           | 0d        | N.D. ng      |
| 38) C16(138) #2                    | 27.83  |           | 6114965m  | 26.13747 ng  |
| 39) C17(187) #2                    | 0.00   |           | 0d        | N.D. ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7338.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0419\M7338.D\ECD2B.CH  
 Acq On : 10-30-2014 02:10:06 AM Operator: RR  
 Sample : M8402-P-D(5) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:18 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7339.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0419\M7339.D\ECD2B.CH  
 Acq On : 10-30-2014 02:54:40 AM Operator: RR  
 Sample : M8404-P-D(5) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:25 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 3100391   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6862649   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 15509030m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 36256897  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 14.19  | 480320m   | 9.35110   | ng    |
| 6) C14(52)                         | 15.83  | 497462    | 11.13409  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 2500759m  | 9.51194   | ng    |
| 29) C14(52) #2                     | 19.15  | 2426075m  | 16.43776  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7339.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0419\M7339.D\ECD2B.CH  
 Acq On : 10-30-2014 02:54:40 AM Operator: RR  
 Sample : M8404-P-D(5) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:25 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7340.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0419\M7340.D\ECD2B.CH  
 Acq On : 10-30-2014 03:39:07 AM Operator: RR  
 Sample : M8405-P-D(5) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:31 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.39  | 3030324   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6863940   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 16042110m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 38881919m | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 14.19  | 417313m   | 8.02998   | ng    |
| 6) C14(52)                         | 15.83  | 555104    | 13.63557  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 17.76  | 2735789m  | 10.18289  | ng    |
| 29) C14(52) #2                     | 19.14  | 2999913m  | 20.22970  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0419\M7340.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0419\M7340.D\ECD2B.CH  
 Acq On : 10-30-2014 03:39:07 AM Operator: RR  
 Sample : M8405-P-D(5) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 30 14:25:31 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Oct 30 14:25:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7365.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0420\M7365.D\ECD2B.CH  
 Acq On : 31 Oct 2014 11:34 am Operator: RR  
 Sample : M8402-P-D(7) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:23 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Oct 31 15:57:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.39  | 2245288   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 4957816   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.51  | 11702570m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 26308241  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 0.1000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 0.1004 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 0.1000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 0.1004 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 10.21  | 648547    | 47.76413  | ng    |
| 3) C13(18)                         | 12.13  | 914087    | 55.04644  | ng    |
| 5) C13(28)                         | 0.00   | 0d        | N.D.      | ng    |
| 6) C14(52)                         | 15.83  | 1394085m  | 63.95758  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.10  | 3408356m  | 43.92901  | ng    |
| 26) C13(18) #2                     | 14.99  | 4823005m  | 55.25655  | ng    |
| 28) C13(28) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 29) C14(52) #2                     | 19.14  | 7176623m  | 75.77520  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7365.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0420\M7365.D\ECD2B.CH  
 Acq On : 31 Oct 2014 11:34 am Operator: RR  
 Sample : M8402-P-D(7) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 31 15:57:23 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Oct 31 15:57:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7613.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0424\M7613.D\ECD2B.CH  
 Acq On : 11-15-2014 04:28:03 PM Operator: RR  
 Sample : M8363-P-D(5) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:21:59 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.39  | 2862754m  | 100.00000 | ng    |
| 10) I C16(161)                     | 23.21  | 6512860   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.51  | 15556028m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 37851303  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 0.00   | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 0.00   | 0d        | N.D.      | ng    |
| 5) C13(28)                         | 0.00   | 0d        | N.D.      | ng    |
| 6) C14(52)                         | 15.83  | 575078m   | 15.59042  | ng    |
| 7) C14(44)                         | 0.00   | 0d        | N.D.      | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00   | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 28) C13(28) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 29) C14(52) #2                     | 19.14  | 2881164m  | 20.00700  | ng    |
| 30) C14(44) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7613.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0424\M7613.D\ECD2B.CH  
 Acq On : 11-15-2014 04:28:03 PM Operator: RR  
 Sample : M8363-P-D(5) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 17 08:21:59 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 17 08:21:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0418\M7253.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0418\M7253.D\ECD2B.CH  
 Acq On : 10-26-2014 09:43:06 AM Operator: RR  
 Sample : CD580PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:35:59 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 2558363   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14176081m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 0.00  | 0d        | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d        | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7253.D MM0417F.M Fri Dec 05 16:13:46 2014

Signal #1 : I:\M\DATA\SM0418\M7254.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0418\M7254.D\ECD2B.CH  
 Acq On : 26 Oct 2014 10:27 am Operator: RR  
 Sample : CD581LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:36:04 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:35:58 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.40 | 2768412   | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.52 | 13871209m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.74 | 1091741m  | 24.42193  | ng    | 65% |
| 5) C15(101) #2     | 23.23 | 8713276m  | 29.69495  | ng    | 79% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7254.D MM0417F.M Fri Dec 05 16:13:48 2014

Signal #1 : I:\M\DATA\SM0418\M7259.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0418\M7259.D\ECD2B.CH  
 Acq On : 10-26-2014 02:10:27 PM Operator: RR  
 Sample : M8167-P(2) Inst : INST. M  
 Misc : NBH14-0065 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:36:23 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:36:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3596020   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.53 | 15625241m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1958621   | 32.80975 | ng    |
| 5) C15(101) #2     | 23.24 | 10089897m | 29.00118 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7259.D MM0417F.M Fri Dec 05 16:13:50 2014

Data File : I:\M\DATA\SM0418\M7260.D\ECD1A.CH Vial: 10  
 Acq On : 10-26-2014 02:55:00 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0065 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7260.D\ECD2B.CH Vial: 10  
 Acq On : 10-26-2014 02:54:59 PM Operator: RR  
 Sample : M8167DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Dec 05 15:36:28 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:36:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3374379   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17007082m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1715028   | 30.47553 | ng    |
| 5) C15(101) #2     | 23.24 | 10307190m | 27.21856 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7260.D MM0417F.M Fri Dec 05 16:13:52 2014



Signal #1 : I:\M\DATA\SM0418\M7266.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0418\M7266.D\ECD2B.CH  
 Acq On : 10-26-2014 07:22:23 PM Operator: RR  
 Sample : M8362-P(2) Inst : INST. M  
 Misc : NBH14-0228 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:36:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:36:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 2960462m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.53 | 12375657  | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 10579141  | 243.91661 | ng    |
| 5) C15(101) #2     | 23.24 | 50764233m | 250.13210 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7266.D MM0417F.M Fri Dec 05 16:13:55 2014

Signal #1 : I:\M\DATA\SM0418\M7271.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0418\M7271.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:04 pm Operator: RR  
 Sample : M8387-P(2) Inst : INST. M  
 Misc : NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:37:10 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3096478   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14299959m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 482148    | 8.08461  | ng    |
| 5) C15(101) #2     | 23.23 | 2204458m  | 7.49012  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7271.D MM0417F.M Fri Dec 05 16:13:57 2014

Signal #1 : I:\M\DATA\SM0418\M7272.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0418\M7272.D\ECD2B.CH  
 Acq On : 26 Oct 2014 11:49 pm Operator: RR  
 Sample : M8387MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0101 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:37:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 2881746   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 13714712m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 1911209m  | 42.56604  | ng    |
| 5) C15(101) #2     | 23.23 | 13535792m | 47.04471  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7272.D MM0417F.M Fri Dec 05 16:13:59 2014

Signal #1 : I:\M\DATA\SM0418\M7273.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0418\M7273.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:34 am Operator: RR  
 Sample : M8387MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0101 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:37:19 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3284342m  | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 13812909m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 2129909m  | 41.56732  | ng    |
| 5) C15(101) #2     | 23.23 | 13448412m | 46.38524  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7273.D MM0417F.M Fri Dec 05 16:14:01 2014

Data File : I:\M\DATA\SM0418\M7274F.D\ECD1A.CH Vial: 48  
 Acq On : 10-27-2014 05:47:48 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : NBH14-0153 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274F.D\ECD2B.CH Vial: 48  
 Acq On : 10-27-2014 05:47:47 AM Operator: RR  
 Sample : M8400-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Dec 05 15:37:44 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3575964   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16725519  | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 4568162   | 80.68919 | ng    |
| 5) C15(101) #2     | 23.23 | 27241077m | 76.24587 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7274F.D MM0417F.M Fri Dec 05 16:14:03 2014

Data File : I:\M\DATA\SM0418\M7274G.D\ECD1A.CH Vial: 49  
 Acq On : 10-27-2014 06:32:31 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : NBH14-0157 5-128 14-0493 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0418\M7274G.D\ECD2B.CH Vial: 49  
 Acq On : 10-27-2014 06:32:32 AM Operator: RR  
 Sample : M8401-P-D(4) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e  
 Quant Time: Dec 05 15:37:49 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3061896m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 17016023m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 10022778  | 221.25406 | ng    |
| 5) C15(101) #2     | 23.23 | 56638407m | 180.56721 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274G.D MM0417F.M Fri Dec 05 16:14:05 2014

Signal #1 : I:\M\DATA\SM0418\M7274I.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0418\M7274I.D\ECD2B.CH  
 Acq On : 10-27-2014 08:02:03 AM Operator: RR  
 Sample : M8404-P-D(4) Inst : INST. M  
 Misc : NBH14-0169 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:37:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3564547   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16416173m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 4081198m  | 71.89879 | ng    |
| 5) C15(101) #2     | 23.23 | 22533918m | 63.30423 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274I.D MM0417F.M Fri Dec 05 16:14:07 2014

Signal #1 : I:\M\DATA\SM0418\M7274J.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0418\M7274J.D\ECD2B.CH  
 Acq On : 10-27-2014 08:46:39 AM Operator: RR  
 Sample : M8405-P-D(4) Inst : INST. M  
 Misc : NBH14-0173 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:01 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3234848   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15400055  | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 3674441m  | 71.30076 | ng    |
| 5) C15(101) #2     | 23.23 | 20559725m | 61.44403 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7274J.D MM0417F.M Fri Dec 05 16:14:09 2014



Signal #1 : I:\M\DATA\SM0418\M7275.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0418\M7275.D\ECD2B.CH  
 Acq On : 27 Oct 2014 10:15 am Operator: RR  
 Sample : M8152-P-D(4) Inst : INST. M  
 Misc : NBH14-0001 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:05 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:37:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3406914   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15026665  | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 4135493   | 76.46230 | ng    |
| 5) C15(101) #2     | 23.23 | 19547334m | 59.76190 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7275.D MM0417F.M Fri Dec 05 16:14:12 2014

Signal #1 : I:\M\DATA\SM0418\M7276.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0418\M7276.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:00 am Operator: RR  
 Sample : M8153-P-D(4) Inst : INST. M  
 Misc : NBH14-0005 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:08 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3482089   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 15771960m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 5756299   | 105.94153 | ng    |
| 5) C15(101) #2     | 23.23 | 31343955m | 95.28765  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7276.D MM0417F.M Fri Dec 05 16:14:14 2014

Signal #1 : I:\M\DATA\SM0418\M7277.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0418\M7277.D\ECD2B.CH  
 Acq On : 27 Oct 2014 11:44 am Operator: RR  
 Sample : M8154-P-D(4) Inst : INST. M  
 Misc : NBH14-0009 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:12 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3506862   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14149338m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 6776515m  | 125.04715 | ng    |
| 5) C15(101) #2     | 23.23 | 32225457m | 111.60950 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7277.D MM0417F.M Fri Dec 05 16:14:16 2014

Signal #1 : I:\M\DATA\SM0418\M7278.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0418\M7278.D\ECD2B.CH  
 Acq On : 27 Oct 2014 12:29 pm Operator: RR  
 Sample : M8155-P-D(4) Inst : INST. M  
 Misc : NBH14-0013 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:17 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3113555   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14629868m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 8368636   | 178.28075 | ng    |
| 5) C15(101) #2     | 23.23 | 45368678m | 163.94604 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7278.D MM0417F.M Fri Dec 05 16:14:18 2014

Signal #1 : I:\M\DATA\SM0418\M7281.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0418\M7281.D\ECD2B.CH  
 Acq On : 10-27-2014 02:43:03 PM Operator: RR  
 Sample : M8356-P-D(4) Inst : INST. M  
 Misc : NBH14-0207 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:28 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3540995m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14451610m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 7419882   | 136.34184 | ng    |
| 5) C15(101) #2     | 23.23 | 34565778m | 118.29593 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7281.D MM0417F.M Fri Dec 05 16:14:20 2014

Signal #1 : I:\M\DATA\SM0418\M7282.D\ECD1A.CH Vial: 32  
 Signal #2 : I:\M\DATA\SM0418\M7282.D\ECD2B.CH  
 Acq On : 10-27-2014 03:27:38 PM Operator: RR  
 Sample : M8357-P-D(4) Inst : INST. M  
 Misc : NBH14-0211 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:32 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3728203m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 16127020m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 7425660   | 129.14912 | ng    |
| 5) C15(101) #2     | 23.23 | 38556481m | 118.23505 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7282.D MM0417F.M Fri Dec 05 16:14:22 2014

Signal #1 : I:\M\DATA\SM0418\M7283.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0418\M7283.D\ECD2B.CH  
 Acq On : 10-27-2014 04:12:07 PM Operator: RR  
 Sample : M8360-P-D(4) Inst : INST. M  
 Misc : NBH14-0220 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:36 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3458013   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15128658  | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3398893   | 61.23130 | ng    |
| 5) C15(101) #2     | 23.23 | 17070202m | 51.39986 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7283.D MM0417F.M Fri Dec 05 16:14:24 2014

Signal #1 : I:\M\DATA\SM0418\M7284.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0418\M7284.D\ECD2B.CH  
 Acq On : 10-27-2014 04:56:42 PM Operator: RR  
 Sample : M8361-P-D(4) Inst : INST. M  
 Misc : NBH14-0224 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:41 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2992240   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15236400m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 487773    | 8.54475  | ng    |
| 5) C15(101) #2     | 23.23 | 2705936m  | 8.48906  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7284.D MM0417F.M Fri Dec 05 16:14:26 2014



Signal #1 : I:\M\DATA\SM0418\M7287.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0418\M7287.D\ECD2B.CH  
 Acq On : 10-27-2014 07:10:12 PM Operator: RR  
 Sample : M8363-P-D(4) Inst : INST. M  
 Misc : NBH14-0232 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:49 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3086995   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15668119m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 3740610   | 76.32156 | ng    |
| 5) C15(101) #2     | 23.23 | 20984699m | 61.65525 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7287.D MM0417F.M Fri Dec 05 16:14:30 2014

Signal #1 : I:\M\DATA\SM0418\M7288.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0418\M7288.D\ECD2B.CH  
 Acq On : 10-27-2014 07:54:44 PM Operator: RR  
 Sample : M8368-P-D(4) Inst : INST. M  
 Misc : NBH14-0245 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:52 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3435517   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 15574293m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 9146418   | 176.44520 | ng    |
| 5) C15(101) #2     | 23.23 | 51945434m | 181.08325 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7288.D MM0417F.M Fri Dec 05 16:14:32 2014

Signal #1 : I:\M\DATA\SM0418\M7289.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0418\M7289.D\ECD2B.CH  
 Acq On : 10-27-2014 08:39:10 PM Operator: RR  
 Sample : M8369-P-D(4) Inst : INST. M  
 Misc : NBH14-0249 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:38:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3486398   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14870318m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 4576450   | 83.03390 | ng    |
| 5) C15(101) #2     | 23.23 | 23944207m | 75.29302 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7289.D MM0417F.M Fri Dec 05 16:14:34 2014

Signal #1 : I:\M\DATA\SM0418\M7290.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0418\M7290.D\ECD2B.CH  
 Acq On : 10-27-2014 09:23:42 PM Operator: RR  
 Sample : M8370-P-D(4) Inst : INST. M  
 Misc : NBH14-0253 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:39:01 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:38:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3611020   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15106152m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 5432419   | 95.88415 | ng    |
| 5) C15(101) #2     | 23.23 | 26947021m | 84.34310 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7290.D MM0417F.M Fri Dec 05 16:14:36 2014

Signal #1 : I:\M\DATA\SM0420\M7365.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0420\M7365.D\ECD2B.CH  
 Acq On : 31 Oct 2014 11:34 am Operator: RR  
 Sample : M8402-P-D(7) Inst : INST. M  
 Misc : NBH14-0161 5-128 14-0493 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:00:01 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:59:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2245288   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 11672286m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 200632m   | 4.11763   | ng    |
| 5) C15(101) #2     | 23.21 | 1015077m  | 4.88448   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7365.D MM0417F.M Fri Dec 05 16:18:19 2014

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0494*  
*Package DP-14-0676*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061


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**USACE/NAE - New Bedford Harbor LTM Study**  
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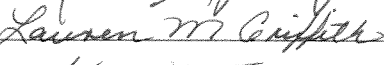

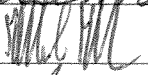

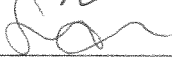

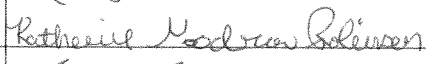





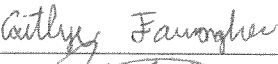



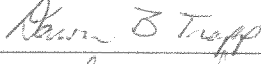




Analyst Approval:  Rich Restucci  
2014.11.20 08:49:39 -05'00'

QC Chemist Approval:  Carla Devine  
2014.12.10 10:32:47 -05'00'

Project Manager Approval:  Carole McCarthy  
2014.12.11 07:40:23 -05'00'

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## 2014 Signature Page

| Name (print)               | Name (signature)   | Initials  |
|----------------------------|--|---|
| Matt Schumitz              |             | MNS   |
| Ellyn M Webb               |             | EMW   |
| Carla Devine               |             | CRD   |
| Roxanne M. Brackett        |            | RMB   |
| Robert Lizotte, Jr.        |             | BL  |
| Lauren M Griffith          |             | LMG   |
| Kevin M. McInerney         |            | KMC   |
| <del>Michael McGee</del>   | <del></del> |   |
| Rich Restucci              |             | RR  |
| Stephanie Hart             |             | SAH   |
| Kerry Davis                |             | KPD   |
| Katherine Goodrow Robinson |           | KGR   |
| Sam Guimaraes              |           | SAG   |
| Emily Fraser               |           | EF  |
| Denise Schumitz            |           | DAS   |
| Jonathan Thorn             |           | JRT   |
| Christie Usher             |           | CU  |
| Caitlyn Farragher          |           | CNF   |
| Mart J. Benotti            |           |  |
| William H Brown            |           | WB  |
| Dawn Trapp                 |           | DBT   |
| Carolee S. Lynn McLain     |           | CSM   |
| Weidong Li                 |           | W.L   |
| Jeannine Seyfert           |           | JS  |
| FRANCO PALA                |           | FP  |



**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0494*  
*Package DP-14-0676*

|          |   |     |
|----------|---|-----|
| <b>1</b> | <b><i>Work Plan</i></b><br>Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.  | 1   |
| <b>2</b> | <b><i>Tables</i></b><br>Analytical Data Tables, Qualifier Definitions.  | 23  |
| <b>3</b> | <b><i>Miscellaneous Documentation</i></b><br>Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.                      | 34  |
| <b>4</b> | <b><i>Sample Preparation Records</i></b><br>Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.  | 49  |
| <b>5</b> | <b><i>Analytical Calibrations</i></b><br>Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check. | 80  |
| <b>6</b> | <b><i>Analytical Data</i></b><br>Raw Data Quantification Reports.   | 143 |
| <b>7</b> | <b><i>Chromatograms</i></b><br>Sample And Standard Chromatograms.   | N/A |
| <b>8</b> | <b><i>Unused Data</i></b>   | N/A |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** USACE-NAE New Bedford Harbor LTM MDL Study  
**Project Number:** 100053747  
**Client:** USACE/NAE  
696 Virginia Road  
Concord, MA 01742  
USA  
**Client Contact Information:** Peter Hugh  
Engineering Technical Lead  
(978) 318-8452(V)  
NA  
NA  
**Effective Date of QAPP:** 10/9/2014  
**Version Number:** 100053747(S)-02  
**Project Manager:** Peven-McCarthy, Carole  
**Laboratory Task Manager:** Peven-McCarthy, Carole  
**Deliverable Due Date:** 11/3/2014

### 2.0 SCOPE OF WORK

**Overview:** A project-specific MDL study is required for this project.  
**Matrix:** Soil/Sediment

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store frozen.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** NA  
**Archiving:** NA  
**Disposal:** NA

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

NA

| Samples Expected: | Samples Per Batch: | Batches Expected: |
|-------------------|--------------------|-------------------|
|                   | 20                 |                   |

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

| Type: | Description:                      | Count:      | Rgt: | Reference:                                    | Comment: |
|-------|-----------------------------------|-------------|------|---|----------|
| PB    | Laboratory control reagent blank. | 1 per batch | --   | NA  |          |
| LCS   | Laboratory Control Sample         | 1 per batch | No   | NA  |          |
| MDL   | Method Detection Limits           | 8 per batch | Yes  | 140304-02: Mud Dump Reference N4415 Lot:N4415 |          |

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

|                           |  |
|---------------------------|--|
| SOP No.-Rev:              | <b>5-192-14</b>  |
| SOP Title:                | <i>Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis</i> |
| Sample Size:              | 10 g   |
| SIS and LCS/MS Compounds: | Defined in Table 2.  |
| Deviations:               | NA   |
| Comments:                 | NA   |

**Table 2: SIS and LCS/MS Spiking Level**

| Standard Type       | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment     |
|---------------------|-------------------|-------------------|-------------|-------------|
| PCB Surrogate       | ID59 SIS          | ~ 100 ng          | 100 uL      | NA          |
| ECD LCS/MS Solution | HX10 LCS/MS       | ~ 38 - 150 ng     | 75 uL       | LCS         |
| PDL spike ECD       | ID73 LCS/MS       | ~ 7.5 - 30.0 ng   | 150 uL      | MDL samples |

#### 2.1.3.2 Cleanup

## WORK/QUALITY ASSURANCE PROJECT PLAN

- |    |              |   |
|----|--------------|---|
| 1) | SOP No.-Rev: | <b>5-328-04</b>   |
|    | SOP Title:   | <i>Removal (cleanup) of Sulfur from Environmental Sample Extracts</i> |
|    | Deviations:  | NA  |
|    | Comments:    | NA  |
| 2) | SOP No.-Rev: | <b>5-327-04</b>   |
|    | SOP Title:   | <i>Florisil Cleanup of Environmental Sample Extracts</i>              |
|    | Deviations:  | Elute with Hexane only  |
|    | Comments:    | NA  |

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

| Standard Type | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment |
|---------------|-------------------|-------------------|-------------|---------|
| PCB IS        | IE11 RIS          | ~ 100 ng          | 100 uL      | NA      |

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- |    |             |   |
|----|-------------|---|
| 1) | SOP_No-Rev: | <b>5-128-13</b>   |
|    | SOP_Title:  | <i>Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection</i> |
|    | Deviations: | NA  |
|    | Comments:   | Report SIS corrected data   |

### 2.2. DELIVERABLES

|                          |            |
|--------------------------|------------|
| <b>Deliverables Due:</b> | 11/3/2014  |
| <b>LIMS Reports:</b>     | <i>Yes</i> |
| <b>Histograms:</b>       | <i>No</i>  |
| <b>Excel Tables:</b>     | <i>Yes</i> |
| <b>EICs:</b>             | <i>No</i>  |
| <b>Chromatograms:</b>    | <i>No</i>  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

**EDDs:** *Yes*

**Comments:**

Required 30 day TAT.

EDD required.

Full data package (pdf) required for external validation.

Detailed quant reports are not required.

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

| Staff Member             | Role                    | Comment |
|--------------------------|-------------------------|---------|
| Carole S. Peven-McCarthy | Project Manager         | NA      |
| Samuel A. Guimaraes      | Sample Preparation      | NA      |
| Richard P. Restucci Jr   | GC/ECD Analysis         | NA      |
| Matt D. Schumitz         | Sample Custody          | NA      |
| Carla R. Devine          | Quality Control Officer | NA      |

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

| Activity:           | Start Date: | End Date:  | TAT (days): | Comment: |
|---------------------|-------------|------------|-------------|----------|
| Sample Receipt      | 10/03/2014  | NA         | 0           | NA       |
| Sample Preparation  | 10/06/2014  | 10/09/2014 | 3           | NA       |
| Instrument Analysis | 10/09/2014  | 10/24/2014 | 15          | NA       |

## WORK/QUALITY ASSURANCE PROJECT PLAN

| Activity:              | Start Date: | End Date:  | TAT<br>(days): | Comment: |
|------------------------|-------------|------------|----------------|----------|
| Quality Control Review | 10/27/2014  | 10/29/2014 | 2              | NA       |
| Final Data Reporting   | 10/29/2014  | 10/31/2014 | 2              | NA       |

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

| Labor Activity:        | Hours/<br>Batch: | Batches: | Total<br>Hours: | Comment: |
|------------------------|------------------|----------|-----------------|----------|
| Sample Receipt         | 1                | 1        | 1               | NA       |
| Sample Preparation     | 24               | 1        | 24              | NA       |
| <i>Extraction</i>      | 20               |          |                 |          |
| <i>glassware</i>       | 4                |          |                 |          |
| Instrument Analysis    | 16               | 1        | 16              | NA       |
| <i>GC/ECD</i>          | 16               |          |                 |          |
| Quality Control Review | 3                | 1        | 3               | NA       |
| Final Data Reporting   | 1                | 1        | 1               | NA       |

### 7.0 STAFF DEVELOPMENT

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**Attachment 1: Target Samples**

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

|                                |  |
|--------------------------------|--|
| <b>Project Test Code Name:</b> | Master_128   |
| <b>SOP Reference:</b>          | 5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection |
| <b>Description:</b>            | Pesticide / PCB by GC/ECD  |
| <b>Matrix:</b>                 | S - Solid Samples, like soil or sediment, prepared and analyzed under the same class of detection limits.  |
| <b>Detection Limit Study:</b>  | 5-128-2013-ssMDL-SF  |
| <b>Instrument:</b>             | ECD  |
| <b>MQO Criteria</b>            | USACE/NBH LTMP   |
| <b>Standard Report:</b>        | Standard Result Report   |

| Method Specific Reporting    |            | Holding Times (days)        |                    | Data Flags                           |
|------------------------------|------------|-----------------------------|--------------------|--------------------------------------|
| <b>Result Units:</b>         | ng/g       | <b>Unit Conversion:</b>     | (none)             | <b>Sample:</b> 14 <b>DL_Flag:</b> U  |
| <b>Weight Basis:</b>         | DRY        | <b>Result Format:</b>       | Significant Figure | <b>Frozen:</b> 365 <b>RL_Flag:</b> J |
| <b>Standard Basis:</b>       | SIS        | <b># of Figures/Digits:</b> | 3                  | <b>Extract:</b> 40 <b>PB_Flag:</b> B |
| <b>Oil Weight Basis:</b>     | No         | <b>Oil Weight Source:</b>   | Oil Weight         | <b>DIL_Flag:</b> D                   |
| <b>U-Value Substitution:</b> | U-Flag=NED | <b>Histograms:</b>          | No                 | <b>HT_Flag:</b> T                    |
| <b>ECD_Reporting:</b>        | Yes        |                             |                    |                                      |
| <b>ECD_Result:</b>           | Higher     | <b>ECD_Flag</b>             | p                  |                                      |
| <b>RPD_Limit (&lt;%):</b>    | 40         | <b>ECD_Manual_Flag:</b>     | m                  |                                      |

| No: | Analyte: | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|----------|--------------|------|----------|----------|---------|--------|
| 1   | Cl2(8)   | Cl2(8)       | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 2   | Cl3(18)  | Cl3(18)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 3   | Cl3(28)  | Cl3(28)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 4   | Cl4(44)  | Cl4(44)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 5   | Cl4(52)  | Cl4(52)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 6   | Cl4(66)  | Cl4(66)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 7   | Cl5(101) | Cl5(101)     | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 8   | Cl5(105) | Cl5(105)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 9   | Cl5(118) | Cl5(118)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 10  | Cl6(128) | Cl6(128)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 11  | Cl6(138) | Cl6(138)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 12  | Cl6(153) | Cl6(153)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 13  | Cl7(170) | Cl7(170)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 14  | Cl7(180) | Cl7(180)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 15  | Cl7(187) | Cl7(187)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 16  | Cl8(195) | Cl8(195)     | T    | Cl6(161) | Cl6(152) | No      | No     |



## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

| No:                    | Analyte:  | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|------------------------|-----------|--------------|------|----------|----------|---------|--------|
| 17                     | CI9(206)  | CI9(206)     | T    | CI6(161) | CI6(152) | No      | No     |
| 18                     | CI10(209) | CI10(209)    | T    | CI6(161) | CI6(152) | No      | No     |
| 1                      | CI3(34)   | CI3(34)      | SIS  | CI5(96)  |          | No      | No     |
| 2                      | CI6(152)  | CI6(152)     | SIS  | CI6(161) |          | No      | No     |
| <b>Total Analytes:</b> |           | 20           |      |          |          |         |        |

**Subtract Peaks:**

None

**Sum Peaks:**

None

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

**ICAL Acceptance Criteria:**

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

**Continuing Calibration Verification Criteria:**

**CCV Name:** 5-128

| Frequency Hrs: | Mean PD(%): | Individual PD(%): | RIS/SIS RT Window (min): | Area Limit Low(%): | Area Limit High(%): | Comment: |
|----------------|-------------|-------------------|--------------------------|--------------------|---------------------|----------|
| 24 (N)         | 15 (N)      | 20 (N)            | 0.25 (N)                 | -50                | 100 (N)             | NA       |

**Independent Calibration Verification:**

**ICC Name:** 5-128

| Mean PD Limit(%): | Ind. PD Limit(%): | RIS/SIS Window Limit (Secs): | Area Limit High(%): | Area Limit Low(%): | Comment: |
|-------------------|-------------------|------------------------------|---------------------|--------------------|----------|
| 20 (N)            | 20 (N)            | 0.25 (N)                     | -50                 | 100 (N)            | NA       |

**Mass Discrimination Criteria:**

None

**Degradation Check Criteria:**

**Degradation Check Name:** 5-128

| DDT Breakdown Limit (%): | Endrin Breakdown Limit(%): | Total Breakdown Limit(%): | Comment: |
|--------------------------|----------------------------|---------------------------|----------|
| 20 (N)                   | 20 (N)                     | 20 (N)                    |          |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| MQO Application                        |   | USACE/NBH LTMP |  |
|--|---|----------------|--|
| MQO:                                   | Acceptance Criteria   | Qual:          | Corrective Action:   |
| Procedural Blank                       | Samples must be greater than five times the blank concentration (>5xPB).  | B              | Review with Project Manager; re-analyze or justify results in project records.               |
| PB Measurement Quality Objective       | Organic results in the Procedural Blank are less than the ssRL (<ssRL)  | N              |  |
| Laboratory Control Sample              | Recovery values 70-130%.  | N              | Review with project manager; re-analyze or justify reporting the results in project records. |
| Matrix Spike Recovery                  | Organics 70-130%. Analyte concentration in MS must be >5 times reported background concentration. Organics Results in the Target is less than 5 times the Original  | N              | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n              |  |
| Matrix Spike/Spike Duplicate Precision | Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration. Organics Results in the Target is less than 5 times the Original  | N              | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n              |  |
| Standard Reference Material Accuracy   | Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL). Organics Results in the Target is less than 5 times the MDL | N              | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n              |  |
| Analytical Duplicate Precision         | Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL. Organics Results in the Original is less than 10 times the MDL  | N              | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n              |  |
| Analytical Triplicate Precision        | Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL. Organics Results in the Original is less than 10 times the MDL  | N              | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n              |  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Surrogate Compound Recovery            | Recovery results between 40% and 120%.  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records.   |
| Control Oil                            | RPD < 30% for at least 90% of analytes  | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Instrument Calibration                 | 5-128-13: R-squared greater than or equal to 0.995<br>Mean RSD less than or equal to 15%,<br>Individual RSD less than or equal to 25% | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Independent Calibration Check Solution | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 20%.                              | N                     | Review with Project Manager; re-analyze or justify in project records.   |
| Continuing Calibration Verification    | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 15%.                              | N                     |  |

## Sample Receipt Form

Approved:  Authorized

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

### SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA

COC Forms:  Shipped with samples  No Forms

### Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler |              | None | Intact         | Intact              | 1.0    | 23   |

### Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0117 (NA) BDO IDs Assigned: M8152 - M8174

Samples logged in by: Schumitz, Matt Date/Time: 09/26/2014 12:00 AM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

Project Number:

Client:

Received by:

Schumitz, Matt

Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8152   | NBH14-0001        | 09/22/14 15:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8153   | NBH14-0005        | 09/22/14 14:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8154   | NBH14-0009        | 09/22/14 11:16   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8155   | NBH14-0013        | 09/22/14 12:08   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8156   | NBH14-0017        | 09/22/14 8:13    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8157   | NBH14-0021        | 09/22/14 11:38   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8158   | NBH14-0025        | 09/22/14 9:37    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8159   | NBH14-0029        | 09/22/14 10:40   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8160   | NBH14-0033        | 09/22/14 15:25   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8161   | NBH14-0037        | 09/22/14 14:03   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8162   | NBH14-0041        | 09/22/14 13:06   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8163   | NBH14-0045        | 09/23/14 15:43   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8164   | NBH14-0049        | 09/23/14 14:57   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8165   | NBH14-0053        | 09/23/14 13:53   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8166   | NBH14-0061        | 09/23/14 10:12   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8167   | NBH14-0065        | 09/23/14 9:09    | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8168   | NBH14-0073        | 09/23/14 14:27   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8169   | NBH14-0077        | 09/23/14 13:39   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8170   | NBH14-0081        | 09/23/14 12:26   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8171   | NBH14-0085        | 09/23/14 11:29   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8172   | NBH14-0089        | 09/23/14 10:32   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8173   | NBH14-0093        | 09/23/14 9:53    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8174   | NBH14-0097        | 09/23/14 8:57    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |

Total Samples: 23

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-330

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |  |  |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|--|--|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |  |  |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |  |  |

Relinquished By (name/date/time):

Received By (name/date/time):

*[Signature]* 9/26/14 9:15

*[Signature]* 9/26/14 9:15

**Battelle**

The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
**Battelle**  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

**Analyses (Record No. of containers / Preservative)**

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |  |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|--|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |  |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |

Relinquished By (name/date/time):

*[Signature]* 9/26/14 9:18

Received By (name/date/time):

*[Signature]* 9/26/14



# Sample Receipt Form

Approved:  Authorized

Project Number: 100043429 Client: USACE  
Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM  
No. of Shipping Containers: 1

## SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
COC Forms:  Shipped with samples  No Forms

## Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal          | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|---------------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler | NA           | Custody Seals | Intact         | Intact              | 1.2    | 60   |

## Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.2 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0113 (NA) BDO IDs Assigned: M8347 - M8406  
Samples logged in by: Schumitz, Matt Date/Time: 10/01/2014 12:00 AM  
Approved By: Devine, Carla Approved On: 12/5/2014 9:32:00 AM  
Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8347   | NBH14-0057        | 09/30/14 10:09   | 10/02/14 10:08 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8348   | NBH14-0069        | 09/30/14 10:25   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8349   | NBH14-0181        | 09/26/14 8:36    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8350   | NBH14-0185        | 09/26/14 9:50    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8351   | NBH14-0189        | 09/26/14 11:00   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8352   | NBH14-0193        | 09/26/14 12:49   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8353   | NBH14-0197        | 09/26/14 13:38   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8354   | NBH14-0199        | 09/26/14 14:24   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8355   | NBH14-0203        | 09/26/14 15:17   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8356   | NBH14-0207        | 09/26/14 14:32   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8357   | NBH14-0211        | 09/26/14 13:36   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8358   | NBH14-0215        | 09/26/14 8:21    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8359   | NBH14-0219        | 09/26/14 8:50    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8360   | NBH14-0220        | 09/26/14 9:24    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8361   | NBH14-0224        | 09/26/14 10:54   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8362   | NBH14-0228        | 09/26/14 11:50   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8363   | NBH14-0232        | 09/25/14 14:16   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8364   | NBH14-0233        | 09/26/14 8:56    | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8365   | NBH14-0234        | 09/24/14 14:40   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8366   | NBH14-0237        | 09/29/14 15:14   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8367   | NBH14-0241        | 09/29/14 15:54   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8368   | NBH14-0245        | 09/29/14 8:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8369   | NBH14-0249        | 09/29/14 9:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8370   | NBH14-0253        | 09/29/14 10:01   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8371   | NBH14-0257        | 09/29/14 12:47   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8372   | NBH14-0261        | 09/29/14 14:39   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8373   | NBH14-0265        | 09/29/14 15:26   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8374   | NBH14-0269        | 09/29/14 8:13    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8375   | NBH14-0273        | 09/29/14 9:08    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8376   | NBH14-0277        | 09/29/14 9:52    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8377   | NBH14-0281        | 09/29/14 10:45   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8378   | NBH14-0285        | 09/29/14 11:15   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8379   | NBH14-0289        | 09/29/14 12:27   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8380   | NBH14-0302        | 09/30/14 8:00    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8381   | NBH14-0306        | 09/30/14 9:02    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8382   | NBH14-0310        | 09/30/14 9:59    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8383   | NBH14-0314        | 09/30/14 11:47   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8384   | NBH14-0318        | 09/30/14 12:41   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8385   | NBH14-0322        | 09/30/14 13:44   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8386   | NBH14-0326        | 09/30/14 14:36   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8387   | NBH14-0101        | 09/24/14 10:17   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8388   | NBH14-0105        | 09/24/14 9:18    | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8389   | NBH14-0109        | 09/24/14 10:56   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8390   | NBH14-0113        | 09/24/14 12:10   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8391   | NBH14-0117        | 09/24/14 13:15   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8392   | NBH14-0121        | 09/24/14 14:24   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8393   | NBH14-0125        | 09/25/14 8:15    | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8394   | NBH14-0129        | 09/25/14 9:49    | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8395   | NBH14-0133        | 09/25/14 11:00   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8396   | NBH14-0137        | 09/25/14 11:32   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8397   | NBH14-0141        | 09/25/14 12:58   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8398   | NBH14-0145        | 09/25/14 14:03   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8399   | NBH14-0149        | 09/25/14 14:56   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8400   | NBH14-0153        | 09/25/14 8:19    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8401   | NBH14-0157        | 09/25/14 9:06    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8402   | NBH14-0161        | 09/25/14 9:55    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8403   | NBH14-0165        | 09/25/14 12:58   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8404   | NBH14-0169        | 09/25/14 14:11   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8405   | NBH14-0173        | 09/25/14 15:14   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8406   | NBH14-0177        | 09/26/14 7:39    | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

Total Samples: 60

# Chain of Custody

**Battelle**

The Business of Innovation

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:

Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | M0347     | SED    | 151-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | " " 48    | SED    | 155-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 49        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 50        | SED    | 241-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 51        | SED    | 237-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 52        | SED    | 236-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 53        | SED    | 231-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 54        | SED    | 230-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 55        | SED    | 117-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 56        | SED    | 114-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 57        | SED    | 111-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 58        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 59        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 60        | SED    | 138-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 61        | SED    | 126-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 62        | SED    | 108-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 63        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 64        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 65        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                 |                                |
| 9/29/2014 | 15:14 | NBH14-0237 | 66        | SED    | 222-14LTM | 1  | X    |     |      |            |      |                 |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By (name/date/time):

*MS* 10-1-14 1700

**Battelle**  
The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Samplers Signature: PSD & MRF

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |     |     |     |            |     |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|-----|-----|-----|------------|-----|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4°C | TOC | 4°C | Grain Size | 4°C | Benthic Infauna | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 | M8367     | SED    | 224-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | " 68      | SED    | 128-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | 69        | SED    | 123-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | 70        | SED    | 121-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | 71        | SED    | 218-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | 72        | SED    | 208-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | 73        | SED    | 207-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | 74        | SED    | 332-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | 75        | SED    | 338-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | 76        | SED    | 331-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | 77        | SED    | 323-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | 78        | SED    | 324-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | 79        | SED    | 325-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | 80        | SED    | 225-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 9:02  | NBH14-0306 | 81        | SED    | 226-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | 82        | SED    | 227-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | 83        | SED    | 217-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | 84        | SED    | 212-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | 85        | SED    | 211-14LTM | 1  | X   |     |     |            |     |                 |                                |
| 9/30/2014 | 14:36 | NBH14-0326 | 86        | SED    | 204-14LTM | 1  | X   |     |     |            |     |                 |                                |

Relinquished By (name/date/time): Matt & Jyl 10/1/14 1700

Received By (name/date/time): MMF 10-1-14 1700

**Battelle**  
The Business of Innovation

**Chain of Custody**

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | Station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |                 |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|-----------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | Benthic Infauna | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | M8287     | SED    | 349-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | " " 88    | SED    | 352-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 89        | SED    | 345-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 90        | SED    | 318-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 91        | SED    | 311-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 92        | SED    | 306-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 93        | SED    | 221-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 94        | SED    | 249-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 95        | SED    | 317-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 96        | SED    | 309-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 97        | SED    | 310-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 98        | SED    | 304-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 99        | SED    | 250-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | M8400     | SED    | 105-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | " " 01    | SED    | 109-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 02        | SED    | 115-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 03        | SED    | 154-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 04        | SED    | 139-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 05        | SED    | 131-14LTM | 1  | X    |     |      |            |                 |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 06        | SED    | 247-14LTM | 1  | X    |     |      |            |                 |                                |

Relinquished By (name/date/time): Matt K Zyl 10/1/14 1700

Received By (name/date/time): MMR 10-1-14 1700

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3 of 3

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** Procedural Blank

**Battelle ID** CD582PB-P  
**Sample Type** PB  
**Collection Date** 10/27/2014  
**Extraction Date** 10/27/2014  
**Analysis Date** 10/31/2014  
**Analytical Instrument** ECD  
**% Moisture** 4.16  
**% Lipid** NA  
**Matrix** SEDIMENT  
**Sample Size** 9.60  
**Size Unit-Basis** G\_DRY  
**Units** NG/G\_DRY

---

|           |         |
|-----------|---------|
| Cl2(8)    | 0.250 U |
| Cl3(18)   | 0.251 U |
| Cl3(28)   | 0.251 U |
| Cl4(44)   | 0.251 U |
| Cl4(52)   | 0.250 U |
| Cl4(66)   | 0.250 U |
| Cl5(101)  | 0.250 U |
| Cl5(105)  | 0.251 U |
| Cl5(118)  | 0.251 U |
| Cl6(128)  | 0.251 U |
| Cl6(138)  | 0.251 U |
| Cl6(153)  | 0.251 U |
| Cl7(170)  | 0.251 U |
| Cl7(180)  | 0.251 U |
| Cl7(187)  | 0.251 U |
| Cl8(195)  | 0.251 U |
| Cl9(206)  | 0.250 U |
| Cl10(209) | 0.251 U |

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**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| Cl3(34)  | 88 |
| Cl6(152) | 92 |



# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

|                              |                              |               |              |             |
|------------------------------|------------------------------|---------------|--------------|-------------|
| <b>Client ID</b>             | Laboratory Control<br>Sample |               |              |             |
| <b>Battelle ID</b>           | CD583LCS-P                   |               |              |             |
| <b>Sample Type</b>           | LCS                          |               |              |             |
| <b>Collection Date</b>       | 10/27/2014                   |               |              |             |
| <b>Extraction Date</b>       | 10/27/2014                   |               |              |             |
| <b>Analysis Date</b>         | 10/31/2014                   |               |              |             |
| <b>Analytical Instrument</b> | ECD                          |               |              |             |
| <b>% Moisture</b>            | 4.16                         |               |              |             |
| <b>% Lipid</b>               | NA                           |               |              |             |
| <b>Matrix</b>                | SEDIMENT                     |               |              |             |
| <b>Sample Size</b>           | 9.56                         |               |              |             |
| <b>Size Unit-Basis</b>       | G_DRY                        |               |              |             |
| <b>Units</b>                 | NG/G_DRY                     | <b>Target</b> | <b>% REC</b> | <b>Qual</b> |

|           |      |      |     |
|-----------|------|------|-----|
| Cl2(8)    | 3.77 | 3.92 | 96  |
| Cl3(18)   | 3.79 | 3.92 | 97  |
| Cl3(28)   | 3.66 | 3.92 | 93  |
| Cl4(44)   | 3.95 | 3.92 | 101 |
| Cl4(52)   | 3.74 | 3.92 | 95  |
| Cl4(66)   | 3.91 | 3.92 | 100 |
| Cl5(101)  | 3.57 | 3.92 | 91  |
| Cl5(105)  | 3.94 | 3.92 | 101 |
| Cl5(118)  | 4.18 | 3.92 | 107 |
| Cl6(128)  | 4.01 | 3.92 | 102 |
| Cl6(138)  | 4.23 | 3.92 | 108 |
| Cl6(153)  | 3.75 | 3.92 | 96  |
| Cl7(170)  | 3.89 | 3.92 | 99  |
| Cl7(180)  | 3.93 | 3.92 | 100 |
| Cl7(187)  | 4.04 | 3.92 | 103 |
| Cl8(195)  | 4.00 | 3.92 | 102 |
| Cl9(206)  | 3.92 | 3.92 | 100 |
| Cl10(209) | 4.18 | 3.92 | 107 |

### Surrogate Recoveries (%)

|          |    |
|----------|----|
| Cl3(34)  | 86 |
| Cl6(152) | 92 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0017 | NBH14-0025 | NBH14-0045 | NBH14-0049 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8156-P    | M8158-P    | M8163-P    | M8164-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/22/2014 | 09/22/2014 | 09/23/2014 | 09/23/2014 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analysis Date</b>         | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 4.40       | 0.54       | 8.90       | 6.49       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.98       | 2.62       | 0.91       | 0.94       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |         |        |        |
|-----------|--------|---------|--------|--------|
| Cl2(8)    | 310 D  | 26.0    | 199 D  | 701 D  |
| Cl3(18)   | 720 D  | 57.6    | 572 D  | 1680 D |
| Cl3(28)   | 1810 D | 133 D   | 1260 D | 3820 D |
| Cl4(44)   | 684 D  | 54.4    | 500 D  | 1550 D |
| Cl4(52)   | 2690 D | 214 D   | 1960 D | 5630 D |
| Cl4(66)   | 546 D  | 43.6    | 365 D  | 1080 D |
| Cl5(101)  | 863 D  | 65.4    | 610 D  | 1640 D |
| Cl5(105)  | 205    | 33.8    | 113    | 285    |
| Cl5(118)  | 1160 D | 134     | 760 D  | 1730 D |
| Cl6(128)  | 143    | 21.7    | 81.9   | 265    |
| Cl6(138)  | 771 D  | 84.0    | 491 D  | 1120 D |
| Cl6(153)  | 1050 D | 103     | 666 D  | 1620 D |
| Cl7(170)  | 106    | 11.2    | 58.0   | 207    |
| Cl7(180)  | 159    | 17.8    | 91.4   | 322    |
| Cl7(187)  | 158    | 15.2    | 92.2 p | 259    |
| Cl8(195)  | 18.8   | 1.56    | 10.3 p | 36.2   |
| Cl9(206)  | 22.4   | 1.50    | 11.5   | 37.1   |
| Cl10(209) | 7.33   | 0.969 U | 3.51   | 12.8   |

### Surrogate Recoveries (%)

|          |     |    |     |    |
|----------|-----|----|-----|----|
| Cl3(34)  | 105 | 97 | 100 | 89 |
| Cl6(152) | 84  | 81 | 79  | 86 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0053 | NBH14-0061 | NBH14-0057 | NBH14-0069 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8165-P    | M8166-P    | M8347-P    | M8348-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/23/2014 | 09/23/2014 | 09/30/2014 | 09/30/2014 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analysis Date</b>         | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 2.09       | 2.62       | 2.15       | 0.52       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.51       | 1.03       | 1.15       | 1.00       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |        |        |        |
|-----------|-------|--------|--------|--------|
| Cl2(8)    | 117   | 91.3   | 82.9   | 20.3   |
| Cl3(18)   | 204 D | 182 D  | 188 D  | 53.1   |
| Cl3(28)   | 432 D | 554 D  | 438 D  | 109    |
| Cl4(44)   | 138 D | 157    | 108    | 44.2   |
| Cl4(52)   | 631 D | 794 D  | 698 D  | 216    |
| Cl4(66)   | 124   | 148    | 121    | 41.8   |
| Cl5(101)  | 189 D | 159    | 140    | 50.1   |
| Cl5(105)  | 35.9  | 47.0   | 39.2   | 10.6   |
| Cl5(118)  | 192 D | 306    | 278    | 70.2   |
| Cl6(128)  | 31.1  | 37.9   | 34.9   | 11.2   |
| Cl6(138)  | 171 p | 176    | 151    | 51.4   |
| Cl6(153)  | 192 D | 272    | 244    | 74.0   |
| Cl7(170)  | 20.4  | 28.9   | 25.3   | 6.38   |
| Cl7(180)  | 32.2  | 44.1   | 40.6   | 10.4   |
| Cl7(187)  | 31.3  | 46.0   | 44.4 p | 20.1 p |
| Cl8(195)  | 3.68  | 4.10   | 3.82   | 2.54 U |
| Cl9(206)  | 4.15  | 4.54   | 4.65   | 2.53 U |
| Cl10(209) | 1.22  | 2.46 U | 2.21 U | 2.54 U |

### Surrogate Recoveries (%)

|          |    |     |     |    |
|----------|----|-----|-----|----|
| Cl3(34)  | 86 | 105 | 106 | 95 |
| Cl6(152) | 89 | 83  | 80  | 86 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0203 | NBH14-0215 | NBH14-0219 | NBH14-0234 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8355-P    | M8358-P    | M8359-P    | M8365-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/26/2014 | 09/26/2014 | 09/26/2014 | 09/24/2014 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analysis Date</b>         | 10/31/2014 | 10/31/2014 | 10/31/2014 | 11/01/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 23.24      | 10.88      | 1.04       | 0.51       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 0.82       | 1.00       | 1.07       | 10.10      |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |   |      |    |      |    |        |    |
|-----------|--------|---|------|----|------|----|--------|----|
| Cl2(8)    | 29300  | D | 333  | D  | 306  | D  | 0.250  | U  |
| Cl3(18)   | 68800  | D | 777  | D  | 716  | D  | 0.251  | U  |
| Cl3(28)   | 65500  | D | 2000 | D  | 1840 | D  | 0.0713 | J  |
| Cl4(44)   | 11200  | D | 852  | D  | 734  | D  | 0.251  | U  |
| Cl4(52)   | 107000 | D | 3740 | D  | 3240 | D  | 0.168  | pJ |
| Cl4(66)   | 4190   | D | 578  | D  | 575  | D  | 0.250  | U  |
| Cl5(101)  | 4530   | D | 790  | D  | 739  | D  | 0.339  | p  |
| Cl5(105)  | 232    |   | 152  |    | 113  |    | 0.251  | U  |
| Cl5(118)  | 2680   | D | 942  | D  | 795  | D  | 0.177  | J  |
| Cl6(128)  | 286    | D | 144  |    | 140  |    | 0.251  | pU |
| Cl6(138)  | 2880   | D | 773  | Dp | 619  | Dp | 0.206  | J  |
| Cl6(153)  | 4960   | D | 1080 | D  | 875  | D  | 0.408  | p  |
| Cl7(170)  | 402    | D | 116  |    | 104  |    | 0.251  | U  |
| Cl7(180)  | 794    | D | 192  |    | 160  |    | 0.251  | U  |
| Cl7(187)  | 1360   | D | 195  |    | 156  |    | 0.251  | U  |
| Cl8(195)  | 133    | p | 32.6 |    | 20.9 |    | 0.251  | U  |
| Cl9(206)  | 199    | p | 62.5 |    | 24.3 |    | 0.250  | U  |
| Cl10(209) | 46.7   | p | 12.5 |    | 7.64 |    | 0.251  | U  |

### Surrogate Recoveries (%)

|          |    |     |     |    |
|----------|----|-----|-----|----|
| Cl3(34)  | 69 | 108 | 110 | 97 |
| Cl6(152) | 80 | 94  | 108 | 89 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0257 | NBH14-0261 | NBH14-0265 | NBH14-0314 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8371-P    | M8372-P    | M8373-P    | M8383-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/29/2014 | 09/29/2014 | 09/29/2014 | 09/30/2014 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analysis Date</b>         | 11/01/2014 | 11/01/2014 | 11/01/2014 | 11/01/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 2.58       | 0.51       | 1.54       | 2.44       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.46       | 2.49       | 2.50       | 2.47       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |      |      |      |   |
|-----------|-------|------|------|------|---|
| Cl2(8)    | 9.86  | 21.9 | 102  | 137  | D |
| Cl3(18)   | 20.4  | 42.3 | 207  | 267  | D |
| Cl3(28)   | 71.7  | 169  | 548  | 899  | D |
| Cl4(44)   | 16.2  | 38.8 | 179  | 325  | D |
| Cl4(52)   | 77.1  | 236  | 732  | 1130 | D |
| Cl4(66)   | 23.8  | 46.8 | 228  | 441  | D |
| Cl5(101)  | 31.2  | 62.4 | 336  | 614  | D |
| Cl5(105)  | 15.5  | 22.8 | 73.9 | 284  | D |
| Cl5(118)  | 72.3  | 127  | 390  | 1070 | D |
| Cl6(128)  | 11.4  | 17.9 | 67.2 | 178  | D |
| Cl6(138)  | 44.8  | 73.9 | 272  | 743  | D |
| Cl6(153)  | 56.6  | 105  | 373  | 787  | D |
| Cl7(170)  | 5.58  | 11.3 | 40.2 | 108  |   |
| Cl7(180)  | 8.93  | 16.7 | 59.1 | 136  | D |
| Cl7(187)  | 7.83  | 19.2 | 138  | 108  | p |
| Cl8(195)  | 0.430 | 1.55 | 7.07 | 17.4 | J |
| Cl9(206)  | 0.401 | 1.99 | 7.92 | 18.7 | J |
| Cl10(209) | 1.03  | 1.02 | 2.22 | 7.90 | U |

### Surrogate Recoveries (%)

|          |     |    |     |     |
|----------|-----|----|-----|-----|
| Cl3(34)  | 100 | 93 | 101 | 110 |
| Cl6(152) | 81  | 78 | 97  | 87  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0318 | NBH14-0322 | NBH14-0326 | NBH14-0165 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8384-P    | M8385-P    | M8386-P    | M8403-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/30/2014 | 09/30/2014 | 09/30/2014 | 09/25/2014 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 | 10/27/2014 | 10/27/2014 |
| <b>Analysis Date</b>         | 11/01/2014 | 11/01/2014 | 11/01/2014 | 11/01/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 1.07       | 5.76       | 4.86       | 1.04       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.49       | 2.44       | 2.42       | 0.99       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |      |   |      |   |      |   |      |   |
|-----------|------|---|------|---|------|---|------|---|
| Cl2(8)    | 96.9 | D | 50.3 |   | 144  | D | 13.2 |   |
| Cl3(18)   | 194  | D | 102  | D | 298  | D | 37.2 |   |
| Cl3(28)   | 518  | D | 305  | D | 763  | D | 86.4 |   |
| Cl4(44)   | 225  | D | 133  | D | 299  | D | 36.5 |   |
| Cl4(52)   | 767  | D | 446  | D | 1140 | D | 146  |   |
| Cl4(66)   | 246  | D | 151  | D | 352  | D | 28.5 |   |
| Cl5(101)  | 372  | D | 224  | D | 486  | D | 40.1 |   |
| Cl5(105)  | 158  |   | 59.5 |   | 152  |   | 9.09 |   |
| Cl5(118)  | 568  | D | 286  | D | 667  | D | 56.5 |   |
| Cl6(128)  | 116  |   | 46.8 |   | 122  |   | 7.81 |   |
| Cl6(138)  | 417  | D | 196  | D | 455  | D | 39.6 |   |
| Cl6(153)  | 441  | D | 219  | D | 583  | D | 48.7 |   |
| Cl7(170)  | 58.5 |   | 25.4 |   | 76.8 |   | 3.82 |   |
| Cl7(180)  | 86.4 |   | 36.4 |   | 114  |   | 7.04 |   |
| Cl7(187)  | 55.9 |   | 42.5 | p | 102  |   | 9.46 |   |
| Cl8(195)  | 9.20 |   | 3.70 |   | 13.7 |   | 2.56 | U |
| Cl9(206)  | 8.68 |   | 3.29 |   | 13.5 |   | 2.55 | U |
| Cl10(209) | 4.65 |   | 1.30 |   | 6.24 |   | 2.56 | U |

### Surrogate Recoveries (%)

|          |     |  |     |  |     |  |    |  |
|----------|-----|--|-----|--|-----|--|----|--|
| Cl3(34)  | 115 |  | 102 |  | 110 |  | 98 |  |
| Cl6(152) | 97  |  | 94  |  | 94  |  | 89 |  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0061 | NBH14-0061 |                 |
|------------------------------|------------|------------|-----------------|
| <b>Battelle ID</b>           | M8166-P    | M8166DUP-P |                 |
| <b>Sample Type</b>           | SA         | QADU       |                 |
| <b>Collection Date</b>       | 09/23/2014 | 09/23/2014 |                 |
| <b>Extraction Date</b>       | 10/27/2014 | 10/27/2014 |                 |
| <b>Analysis Date</b>         | 10/31/2014 | 10/31/2014 |                 |
| <b>Analytical Instrument</b> | ECD        | ECD        |                 |
| <b>% Moisture</b>            | 2.62       | 4.21       |                 |
| <b>% Lipid</b>               | NA         | NA         |                 |
| <b>Matrix</b>                | SED        | SED        |                 |
| <b>Sample Size</b>           | 1.03       | 1.02       |                 |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      |                 |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | <b>RPD Qual</b> |

|           |        |         |      |
|-----------|--------|---------|------|
| Cl2(8)    | 91.3   | 82.3    | 10.4 |
| Cl3(18)   | 182 D  | 197     | 7.9  |
| Cl3(28)   | 554 D  | 464 D   | 17.7 |
| Cl4(44)   | 157    | 146     | 7.3  |
| Cl4(52)   | 794 D  | 745 D   | 6.4  |
| Cl4(66)   | 148    | 166     | 11.5 |
| Cl5(101)  | 159    | 148     | 7.2  |
| Cl5(105)  | 47.0   | 43.3    | 8.2  |
| Cl5(118)  | 306    | 262     | 15.5 |
| Cl6(128)  | 37.9   | 34.4    | 9.7  |
| Cl6(138)  | 176    | 177 p   | 0.6  |
| Cl6(153)  | 272    | 235     | 14.6 |
| Cl7(170)  | 28.9   | 25.3    | 13.3 |
| Cl7(180)  | 44.1   | 37.8    | 15.4 |
| Cl7(187)  | 46.0   | 43.3    | 6.0  |
| Cl8(195)  | 4.10   | 4.40 p  | 7.1  |
| Cl9(206)  | 4.54   | 3.98    | 13.1 |
| Cl10(209) | 2.46 U | 2.49 pU |      |

### Surrogate Recoveries (%)

|          |     |     |  |
|----------|-----|-----|--|
| Cl3(34)  | 105 | 103 |  |
| Cl6(152) | 83  | 73  |  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                | NBH14-0234 | NBH14-0234 |        |       |      |
|--------------------------|------------|------------|--------|-------|------|
| Battelle ID              | M8365-P    | M8365MS-P  |        |       |      |
| Sample Type              | SA         | MS         |        |       |      |
| Collection Date          | 09/24/2014 | 09/24/2014 |        |       |      |
| Extraction Date          | 10/27/2014 | 10/27/2014 |        |       |      |
| Analysis Date            | 11/01/2014 | 11/01/2014 |        |       |      |
| Analytical Instrument    | ECD        | ECD        |        |       |      |
| % Moisture               | 0.51       | 0.52       |        |       |      |
| % Lipid                  | NA         | NA         |        |       |      |
| Matrix                   | SED        | SED        |        |       |      |
| Sample Size              | 10.10      | 4.97       |        |       |      |
| Size Unit-Basis          | G_DRY      | G_DRY      |        |       |      |
| Units                    | NG/G_DRY   | NG/G_DRY   | Target | % REC | Qual |
| Cl2(8)                   | 0.250 U    | 11.4       | 12.58  | 91    |      |
| Cl3(18)                  | 0.251 U    | 11.8       | 12.58  | 94    |      |
| Cl3(28)                  | 0.0713 J   | 12.3       | 12.58  | 97    |      |
| Cl4(44)                  | 0.251 U    | 14.4       | 12.58  | 114   |      |
| Cl4(52)                  | 0.168 pJ   | 12.6       | 12.58  | 99    |      |
| Cl4(66)                  | 0.250 U    | 12.2       | 12.58  | 97    |      |
| Cl5(101)                 | 0.339 p    | 11.3       | 12.58  | 87    |      |
| Cl5(105)                 | 0.251 U    | 12.5       | 12.58  | 99    |      |
| Cl5(118)                 | 0.177 J    | 13.1       | 12.58  | 103   |      |
| Cl6(128)                 | 0.251 pU   | 12.7       | 12.58  | 101   |      |
| Cl6(138)                 | 0.206 J    | 13.0       | 12.58  | 102   |      |
| Cl6(153)                 | 0.408 p    | 12.5       | 12.58  | 96    |      |
| Cl7(170)                 | 0.251 U    | 12.4       | 12.58  | 99    |      |
| Cl7(180)                 | 0.251 U    | 12.7       | 12.58  | 101   |      |
| Cl7(187)                 | 0.251 U    | 12.9       | 12.58  | 103   |      |
| Cl8(195)                 | 0.251 U    | 12.7       | 12.58  | 101   |      |
| Cl9(206)                 | 0.250 U    | 12.1       | 12.58  | 96    |      |
| Cl10(209)                | 0.251 U    | 12.4       | 12.58  | 99    |      |
| Surrogate Recoveries (%) |            |            |        |       |      |
| Cl3(34)                  | 97         | 91         |        |       |      |
| Cl6(152)                 | 89         | 90         |        |       |      |



# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** NBH14-0234

**Battelle ID** M8365MSD-P

**Sample Type** MSD

**Collection Date** 09/24/2014

**Extraction Date** 10/27/2014

**Analysis Date** 11/01/2014

**Analytical Instrument** ECD

**% Moisture** 1.03

**% Lipid** NA

**Matrix** SED

**Sample Size** 4.96

**Size Unit-Basis** G\_DRY

**Units** NG/G\_DRY

**Target % REC Qual RPD Qual**

| CI2(8)    | 11.2 | 12.60 | 89  | 2.2 |  |
|-----------|------|-------|-----|-----|--|
| CI3(18)   | 11.2 | 12.60 | 89  | 5.5 |  |
| CI3(28)   | 12.0 | 12.60 | 95  | 2.1 |  |
| CI4(44)   | 14.2 | 12.60 | 113 | 0.9 |  |
| CI4(52)   | 12.5 | 12.60 | 98  | 1.0 |  |
| CI4(66)   | 12.0 | 12.60 | 95  | 2.1 |  |
| CI5(101)  | 11.4 | 12.60 | 88  | 1.1 |  |
| CI5(105)  | 12.1 | 12.60 | 96  | 3.1 |  |
| CI5(118)  | 12.6 | 12.60 | 99  | 4.0 |  |
| CI6(128)  | 12.0 | 12.60 | 95  | 6.1 |  |
| CI6(138)  | 13.2 | 12.60 | 103 | 1.0 |  |
| CI6(153)  | 12.2 | 12.60 | 94  | 2.1 |  |
| CI7(170)  | 11.9 | 12.60 | 94  | 5.2 |  |
| CI7(180)  | 12.2 | 12.60 | 97  | 4.0 |  |
| CI7(187)  | 12.1 | 12.60 | 96  | 7.0 |  |
| CI8(195)  | 12.2 | 12.60 | 97  | 4.0 |  |
| CI9(206)  | 12.0 | 12.60 | 95  | 1.0 |  |
| CI10(209) | 12.5 | 12.60 | 99  | 0.0 |  |

### Surrogate Recoveries (%)

|          |    |
|----------|----|
| CI3(34)  | 86 |
| CI6(152) | 91 |

## Glossary of Data Qualifiers

**Flag: Application:**

---

- B Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
- D Dilution Run. Initial run outside linear range of instrument.
- E Estimate, result is greater than the highest concentration level in the calibration.
- H Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
- J Analyte detected below the sample-specific Reporting Limit (RL).
- m Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
- ME Significant Matrix Interference - Estimated value.
- MI Significant Matrix Interference - value could not be determined or estimated.
- n Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
- N Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
- NA Not applicable
- p Dual column value exceeds RPD criteria, dual column quantitative analysis only.
- T Holding Time (HT) exceeded.
- U Analyte not detected at 3:1 signal:noise ratio.

**QA/QC Summary  
Batch 14-0494**

|                   |   |
|-------------------|---|
| Project:          | USACE/NAE – New Bedford Harbor Long Term Monitoring |
| Parameters:       | PCB Congeners (NOAA 18)                             |
| Laboratory:       | Battelle, Norwell, MA                               |
| Matrix:           | Sediment  |
| Data Set:         | DP-14-0676  |
| Analytical SOP:   | 5-128   |
| Method Reference: | EPA Method 8081 and 8082A (modified)                |

**Sample Custody**

| Collection Date | Receipt Date    | Temp (°C) |
|-----------------|-----------------|-----------|
| 9/22-30/2014    | 9/26, 10/1/2014 | 1.0, 1.2  |

|                    |   |
|--------------------|---|
| Corrective Actions | NA  |
| Sample Storage     | The sediment samples were stored frozen until extraction. |
| Related samples    | NA  |

**METHOD SUMMARIES**

|                    |  |
|--------------------|--|
| Sample Preparation | <p>Prior to sediment extraction, an aliquot of approximately 30 g of wet sediment was placed on clean, labeled aluminum foil, covered and placed in a laboratory laminar flow hood to dry the sample to &lt;50% moisture. Aliquots of these dried samples were weighed into sample extraction vessels for sample extraction. Approximately 1 to 10 g sediment was weighed out for extraction (sample weight based on historical analysis results). The sediments were spiked with surrogates, extracted three times with methylene chloride, and the extracts combined, dried over anhydrous sodium sulfate, and concentrated. The concentrated extracts were processed through Florisil to isolate the PCBs, followed by activated copper treatment to remove sulfur. The cleaned extract was concentrated and fortified with internal standard (IS) compounds prior to analysis by GC/ECD.</p> |
| Prep Comments      | No comments.   |

|                   |   |
|-------------------|---|
| Analysis          | <p>PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration.</p>  |
| Analysis Comments | <ul style="list-style-type: none"> <li>Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from</li> </ul> |

**QA/QC Summary  
Batch 14-0494**

|  |   |
|--|---|
|  | <p>additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.</p> <ul style="list-style-type: none"> <li>• In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.</li> <li>• In cases where p qualifiers are present, integrations and data were reviewed.</li> <li>• The internal standard area for the secondary column PCB 96 is higher than the acceptable range in sample M8355-P(2). All target analytes quantified vs. PCB 96 except the SIS PCB 34 are reported from diution. As all surrogates pass in the affected sample, the sample is reported.</li> <li>• Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak. Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.</li> </ul> |
|--|---|

| Holding Times | Extraction Date(s) | Analysis Date(s)        |
|---------------|--------------------|-------------------------|
|               | 10/27/2014         | 10/31/2014, 11/1-2/2014 |

|                       |  |
|-----------------------|--|
| Procedural Blank (PB) | A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination. |
| Blank value <5x ssMDL | No exceedences noted.  |
| Samples >5X PB        | No comments.   |

|                          |   |
|--------------------------|---|
| Laboratory Control Spike | A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. |
| 70-130% recovery         | No exceedences noted.   |
| <30% RPD                 | No comments.  |

|  |   |
|--|---|
| Matrix Spike (MS)/Matrix Spike Duplicate (MSD) | A MS/MSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. |
| 70-130% recovery                               | No exceedences noted  |
| <30% RPD                                       | No comments.  |
| Spike must be >5x bkgd conc.                   |   |

**QA/QC Summary  
Batch 14-0494**

|                                   |   |
|-----------------------------------|---|
| Sample Duplicate (DUP)            | A laboratory duplicate of one sediment was prepared with the analytical batch. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. <b>NOTE: This QC sample was inadvertently included in the sample batch instead of the requested SRM.</b> |
| <30% RPD<br>Conc must be >10X MDL | No exceedances noted.<br>No comments.   |

|                    |   |
|--------------------|---|
| Surrogate Recovery | Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency. |
| 40-120% recovery   | No exceedances noted.<br>No comments.   |

|                            |  |
|----------------------------|--|
| Initial Calibration (ICAL) | The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF). |
| $R^2 \geq 0.995$           | No exceedances noted.<br>No comments.  |

|  |   |
|--|---|
| Independent Calibration Check (ICC)        | The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL. |
| $\leq 20\%$ difference individual and mean | No exceedances noted.<br>No comments.   |

|  |   |
|--|---|
| Continuing Calibration Verification (CCV)                      | Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid. |
| $\leq 20\%$ difference individual; $\leq 15\%$ difference mean | No exceedances noted.<br>No comments.   |

## Report Project Data Set MOOs

**Project Title:** USACE/NAE - New Bedford Harbor LTM

**Data Set Number:** DP-14-0676

**Project Number:** 100053747

**Prep Batch Number:** 14-0494

**Test Code (Matrix Type):** Master\_128(S)

| <b>QC_PARAMETER:</b>                   | <b>Exceed:</b> | <b>Contg.:</b> | <b>JUSTIFICATION:</b> |
|--|----------------|----------------|-----------------------|
| Procedural Blank                       | 0              | 0              | None                  |
| PB Measurement Quality Objective       | 0              | 0              | None                  |
| Laboratory Control Sample              | 0              | 0              | None                  |
| Matrix Spike Recovery                  | 0              | 0              | None                  |
| Matrix Spike/Spike Duplicate Precision | 0              | 0              | None                  |
| Standard Reference Material Accuracy   | NA             | NA             | NA                    |
| Analytical Duplicate Precision         | 0              | 0              | None                  |
| Analytical Triplicate Precision        | NA             | NA             | NA                    |
| Surrogate Compound Recovery            | 0              | 0              | None                  |
| Control Oil                            | NA             | NA             | NA                    |
| Instrument Calibration                 | 0              | 0              | None                  |
| Independent Calibration Check Solution | 0              | 0              | None                  |
| Continuing Calibration Verification    | 0              | 0              | None                  |

## BATTELLE - DUXBURY OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** USACE/NAE - New Bedford Harbor LTM      **Data Set Number:** DP-14-0676  
**Project Number:** 100053747      **Prep Batch Number:** 14-0494  
**Entered By:** Richard Restucci Jr      **Entered On:** 11/20/2014  
**Test Code (Matrix Type):** Master\_128(S)

Integrations by Rich Restucci.  
RR 11/20/14

Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak.

Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.  
RR 12/8/14

Method MM0417C utilizes the quant sheets from MM0417B.  
RR 11/20/14

Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.  
RR 11/20/14

In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.  
RR 11/20/14

In cases where p qualifiers are present, integrations and data were reviewed.  
RR 11/20/14

The internal standard area for the secondary column PCB 96 is higher than the acceptable range in sample M8355-P(2). All target analytes quantified vs. PCB 96 except the SIS PCB 34 are reported from dilution. As all surrogates pass in the affected sample, the sample is reported.  
RR 11/20/14

**Task Leader Approval:**



Kevin McInerney  
2014.12.10 10:22:55 -05'00'

**Supervisor Approval:**



Carole McCarthy  
2014.12.10 10:24:03 -05'00'

**PM Approval:**

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2021371 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2857033 |

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(+)  
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| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | Cl5(96) | 2882190 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | Cl5(96) | 3044845 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | Cl5(96) | 3329406 |       |
| SM0420.S  | M7369.D | M8156-P(2)    | SA    | Cl5(96) | 2970953 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | Cl5(96) | 3457950 |       |
| SM0420.S  | M7371.D | M8163-P(2)    | SA    | Cl5(96) | 3262719 |       |
| SM0420.S  | M7372.D | M8164-P(2)    | SA    | Cl5(96) | 3135901 |       |
| SM0420.S  | M7373.D | M8165-P(2)    | SA    | Cl5(96) | 2889280 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | Cl5(96) | 3598343 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | Cl5(96) | 3190390 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | Cl5(96) | 3398551 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | Cl5(96) | 3346131 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | Cl5(96) | 3751008 |       |
| SM0420.S  | M7379.D | M8355-P(2)    | SA    | Cl5(96) | 2995612 |       |
| SM0420.S  | M7380.D | M8358-P(2)    | SA    | Cl5(96) | 2680242 |       |
| SM0420.S  | M7381.D | M8359-P(2)    | SA    | Cl5(96) | 3315182 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | Cl5(96) | 3821195 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | Cl5(96) | 3843951 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | Cl5(96) | 3569199 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | Cl5(96) | 3353200 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | Cl5(96) | 3992391 |       |
| SM0420.S  | M7387.D | M8373-P(2)    | SA    | Cl5(96) | 2863330 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | Cl5(96) | 3628030 |       |
| SM0420.S  | M7389.D | M8383-P(2)    | SA    | Cl5(96) | 3793854 |       |
| SM0420.S  | M7390.D | M8384-P(2)    | SA    | Cl5(96) | 3341359 |       |
| SM0420.S  | M7391.D | M8385-P(2)    | SA    | Cl5(96) | 3888502 |       |
| SM0420.S  | M7392.D | M8386-P(2)    | SA    | Cl5(96) | 3459587 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | Cl5(96) | 3790051 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | Cl5(96) | 3466074 |       |
| SM0420.S  | M7395.D | M8158-P-D(4)  | SA    | Cl5(96) | 3279599 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | Cl5(96) | 3302286 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|-----------------|-------|---------|---------|-------|
| SM0420.S  | M7397.D | M8164-P-D(4)    | SA    | Cl5(96) | 3315341 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)    | SA    | Cl5(96) | 3372956 |       |
| SM0420.S  | M7399.D | IE07            | CCV   | Cl5(96) | 3678142 |       |
| SM0420.S  | M7400.D | M8166-P-D(4)    | SA    | Cl5(96) | 3157509 |       |
| SM0420.S  | M7401.D | M8166DUP-P-D(4) | QADU  | Cl5(96) | 3336950 |       |
| SM0420.S  | M7402.D | M8347-P-D(4)    | SA    | Cl5(96) | 3090849 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)    | SA    | Cl5(96) | 3379773 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)    | SA    | Cl5(96) | 3343615 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)    | SA    | Cl5(96) | 3679872 |       |
| SM0420.S  | M7409.D | M8372-P-D(4)    | SA    | Cl5(96) | 3236758 |       |
| SM0420.S  | M7410.D | IE08            | CCV   | Cl5(96) | 3923147 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)    | SA    | Cl5(96) | 3271043 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)    | SA    | Cl5(96) | 3422873 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)    | SA    | Cl5(96) | 3468014 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)    | SA    | Cl5(96) | 3195384 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)    | SA    | Cl5(96) | 3347894 |       |
| SM0420.S  | M7421.D | IE07            | CCV   | Cl5(96) | 3669074 |       |
| SM0420.S  | M7427.D | M8355-P-D(5)    | SA    | Cl5(96) | 3438092 |       |
| SM0420.S  | M7432.D | IE08            | CCV   | Cl5(96) | 3835624 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:    | AREA:   |
|-----------|---------|--------|-------|----------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161) | 4304957 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161) | 4562564 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161) | 4815577 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161) | 5366502 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161) | 5424577 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161) | 5785136 |

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 (+) 9631155  
 (-) 2407789

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|---------------|-------|----------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 5353469 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | Cl6(161) | 5955181 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | Cl6(161) | 5449036 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | Cl6(161) | 5532874 |       |
| SM0420.S  | M7369.D | M8156-P(2)    | SA    | Cl6(161) | 5526953 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | Cl6(161) | 7336190 |       |
| SM0420.S  | M7371.D | M8163-P(2)    | SA    | Cl6(161) | 8389753 |       |
| SM0420.S  | M7372.D | M8164-P(2)    | SA    | Cl6(161) | 4581626 |       |
| SM0420.S  | M7373.D | M8165-P(2)    | SA    | Cl6(161) | 4967334 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | Cl6(161) | 8569371 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | Cl6(161) | 7781021 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | Cl6(161) | 8055989 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | Cl6(161) | 7516612 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | Cl6(161) | 7641392 |       |
| SM0420.S  | M7379.D | M8355-P(2)    | SA    | Cl6(161) | 8788341 |       |
| SM0420.S  | M7380.D | M8358-P(2)    | SA    | Cl6(161) | 6090720 |       |
| SM0420.S  | M7381.D | M8359-P(2)    | SA    | Cl6(161) | 5136392 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | Cl6(161) | 7831186 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | Cl6(161) | 7749962 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | Cl6(161) | 6782213 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | Cl6(161) | 6656149 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | Cl6(161) | 8711899 |       |
| SM0420.S  | M7387.D | M8373-P(2)    | SA    | Cl6(161) | 4784807 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | Cl6(161) | 7918673 |       |
| SM0420.S  | M7389.D | M8383-P(2)    | SA    | Cl6(161) | 5941149 |       |
| SM0420.S  | M7390.D | M8384-P(2)    | SA    | Cl6(161) | 5676223 |       |
| SM0420.S  | M7391.D | M8385-P(2)    | SA    | Cl6(161) | 6079238 |       |
| SM0420.S  | M7392.D | M8386-P(2)    | SA    | Cl6(161) | 5276256 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | Cl6(161) | 7630537 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | Cl6(161) | 7838020 |       |
| SM0420.S  | M7395.D | M8158-P-D(4)  | SA    | Cl6(161) | 7615896 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | Cl6(161) | 7591863 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|-----------------|-------|----------|---------|-------|
| SM0420.S  | M7397.D | M8164-P-D(4)    | SA    | Cl6(161) | 7656844 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)    | SA    | Cl6(161) | 7799583 |       |
| SM0420.S  | M7399.D | IE07            | CCV   | Cl6(161) | 8525114 |       |
| SM0420.S  | M7400.D | M8166-P-D(4)    | SA    | Cl6(161) | 6862045 |       |
| SM0420.S  | M7401.D | M8166DUP-P-D(4) | QADU  | Cl6(161) | 7597941 |       |
| SM0420.S  | M7402.D | M8347-P-D(4)    | SA    | Cl6(161) | 6842783 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)    | SA    | Cl6(161) | 8172873 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)    | SA    | Cl6(161) | 7623060 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)    | SA    | Cl6(161) | 8593347 |       |
| SM0420.S  | M7409.D | M8372-P-D(4)    | SA    | Cl6(161) | 7104180 |       |
| SM0420.S  | M7410.D | IE08            | CCV   | Cl6(161) | 8844389 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)    | SA    | Cl6(161) | 7327054 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)    | SA    | Cl6(161) | 8205035 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)    | SA    | Cl6(161) | 8027854 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)    | SA    | Cl6(161) | 7156403 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)    | SA    | Cl6(161) | 7813756 |       |
| SM0420.S  | M7421.D | IE07            | CCV   | Cl6(161) | 8207625 |       |
| SM0420.S  | M7427.D | M8355-P-D(5)    | SA    | Cl6(161) | 8008160 |       |
| SM0420.S  | M7432.D | IE08            | CCV   | Cl6(161) | 8717281 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96)    | 12822282 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96)    | 12416297 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96)    | 13716870 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96)    | 14992953 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96)    | 15446142 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96)    | 15534608 |
|           |         |        |       | <b>L3</b>  | 13716870 |
|           |         |        |       | <b>(+)</b> | 27433739 |
|           |         |        |       | <b>(-)</b> | 6858435  |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13969685 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | CI5(96) | 14867149 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | CI5(96) | 14993632 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | CI5(96) | 15833236 |       |
| SM0420.S  | M7369.D | M8156-P(2)    | SA    | CI5(96) | 13601396 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | CI5(96) | 14417732 |       |
| SM0420.S  | M7371.D | M8163-P(2)    | SA    | CI5(96) | 14729978 |       |
| SM0420.S  | M7372.D | M8164-P(2)    | SA    | CI5(96) | 12791436 |       |
| SM0420.S  | M7373.D | M8165-P(2)    | SA    | CI5(96) | 14490294 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | CI5(96) | 15090254 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | CI5(96) | 15038630 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | CI5(96) | 15534742 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | CI5(96) | 16866362 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | CI5(96) | 16746505 |       |
| SM0420.S  | M7379.D | M8355-P(2)    | SA    | CI5(96) | 34038957 | >     |
| SM0420.S  | M7380.D | M8358-P(2)    | SA    | CI5(96) | 15082738 |       |
| SM0420.S  | M7381.D | M8359-P(2)    | SA    | CI5(96) | 15174739 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | CI5(96) | 15956584 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | CI5(96) | 15872934 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | CI5(96) | 16200820 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | CI5(96) | 14777351 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | CI5(96) | 15350953 |       |
| SM0420.S  | M7387.D | M8373-P(2)    | SA    | CI5(96) | 12254187 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | CI5(96) | 17623513 |       |
| SM0420.S  | M7389.D | M8383-P(2)    | SA    | CI5(96) | 11199480 |       |
| SM0420.S  | M7390.D | M8384-P(2)    | SA    | CI5(96) | 12907681 |       |
| SM0420.S  | M7391.D | M8385-P(2)    | SA    | CI5(96) | 13172187 |       |
| SM0420.S  | M7392.D | M8386-P(2)    | SA    | CI5(96) | 12144629 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | CI5(96) | 15553799 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | CI5(96) | 16633640 |       |
| SM0420.S  | M7395.D | M8158-P-D(4)  | SA    | CI5(96) | 16468943 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | CI5(96) | 15692876 |       |

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**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|-----------------|-------|---------|----------|-------|
| SM0420.S  | M7397.D | M8164-P-D(4)    | SA    | Cl5(96) | 15673249 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)    | SA    | Cl5(96) | 16231611 |       |
| SM0420.S  | M7399.D | IE07            | CCV   | Cl5(96) | 18104292 |       |
| SM0420.S  | M7400.D | M8166-P-D(4)    | SA    | Cl5(96) | 17039075 |       |
| SM0420.S  | M7401.D | M8166DUP-P-D(4) | QADU  | Cl5(96) | 15884478 |       |
| SM0420.S  | M7402.D | M8347-P-D(4)    | SA    | Cl5(96) | 15749820 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)    | SA    | Cl5(96) | 15727574 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)    | SA    | Cl5(96) | 16269025 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)    | SA    | Cl5(96) | 15794122 |       |
| SM0420.S  | M7409.D | M8372-P-D(4)    | SA    | Cl5(96) | 16613388 |       |
| SM0420.S  | M7410.D | IE08            | CCV   | Cl5(96) | 19800765 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)    | SA    | Cl5(96) | 15708846 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)    | SA    | Cl5(96) | 15858214 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)    | SA    | Cl5(96) | 15852208 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)    | SA    | Cl5(96) | 16476175 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)    | SA    | Cl5(96) | 15973481 |       |
| SM0420.S  | M7421.D | IE07            | CCV   | Cl5(96) | 19000429 |       |
| SM0420.S  | M7427.D | M8355-P-D(5)    | SA    | Cl5(96) | 16120840 |       |
| SM0420.S  | M7432.D | IE08            | CCV   | Cl5(96) | 19368007 |       |

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**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161)   | 28199596 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161)   | 27129752 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161)   | 29503850 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161)   | 34497986 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161)   | 34872167 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161)   | 28894537 |
|           |         |        |       | <b>L3</b>  | 29503850 |
|           |         |        |       | <b>(+)</b> | 59007699 |
|           |         |        |       | <b>(-)</b> | 14751925 |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|---------------|-------|----------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 30447371 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | Cl6(161) | 32248189 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | Cl6(161) | 30888653 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | Cl6(161) | 33282462 |       |
| SM0420.S  | M7369.D | M8156-P(2)    | SA    | Cl6(161) | 25848095 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | Cl6(161) | 30068118 |       |
| SM0420.S  | M7371.D | M8163-P(2)    | SA    | Cl6(161) | 27890994 |       |
| SM0420.S  | M7372.D | M8164-P(2)    | SA    | Cl6(161) | 23663248 |       |
| SM0420.S  | M7373.D | M8165-P(2)    | SA    | Cl6(161) | 28235818 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | Cl6(161) | 31678881 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | Cl6(161) | 38922832 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | Cl6(161) | 33866995 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | Cl6(161) | 40275220 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | Cl6(161) | 39435531 |       |
| SM0420.S  | M7379.D | M8355-P(2)    | SA    | Cl6(161) | 23315495 |       |
| SM0420.S  | M7380.D | M8358-P(2)    | SA    | Cl6(161) | 29331208 |       |
| SM0420.S  | M7381.D | M8359-P(2)    | SA    | Cl6(161) | 27640216 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | Cl6(161) | 37894546 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | Cl6(161) | 36512169 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | Cl6(161) | 36953227 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | Cl6(161) | 32303495 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | Cl6(161) | 31924071 |       |
| SM0420.S  | M7387.D | M8373-P(2)    | SA    | Cl6(161) | 26009159 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | Cl6(161) | 38521988 |       |
| SM0420.S  | M7389.D | M8383-P(2)    | SA    | Cl6(161) | 19518591 |       |
| SM0420.S  | M7390.D | M8384-P(2)    | SA    | Cl6(161) | 22544902 |       |
| SM0420.S  | M7391.D | M8385-P(2)    | SA    | Cl6(161) | 30967424 |       |
| SM0420.S  | M7392.D | M8386-P(2)    | SA    | Cl6(161) | 21914347 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | Cl6(161) | 36851139 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | Cl6(161) | 41256166 |       |
| SM0420.S  | M7395.D | M8158-P-D(4)  | SA    | Cl6(161) | 40837680 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | Cl6(161) | 38261325 |       |

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**BATCH:** 14-0494

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|-----------------|-------|----------|----------|-------|
| SM0420.S  | M7397.D | M8164-P-D(4)    | SA    | Cl6(161) | 38959030 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)    | SA    | Cl6(161) | 39829654 |       |
| SM0420.S  | M7399.D | IE07            | CCV   | Cl6(161) | 44507298 |       |
| SM0420.S  | M7400.D | M8166-P-D(4)    | SA    | Cl6(161) | 41980364 |       |
| SM0420.S  | M7401.D | M8166DUP-P-D(4) | QADU  | Cl6(161) | 38768920 |       |
| SM0420.S  | M7402.D | M8347-P-D(4)    | SA    | Cl6(161) | 38290841 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)    | SA    | Cl6(161) | 37236443 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)    | SA    | Cl6(161) | 40534216 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)    | SA    | Cl6(161) | 38752350 |       |
| SM0420.S  | M7409.D | M8372-P-D(4)    | SA    | Cl6(161) | 39567262 |       |
| SM0420.S  | M7410.D | IE08            | CCV   | Cl6(161) | 46635078 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)    | SA    | Cl6(161) | 39087783 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)    | SA    | Cl6(161) | 36778575 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)    | SA    | Cl6(161) | 36940889 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)    | SA    | Cl6(161) | 41396974 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)    | SA    | Cl6(161) | 40415026 |       |
| SM0420.S  | M7421.D | IE07            | CCV   | Cl6(161) | 45785145 |       |
| SM0420.S  | M7427.D | M8355-P-D(5)    | SA    | Cl6(161) | 39272119 |       |
| SM0420.S  | M7432.D | IE08            | CCV   | Cl6(161) | 44531650 |       |

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**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417F.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2038180 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2539311 |

L3 2225995  
 (+) 4451990  
 (-) 1112997

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | Cl5(96) | 2882190 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | Cl5(96) | 3044845 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | Cl5(96) | 3356394 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | Cl5(96) | 3457950 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | Cl5(96) | 3896128 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | Cl5(96) | 3789903 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | Cl5(96) | 3939877 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | Cl5(96) | 3346131 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | Cl5(96) | 3751008 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | Cl5(96) | 3821195 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | Cl5(96) | 3843951 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | Cl5(96) | 3569199 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | Cl5(96) | 3449023 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | Cl5(96) | 3992391 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | Cl5(96) | 3657950 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | Cl5(96) | 3790051 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | Cl5(96) | 3466074 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | Cl5(96) | 3302286 |       |
| SM0420.S  | M7397.D | M8164-P-D(4)  | SA    | Cl5(96) | 3315341 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)  | SA    | Cl5(96) | 3372956 |       |
| SM0420.S  | M7399.D | IE07          | CCV   | Cl5(96) | 3678142 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)  | SA    | Cl5(96) | 3477013 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)  | SA    | Cl5(96) | 3343615 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)  | SA    | Cl5(96) | 3679872 |       |
| SM0420.S  | M7410.D | IE08          | CCV   | Cl5(96) | 4018721 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)  | SA    | Cl5(96) | 3271043 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)  | SA    | Cl5(96) | 3422873 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)  | SA    | Cl5(96) | 3468014 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)  | SA    | Cl5(96) | 3195384 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)  | SA    | Cl5(96) | 3347894 |       |
| SM0420.S  | M7421.D | IE07          | CCV   | Cl5(96) | 3777758 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0494

**METHOD:** MM0417F.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 12872032 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 13386960 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 13612237 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 14869473 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 15494530 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 15194166 |

L3 13612237  
 (+) 27224474  
 (-) 6806118

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13936712 |       |
| SM0420.S  | M7366.D | IE08          | CCV   | CI5(96) | 15017810 |       |
| SM0420.S  | M7367.D | CD582PB-P(0)  | PB    | CI5(96) | 15557332 |       |
| SM0420.S  | M7368.D | CD583LCS-P(0) | LCS   | CI5(96) | 15516830 |       |
| SM0420.S  | M7370.D | M8158-P(2)    | SA    | CI5(96) | 14427513 |       |
| SM0420.S  | M7374.D | M8166-P(2)    | SA    | CI5(96) | 16399895 |       |
| SM0420.S  | M7375.D | M8166DUP-P(2) | QADU  | CI5(96) | 14849979 |       |
| SM0420.S  | M7376.D | M8347-P(2)    | SA    | CI5(96) | 15439767 |       |
| SM0420.S  | M7377.D | IE07          | CCV   | CI5(96) | 16778147 |       |
| SM0420.S  | M7378.D | M8348-P(2)    | SA    | CI5(96) | 16498668 |       |
| SM0420.S  | M7382.D | M8365-P(2)    | SA    | CI5(96) | 16031325 |       |
| SM0420.S  | M7383.D | M8365MS-P(0)  | MS    | CI5(96) | 15924736 |       |
| SM0420.S  | M7384.D | M8365MSD-P(0) | MSD   | CI5(96) | 16152323 |       |
| SM0420.S  | M7385.D | M8371-P(2)    | SA    | CI5(96) | 14448956 |       |
| SM0420.S  | M7386.D | M8372-P(2)    | SA    | CI5(96) | 14437474 |       |
| SM0420.S  | M7388.D | IE08          | CCV   | CI5(96) | 16699975 |       |
| SM0420.S  | M7393.D | M8403-P(2)    | SA    | CI5(96) | 15506717 |       |
| SM0420.S  | M7394.D | M8156-P-D(4)  | SA    | CI5(96) | 16621213 |       |
| SM0420.S  | M7396.D | M8163-P-D(4)  | SA    | CI5(96) | 15622191 |       |
| SM0420.S  | M7397.D | M8164-P-D(4)  | SA    | CI5(96) | 15602009 |       |
| SM0420.S  | M7398.D | M8165-P-D(4)  | SA    | CI5(96) | 16177406 |       |
| SM0420.S  | M7399.D | IE07          | CCV   | CI5(96) | 17779911 |       |
| SM0420.S  | M7404.D | M8355-P-D(4)  | SA    | CI5(96) | 16006335 |       |
| SM0420.S  | M7405.D | M8358-P-D(4)  | SA    | CI5(96) | 16181889 |       |
| SM0420.S  | M7406.D | M8359-P-D(4)  | SA    | CI5(96) | 15729907 |       |
| SM0420.S  | M7410.D | IE08          | CCV   | CI5(96) | 19449225 |       |
| SM0420.S  | M7411.D | M8373-P-D(4)  | SA    | CI5(96) | 15691204 |       |
| SM0420.S  | M7412.D | M8383-P-D(4)  | SA    | CI5(96) | 15625537 |       |
| SM0420.S  | M7413.D | M8384-P-D(4)  | SA    | CI5(96) | 15873942 |       |
| SM0420.S  | M7414.D | M8385-P-D(4)  | SA    | CI5(96) | 16417848 |       |
| SM0420.S  | M7415.D | M8386-P-D(4)  | SA    | CI5(96) | 15959738 |       |
| SM0420.S  | M7421.D | IE07          | CCV   | CI5(96) | 18738277 |       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE PREPARATION RECORDS

|   |                              |
|---|------------------------------|
| <b><u>Project Title(s)</u></b>                | <b><u>Project No.(s)</u></b> |
| USACE/NAE - New Bedford Harbor LTM Study      | 100053747                    |
| <b>14-0494</b>                                |                              |
| <b>USACE-NAE New Bedford Harbor LTM Study</b> |                              |
| <b>SED</b>                                    |                              |
| SOP Numbers (see workplan for modifications)  |                              |
| ExtractionSOP No.                             | 5-192                        |
| CleanupSOP No.                                | 5-327                        |
| CleanupSOP No.                                | 5-328                        |

| This Batch Contains The Following Samples: |            |            |         |         |
|--|------------|------------|---------|---------|
| CD582PB-P                                  | M8165-P    | M8358-P    | M8372-P | M8403-P |
| CD583LCS-P                                 | M8166-P    | M8359-P    | M8373-P |         |
| M8156-P                                    | M8166DUP-P | M8365-P    | M8383-P |         |
| M8158-P                                    | M8347-P    | M8365MS-P  | M8384-P |         |
| M8163-P                                    | M8348-P    | M8365MSD-P | M8385-P |         |
| M8164-P                                    | M8355-P    | M8371-P    | M8386-P |         |

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Samuel Guimaraes

| Approved By:     | Date       | Initials |
|------------------|------------|----------|
| Samuel Guimaraes | 10/31/2014 | SG       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|   |  |
|---|--|
| <b>Requested On/By:</b> 10/20/2014 KAW        | <b>Purpose:</b> Sample Preparation       |
| <b>Relinquished On/By:</b> 10/20/2014 MDS     | <b>Last Activity:</b> Return             |
| <b>Accepted On/By:</b> 10/20/2014 KAW         | <b>Returned On/To:</b> 10/20/2014 MDS    |
| <b>Stored In Facility:</b> Sample Preparation | <b>Returned To Facility:</b> Custody: NA |
| <b>Stored Until:</b> 10/20/2014               |  |
| <b>Stored Comment:</b> NA                     | <b>Returned Comment:</b> NA              |

| No.                  | BDO-ID: | Ctrs | *  | Condition:                 | Custody Comment: |
|----------------------|---------|------|----|----------------------------|------------------|
| 1                    | M8156   | 1    | -- | Intact                     | NA               |
| 2                    | M8158   | 1    | -- | Intact                     | NA               |
| 3                    | M8163   | 1    | -- | Intact                     | NA               |
| 4                    | M8164   | 1    | -- | Intact                     | NA               |
| 5                    | M8165   | 1    | -- | Intact                     | NA               |
| 6                    | M8166   | 1    | -- | Intact                     | NA               |
| 7                    | M8347   | 1    | -- | Intact                     | NA               |
| 8                    | M8348   | 1    | -- | Intact                     | NA               |
| 9                    | M8355   | 1    | -- | Intact                     | NA               |
| 10                   | M8358   | 1    | -- | Intact                     | NA               |
| 11                   | M8359   | 1    | -- | Intact                     | NA               |
| 12                   | M8365   | 1    | -- | Intact                     | NA               |
| 13                   | M8371   | 1    | -- | Intact                     | NA               |
| 14                   | M8372   | 1    | -- | Intact                     | NA               |
| 15                   | M8373   | 1    | -- | Intact                     | NA               |
| 16                   | M8383   | 1    | -- | Intact                     | NA               |
| 17                   | M8384   | 1    | -- | Intact                     | NA               |
| 18                   | M8385   | 1    | -- | Intact                     | NA               |
| 19                   | M8386   | 1    | -- | Intact                     | NA               |
| 20                   | M8403   | 1    | -- | Intact                     | NA               |
| <b>Total Samples</b> |         | 20   |    | * "C" = Consumed Container |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE IDENTIFICATION PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Description                          |
|------------|--------------------------------------|
| CD582PB-P  | Procedural Blank                     |
| CD583LCS-P | Laboratory Control Sample            |
| M8156-P    | NBH14-0017                           |
| M8158-P    | NBH14-0025                           |
| M8163-P    | NBH14-0045                           |
| M8164-P    | NBH14-0049                           |
| M8165-P    | NBH14-0053                           |
| M8166-P    | NBH14-0061                           |
| M8166DUP-P | Lab Duplicate of NBH14-0061          |
| M8347-P    | NBH14-0057                           |
| M8348-P    | NBH14-0069                           |
| M8355-P    | NBH14-0203                           |
| M8358-P    | NBH14-0215                           |
| M8359-P    | NBH14-0219                           |
| M8365-P    | NBH14-0234                           |
| M8365MS-P  | Matrix Spike of NBH14-0234           |
| M8365MSD-P | Matrix Spike Duplicate of NBH14-0234 |
| M8371-P    | NBH14-0257                           |
| M8372-P    | NBH14-0261                           |
| M8373-P    | NBH14-0265                           |
| M8383-P    | NBH14-0314                           |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

**BATTELLE - DUXBURY OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study  
SED**

| <b>Sample ID</b> | <b>Description</b> |
|------------------|--------------------|
| M8384-P          | NBH14-0318         |
| M8385-P          | NBH14-0322         |
| M8386-P          | NBH14-0326         |
| M8403-P          | NBH14-0165         |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD582PB-P  | NA    | -- | NA           | NA              | NA          | 10.02              | 95.84     | 4.16       | 9.60               |
| CD583LCS-P | NA    | -- | NA           | NA              | NA          | 9.98               | 95.84     | 4.16       | 9.56               |
| M8156-P    | 1     | -- | 1.11         | 2.70            | 2.63        | 1.03               | 95.60     | 4.40       | 0.98               |
| M8158-P    | 1     | -- | 1.12         | 2.98            | 2.97        | 2.63               | 99.46     | 0.54       | 2.62               |
| M8163-P    | 1     | -- | 1.10         | 3.01            | 2.84        | 1.00               | 91.10     | 8.90       | 0.91               |
| M8164-P    | 1     | -- | 1.10         | 2.95            | 2.83        | 1.00               | 93.51     | 6.49       | 0.94               |
| M8165-P    | 1     | -- | 1.12         | 3.03            | 2.99        | 2.56               | 97.91     | 2.09       | 2.51               |
| M8166-P    | 1     | -- | 1.11         | 3.02            | 2.97        | 1.06               | 97.38     | 2.62       | 1.03               |
| M8166DUP-P | 1     | -- | 1.10         | 3.00            | 2.92        | 1.06               | 95.79     | 4.21       | 1.02               |
| M8347-P    | 1     | -- | 1.11         | 2.97            | 2.93        | 1.18               | 97.85     | 2.15       | 1.15               |
| M8348-P    | 1     | -- | 1.11         | 3.05            | 3.04        | 1.01               | 99.48     | 0.52       | 1.00               |
| M8355-P    | 1     | -- | 1.11         | 2.96            | 2.53        | 1.07               | 76.76     | 23.24      | 0.82               |
| M8358-P    | 1     | -- | 1.10         | 3.03            | 2.82        | 1.12               | 89.12     | 10.88      | 1.00               |
| M8359-P    | 1     | -- | 1.09         | 3.02            | 3.00        | 1.08               | 98.96     | 1.04       | 1.07               |
| M8365-P    | 1     | -- | 1.11         | 3.06            | 3.05        | 10.15              | 99.49     | 0.51       | 10.10              |
| M8365MS-P  | 1     | -- | 1.09         | 3.00            | 2.99        | 5.00               | 99.48     | 0.52       | 4.97               |
| M8365MSD-P | 1     | -- | 1.10         | 3.05            | 3.03        | 5.01               | 98.97     | 1.03       | 4.96               |
| M8371-P    | 1     | -- | 1.10         | 3.04            | 2.99        | 2.53               | 97.42     | 2.58       | 2.46               |
| M8372-P    | 1     | -- | 1.12         | 3.07            | 3.06        | 2.50               | 99.49     | 0.51       | 2.49               |
| M8373-P    | 1     | -- | 1.12         | 3.07            | 3.04        | 2.54               | 98.46     | 1.54       | 2.50               |
| M8383-P    | 1     | -- | 1.12         | 2.76            | 2.72        | 2.53               | 97.56     | 2.44       | 2.47               |
| M8384-P    | 1     | -- | 1.09         | 2.96            | 2.94        | 2.52               | 98.93     | 1.07       | 2.49               |
| M8385-P    | 1     | -- | 1.10         | 3.01            | 2.90        | 2.59               | 94.24     | 5.76       | 2.44               |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| M8386-P    | 1     | -- | 1.11         | 2.96            | 2.87        | 2.54               | 95.14     | 4.86       | 2.42               |
| M8403-P    | 1     | -- | 1.10         | 3.02            | 3.00        | 1.00               | 98.96     | 1.04       | 0.99               |

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>Validation of:</b><br>Wet Wt. | <b>Performed:</b><br>10/31/14 SG |
|----------------------------------|----------------------------------|

| Sample ID: | Comments:   | Reference: |
|------------|---|------------|
| CD582PB-P  | Average of percent dry weights from authentic samples in Batch No. 14-0494 USACE-NAE New Bedford Harbor LTM Study | NA         |
| CD583LCS-P | Average of percent dry weights from authentic samples in Batch No. 14-0494 USACE-NAE New Bedford Harbor LTM Study | NA         |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed

## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| CD582PB-P  | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| CD583LCS-P | HX10        | LCS/MS | 8        | 75             | 10/27/14 SG               | KAW       | NA      |
| CD583LCS-P | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8156-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8158-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8163-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8164-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8165-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8166-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8166DUP-P | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8347-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8348-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8355-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8358-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8359-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8365-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8365MS-P  | HX10        | LCS/MS | 8        | 125            | 10/27/14 SG               | KAW       | NA      |
| M8365MS-P  | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8365MSD-P | HX10        | LCS/MS | 8        | 125            | 10/27/14 SG               | KAW       | NA      |
| M8365MSD-P | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8371-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8372-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8373-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8383-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8384-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8385-P    | ID59        | SIS    | 3        | 400            | 10/27/14 SG               | KAW       | NA      |



## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | Standard ID | Type | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|-----------|-------------|------|----------|----------------|---------------------------|-----------|---------|
| M8386-P   | ID59        | SIS  | 3        | 400            | 10/27/14 SG               | KAW       | NA      |
| M8403-P   | ID59        | SIS  | 3        | 400            | 10/27/14 SG               | KAW       | NA      |

Syringes/Pipettes Used:

| Std ID | Type    | Syr/Pip   |
|--------|---------|-----------|
| HX10   | Pipette | H0500262B |
| ID59   | Pipette | B1100330B |



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
SAMPLE EXTRACTION FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|------------|------------------|-------------------|------------------|----------|-----------|-------|---------|
| CD582PB-P  | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| CD583LCS-P | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8156-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8158-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8163-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8164-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8165-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8166-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8166DUP-P | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8347-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8348-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8355-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8358-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8359-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8365-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8365MS-P  | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8365MSD-P | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8371-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8372-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8373-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8383-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8384-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8385-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8386-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |
| M8403-P    | 10/27/14 KAW     | 10/27/14 SG       | 10/27/14 SG      | NA       | NA        | 65    | NA      |

## BATTELLE - DUXBURY OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|

**Reagents:**

| Name           | Expires  | Lot No     | Procedure  | Comments |
|----------------|----------|------------|--|----------|
| Sodium Sulfate | 11/04/14 | 0000084928 | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |

**Solvents:**

| Name            | Lot No     | Comments                                |
|-----------------|------------|---|
| DCM Cycletainer | 0000092595 |   |
| Hexane          | 0000078260 | Solvent exchanged during concentration. |



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**BATTELLE - DUXBURY OPERATIONS  
EXTRACT CLEANUP FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| CD582PB-P(0)  | 10/29/14 | SG    | NA       |
| CD583LCS-P(0) | 10/29/14 | SG    | NA       |
| M8156-P(0)    | 10/29/14 | SG    | NA       |
| M8158-P(0)    | 10/29/14 | SG    | NA       |
| M8163-P(0)    | 10/29/14 | SG    | NA       |
| M8164-P(0)    | 10/29/14 | SG    | NA       |
| M8165-P(0)    | 10/29/14 | SG    | NA       |
| M8166-P(0)    | 10/29/14 | SG    | NA       |
| M8166DUP-P(0) | 10/29/14 | SG    | NA       |
| M8347-P(0)    | 10/29/14 | SG    | NA       |
| M8348-P(0)    | 10/29/14 | SG    | NA       |
| M8355-P(0)    | 10/29/14 | SG    | NA       |
| M8358-P(0)    | 10/29/14 | SG    | NA       |
| M8359-P(0)    | 10/29/14 | SG    | NA       |
| M8365-P(0)    | 10/29/14 | SG    | NA       |
| M8365MS-P(0)  | 10/29/14 | SG    | NA       |
| M8365MSD-P(0) | 10/29/14 | SG    | NA       |
| M8371-P(0)    | 10/29/14 | SG    | NA       |

## BATTELLE - DUXBURY OPERATIONS EXTRACT CLEANUP FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id | Date     | Init. | Comments |
|------------|----------|-------|----------|
| M8372-P(0) | 10/29/14 | SG    | NA       |
| M8373-P(0) | 10/29/14 | SG    | NA       |
| M8383-P(0) | 10/29/14 | SG    | NA       |
| M8384-P(0) | 10/29/14 | SG    | NA       |
| M8385-P(0) | 10/29/14 | SG    | NA       |
| M8386-P(0) | 10/29/14 | SG    | NA       |
| M8403-P(0) | 10/29/14 | SG    | NA       |

**Cleanup:**

Copper Cleanup

**Reagents:**

| Name                         | Expires  | Lot No    | Procedure                                  |
|------------------------------|----------|-----------|--|
| Copper, granular, 10-40 mesh | 10/22/19 | MKBT0084V | NA   |
| Activated Copper             | 10/29/14 | MKBT0084V | Activated according to Cleanup SOP (5-328) |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| CD582PB-P(0)  | 10/29/14 | SG    | NA                       |
| CD583LCS-P(0) | 10/29/14 | SG    | NA                       |
| M8156-P(0)    | 10/29/14 | SG    | NA                       |
| M8158-P(0)    | 10/29/14 | SG    | NA                       |
| M8163-P(0)    | 10/29/14 | SG    | NA                       |
| M8164-P(0)    | 10/29/14 | SG    | NA                       |
| M8165-P(0)    | 10/29/14 | SG    | NA                       |
| M8166-P(0)    | 10/29/14 | SG    | NA                       |
| M8166DUP-P(0) | 10/29/14 | SG    | NA                       |
| M8347-P(0)    | 10/29/14 | SG    | NA                       |
| M8348-P(0)    | 10/29/14 | SG    | NA                       |
| M8355-P(0)    | 10/29/14 | SG    | NA                       |
| M8358-P(0)    | 10/29/14 | SG    | NA                       |
| M8359-P(0)    | 10/29/14 | SG    | NA                       |
| M8365-P(0)    | 10/29/14 | SG    | NA                       |
| M8365MS-P(0)  | 10/29/14 | SG    | NA                       |
| M8365MSD-P(0) | 10/29/14 | SG    | NA                       |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id | Date     | Init. | Sample Specific Comments |
|------------|----------|-------|--------------------------|
| M8371-P(0) | 10/29/14 | SG    | NA                       |
| M8372-P(0) | 10/29/14 | SG    | NA                       |
| M8373-P(0) | 10/29/14 | SG    | NA                       |
| M8383-P(0) | 10/29/14 | SG    | NA                       |
| M8384-P(0) | 10/29/14 | SG    | NA                       |
| M8385-P(0) | 10/29/14 | SG    | NA                       |
| M8386-P(0) | 10/29/14 | SG    | NA                       |
| M8403-P(0) | 10/29/14 | SG    | NA                       |

**Column Diameter:** 13 mm **Procedure Comment:**

**Elution Volume:** 15 mL

**Solvents**

| Name   | Lot No     |
|--------|------------|
| Hexane | 0000078260 |

**Reagents**

| Weight g | Name     | Expires  | Lot No         | Procedure  |
|----------|----------|----------|----------------|--|
| 1.00     | Florisil | 10/29/14 | 801139-1991484 | Baked at 110 °C for more than 24 hours (SPE columns not baked) |

**Fractions**

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| CD582PB-P  | 0 | -- | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| CD583LCS-P | 0 | -- | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8156-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8156-P    | 2 | -- | 10/30/2014 10:38:00 AM | M8156-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8156-P-D  | 3 | C  | 10/30/2014 10:38:00 AM | M8156-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8156-P-D  | 4 | -- | 10/30/2014 10:52:00 AM | M8156-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8156-P-D  | 5 | -- | 10/30/2014 10:52:00 AM | M8156-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8158-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8158-P    | 2 | -- | 10/30/2014 10:38:00 AM | M8158-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8158-P-D  | 3 | C  | 10/30/2014 10:38:00 AM | M8158-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8158-P-D  | 4 | -- | 10/30/2014 10:52:00 AM | M8158-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8158-P-D  | 5 | -- | 10/30/2014 10:52:00 AM | M8158-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8163-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8163-P    | 2 | -- | 10/30/2014 10:38:00 AM | M8163-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8163-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8163-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8163-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8163-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8163-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8163-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8164-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8164-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8164-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8164-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8164-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8164-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8164-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8164-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8164-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8165-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8165-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8165-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8165-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8165-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8165-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8165-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8165-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8165-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8166-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract      |   | *  | Extract Date           | Source       |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|--------------|---|----|------------------------|--------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name         | # |    |                        | Name         | # |                          |               |               |                |               |
| M8166-P      | 2 | -- | 10/30/2014 10:38:00 AM | M8166-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8166-P-D    | 3 | C  | 10/30/2014 10:38:00 AM | M8166-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8166-P-D    | 4 | -- | 10/30/2014 10:52:00 AM | M8166-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8166-P-D    | 5 | -- | 10/30/2014 10:52:00 AM | M8166-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8166DUP-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8166DUP-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8166DUP-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8166DUP-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8166DUP-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8166DUP-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8166DUP-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8166DUP-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8166DUP-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8347-P      | 0 | C  | 10/27/2014 10:28:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8347-P      | 2 | -- | 10/30/2014 10:38:00 AM | M8347-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8347-P-D    | 3 | C  | 10/30/2014 10:38:00 AM | M8347-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8347-P-D    | 4 | -- | 10/30/2014 10:52:00 AM | M8347-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8347-P-D    | 5 | -- | 10/30/2014 10:52:00 AM | M8347-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8348-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8348-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8348-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8348-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8348-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8348-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8348-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8348-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8348-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8355-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8355-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8355-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8355-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8355-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8355-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8355-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8355-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8355-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8358-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8358-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8358-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8358-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8358-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8358-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8358-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| M8358-P-D  | 5 | -- | 10/30/2014 10:52:00 AM | M8358-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8359-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8359-P    | 2 | -- | 10/30/2014 10:38:00 AM | M8359-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8359-P-D  | 3 | C  | 10/30/2014 10:38:00 AM | M8359-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8359-P-D  | 4 | -- | 10/30/2014 10:52:00 AM | M8359-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8359-P-D  | 5 | -- | 10/30/2014 10:52:00 AM | M8359-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8365-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8365-P    | 2 | -- | 10/30/2014 10:38:00 AM | M8365-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8365-P-D  | 3 | C  | 10/30/2014 10:38:00 AM | M8365-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8365-P-D  | 4 | -- | 10/30/2014 10:52:00 AM | M8365-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8365-P-D  | 5 | -- | 10/30/2014 10:52:00 AM | M8365-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8365MS-P  | 0 | -- | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8365MSD-P | 0 | -- | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8371-P    | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8371-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8371-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8371-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8371-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8371-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8371-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8371-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8371-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8372-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8372-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8372-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8372-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8372-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8372-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8372-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8372-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8372-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8373-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8373-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8373-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8373-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8373-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8373-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8373-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8373-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8373-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0494

USACE-NAE New Bedford Harbor LTM Study

SED

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8383-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8383-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8383-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8383-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8383-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8383-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8383-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8383-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8383-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8384-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8384-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8384-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8384-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8384-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8384-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8384-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8384-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8384-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8385-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8385-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8385-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8385-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8385-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8385-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8385-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0494

USACE-NAE New Bedford Harbor LTM Study

SED

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8385-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8385-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8386-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8386-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8386-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8386-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8386-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8386-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8386-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8386-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8386-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |
| M8403-P   | 0 | C  | 10/27/2014 10:28:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/27/14 KAW  |
| M8403-P   | 2 | -- | 10/30/2014 10:38:00 AM | M8403-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/30/14 SG   |
| M8403-P-D | 3 | C  | 10/30/2014 10:38:00 AM | M8403-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/30/14 SG   |
| M8403-P-D | 4 | -- | 10/30/2014 10:52:00 AM | M8403-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/30/14 SG   |
| M8403-P-D | 5 | -- | 10/30/2014 10:52:00 AM | M8403-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/30/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| CD582PB-P(0)  | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| CD583LCS-P(0) | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8156-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8156-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8156-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8158-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8158-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8158-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8163-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8163-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8163-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8164-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8164-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8164-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8165-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8165-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8165-P-D(5)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8166-P(0)    | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8166-P-D(3)  | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| M8166-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8166DUP-P(0)   | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8166DUP-P-D(3) | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8166DUP-P-D(5) | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8347-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8347-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8347-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8348-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8348-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8348-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8355-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8355-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8355-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8358-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8358-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8358-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |
| M8359-P(0)      | 900             | 100        | IE11    | 100        | 3        | 1000                | 1.000           | 10/30/14 SG            | DBT       |
| M8359-P-D(3)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 20.000          | 10/30/14 SG            | DBT       |
| M8359-P-D(5)    | 905             | 95         | IE11    | 100        | 3        | 1000                | 400.000         | 10/30/14 SG            | DBT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

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**SED**

**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8365-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8365-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8365-P-D(5)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8365MS-P(0)  | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8365MSD-P(0) | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8371-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8371-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8371-P-D(5)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8372-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8372-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8372-P-D(5)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8373-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8373-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8373-P-D(5)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8383-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8383-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8383-P-D(5)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8384-P(0)    | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8384-P-D(3)  | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8384-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8385-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8385-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8385-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8386-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8386-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8386-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |
| M8403-P(0)   | 900             | 100        | IE11    | 100         | 3        | 1000                | 1.000            | 10/30/14 SG            | DBT       |
| M8403-P-D(3) | 905             | 95         | IE11    | 100         | 3        | 1000                | 20.000           | 10/30/14 SG            | DBT       |
| M8403-P-D(5) | 905             | 95         | IE11    | 100         | 3        | 1000                | 400.000          | 10/30/14 SG            | DBT       |

Syringes/Pipettes Used:

\* - Final Dilution is any HPLC, dilutions, or other manipulation

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BATTELLE - DUXBURY OPERATIONS  
SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Comment: | Date/Initials: |
|------------|----------|----------------|
| CD582PB-P  | NA       | NA             |
| CD583LCS-P | NA       | NA             |
| M8156-P    | NA       | NA             |
| M8158-P    | NA       | NA             |
| M8163-P    | NA       | NA             |
| M8164-P    | NA       | NA             |
| M8165-P    | NA       | NA             |
| M8166-P    | NA       | NA             |
| M8166DUP-P | NA       | NA             |
| M8347-P    | NA       | NA             |
| M8348-P    | NA       | NA             |
| M8355-P    | NA       | NA             |
| M8358-P    | NA       | NA             |
| M8359-P    | NA       | NA             |
| M8365-P    | NA       | NA             |
| M8365MS-P  | NA       | NA             |
| M8365MSD-P | NA       | NA             |
| M8371-P    | NA       | NA             |
| M8372-P    | NA       | NA             |
| M8373-P    | NA       | NA             |
| M8383-P    | NA       | NA             |
| M8384-P    | NA       | NA             |
| M8385-P    | NA       | NA             |
| M8386-P    | NA       | NA             |
| M8403-P    | NA       | NA             |

## BATTELLE - DUXBURY OPERATIONS EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|  |  |
|--|--|
| <b>Purpose:</b> GC/ECD TRANSFER                  | <b>Last Activity:</b> Prep->Inst             |
| <b>Relinquished On/By:</b> Oct 30 2014 3:00PM SG | <b>Received On/By:</b> Oct 30 2014 3:00PM RR |
| <b>Relinquished From:</b>                        | <b>Received Location:</b> GC Laboratory: NA  |
| <b>Relinquish Comment:</b> NA                    | <b>Received Comment:</b> NA                  |

| No. | BDO-ID:         | PIV: | DF:    | Condition: | Custody Comment: |
|-----|-----------------|------|--------|------------|------------------|
| 1   | CD582PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 2   | CD583LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 3   | M8156-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 4   | M8156-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 5   | M8156-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 6   | M8158-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 7   | M8158-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 8   | M8158-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 9   | M8163-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 10  | M8163-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 11  | M8163-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 12  | M8164-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 13  | M8164-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 14  | M8164-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 15  | M8165-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 16  | M8165-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 17  | M8165-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 18  | M8166-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 19  | M8166-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 20  | M8166-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 21  | M8166DUP-P(2)   | 1000 | 1.053  | Intact     | NA               |
| 22  | M8166DUP-P-D(4) | 1000 | 21.053 | Intact     | NA               |
| 23  | M8166DUP-P-D(5) | 1000 | 400    | Intact     | NA               |
| 24  | M8347-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 25  | M8347-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 26  | M8347-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 27  | M8348-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 28  | M8348-P-D(4)    | 1000 | 21.053 | Intact     | NA               |



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

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**14-0494**

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**SED**

|    |               |      |        |        |    |
|----|---------------|------|--------|--------|----|
| 29 | M8348-P-D(5)  | 1000 | 400    | Intact | NA |
| 30 | M8355-P(2)    | 1000 | 1.053  | Intact | NA |
| 31 | M8355-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 32 | M8355-P-D(5)  | 1000 | 400    | Intact | NA |
| 33 | M8358-P(2)    | 1000 | 1.053  | Intact | NA |
| 34 | M8358-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 35 | M8358-P-D(5)  | 1000 | 400    | Intact | NA |
| 36 | M8359-P(2)    | 1000 | 1.053  | Intact | NA |
| 37 | M8359-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 38 | M8359-P-D(5)  | 1000 | 400    | Intact | NA |
| 39 | M8365-P(2)    | 1000 | 1.053  | Intact | NA |
| 40 | M8365-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 41 | M8365-P-D(5)  | 1000 | 400    | Intact | NA |
| 42 | M8365MS-P(0)  | 1000 | 1      | Intact | NA |
| 43 | M8365MSD-P(0) | 1000 | 1      | Intact | NA |
| 44 | M8371-P(2)    | 1000 | 1.053  | Intact | NA |
| 45 | M8371-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 46 | M8371-P-D(5)  | 1000 | 400    | Intact | NA |
| 47 | M8372-P(2)    | 1000 | 1.053  | Intact | NA |
| 48 | M8372-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 49 | M8372-P-D(5)  | 1000 | 400    | Intact | NA |
| 50 | M8373-P(2)    | 1000 | 1.053  | Intact | NA |
| 51 | M8373-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 52 | M8373-P-D(5)  | 1000 | 400    | Intact | NA |
| 53 | M8383-P(2)    | 1000 | 1.053  | Intact | NA |
| 54 | M8383-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 55 | M8383-P-D(5)  | 1000 | 400    | Intact | NA |
| 56 | M8384-P(2)    | 1000 | 1.053  | Intact | NA |
| 57 | M8384-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 58 | M8384-P-D(5)  | 1000 | 400    | Intact | NA |
| 59 | M8385-P(2)    | 1000 | 1.053  | Intact | NA |
| 60 | M8385-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 61 | M8385-P-D(5)  | 1000 | 400    | Intact | NA |
| 62 | M8386-P(2)    | 1000 | 1.053  | Intact | NA |
| 63 | M8386-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 64 | M8386-P-D(5)  | 1000 | 400    | Intact | NA |
| 65 | M8403-P(2)    | 1000 | 1.053  | Intact | NA |
| 66 | M8403-P-D(4)  | 1000 | 21.053 | Intact | NA |

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

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**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                        |              |      |     |        |    |
|------------------------|--------------|------|-----|--------|----|
| 67                     | M8403-P-D(5) | 1000 | 400 | Intact | NA |
| <b>Total Extracts:</b> |              | 67   |     |        |    |

**BATTELLE - DUXBURY OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0494**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

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Entered By:

On:

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Task Leader Approval:

On:

Supervisor Approval:

On:

PM Approval:

On:

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## INJECTION LOG

Directory I:\M\DATA\SM0417\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id     | Miscellaneous             | Injected                       |
|-----|-----|---------|---------------|---------------------------|--------------------------------|
| 1   | 1   | M7203.D | HEXANE        |                           | 10-20-2014 05:18 PM            |
| 2   | 2   | M7204.D | HF94          |                           | 10-20-2014 06:02 PM            |
| 3   | 3   | M7205.D | IE03          |                           | 10-20-2014 06:46 PM            |
| 4   | 4   | M7206.D | IE04          | Level not used.           | <del>10-20-2014 07:31 PM</del> |
| 5   | 5   | M7207.D | IE05          |                           | 10-20-2014 08:16 PM            |
| 6   | 6   | M7208.D | IE06          | RR 11/18/14               | 10-20-2014 09:00 PM            |
| 7   | 7   | M7209.D | IE07          |                           | 10-20-2014 09:45 PM            |
| 8   | 8   | M7210.D | IE08          |                           | 10-20-2014 10:29 PM            |
| 9   | 9   | M7211.D | IE09          | Level not used.           | <del>10-20-2014 11:14 PM</del> |
| 10  | 10  | M7212.D | IE10          |                           | 10-20-2014 11:58 PM            |
| 11  | 11  | M7213.D | HY06 ICC      |                           | 10-21-2014 12:43 AM            |
| 12  | 12  | M7214.D | HF94          |                           | 10-21-2014 01:28 AM            |
| 13  | 13  | M7215.D | IE08 mid      |                           | 10-21-2014 02:12 AM            |
| 14  | 14  | M7216.D | CD598PB-P(3)  | Procedural Blank 5-128 14 | 10-21-2014 02:57 AM            |
| 15  | 15  | M7217.D | CD599LCS-P(5) | Laboratory Control Sample | 10-21-2014 03:42 AM            |
| 16  | 16  | M7218.D | CD600SRM-P(5) | Standard Reference Materi | 10-21-2014 04:26 AM            |
| 17  | 17  | M7219.D | M7754-P(5)    | B537PreMnA 5-128 14-0498  | 10-21-2014 05:11 AM            |
| 18  | 18  | M7220.D | M7755-P(5)    | B537PreMnB 5-128 14-0498  | 10-21-2014 05:55 AM            |
| 19  | 19  | M7221.D | M7756-P(5)    | B537PreMnC 5-128 14-0498  | 10-21-2014 06:40 AM            |
| 20  | 20  | M7222.D | M7756MS-P(5)  | Matrix Spike of B537PreMn | 10-21-2014 07:25 AM            |
| 21  | 21  | M7223.D | M7756MSD-P(5) | Matrix Spike Duplicate of | 10-21-2014 08:09 AM            |
| 22  | 22  | M7224.D | M7757-P(5)    | B537R01MnA 5-128 14-0498  | 10-21-2014 08:54 AM            |
| 23  | 23  | M7225.D | M7758-P(5)    | B537R01MnB 5-128 14-0498  | 10-21-2014 09:38 AM            |
| 24  | 24  | M7226.D | HF94          |                           | 10-21-2014 10:22 AM            |
| 25  | 25  | M7227.D | IE08 mid      |                           | 10-21-2014 11:07 AM            |
| 26  | 26  | M7228.D | M7759-P(5)    | B537R01MnC 5-128 14-0498  | 10-21-2014 11:52 AM            |
| 27  | 27  | M7229.D | M7760-P(5)    | B537R01MnD 5-128 14-0498  | 10-21-2014 12:36 PM            |
| 28  | 28  | M7230.D | M7761-P(5)    | B537R01MnE 5-128 14-0498  | 10-21-2014 01:21 PM            |
| 29  | 29  | M7231.D | M7762-P(5)    | B537S01MnA 5-128 14-0498  | 10-21-2014 02:05 PM            |
| 30  | 30  | M7232.D | M7763-P(5)    | B537S01MnB 5-128 14-0498  | 10-21-2014 02:50 PM            |
| 31  | 31  | M7233.D | M7764-P(5)    | B537S01MnC 5-128 14-0498  | 10-21-2014 03:35 PM            |
| 32  | 32  | M7234.D | M7765-P(5)    | B537S01MnD 5-128 14-0498  | 10-21-2014 04:19 PM            |
| 33  | 33  | M7235.D | M7766-P(5)    | B537S01MnE 5-128 14-0498  | 10-21-2014 05:04 PM            |
| 34  | 34  | M7236.D | M7767-P(5)    | B537S02MnA 5-128 14-0498  | 10-21-2014 05:48 PM            |
| 35  | 35  | M7237.D | M7768-P(5)    | B537S02MnB 5-128 14-0498  | 10-21-2014 06:33 PM            |
| 36  | 36  | M7238.D | HF94          |                           | 10-21-2014 07:17 PM            |
| 37  | 37  | M7239.D | IE07 mid      |                           | 10-21-2014 08:02 PM            |
| 38  | 38  | M7240.D | M7768DUP-P(5) | Lab Duplicate of B537S02M | 10-21-2014 08:46 PM            |
| 39  | 39  | M7241.D | M7769-P(5)    | B537S02MnC 5-128 14-0498  | 10-21-2014 09:31 PM            |
| 40  | 40  | M7242.D | M7770-P(5)    | B537S02MnD 5-128 14-0498  | 10-21-2014 10:16 PM            |
| 41  | 41  | M7243.D | M7771-P(5)    | B537S02MnE 5-128 14-0498  | 10-21-2014 11:00 PM            |
| 42  | 42  | M7244.D | CD669PB-P(0)  | Procedural Blank 5-128 14 | 10-21-2014 11:45 PM            |
| 43  | 43  | M7245.D | CD670LCS-P(0) | Laboratory Control Sample | 10-22-2014 12:29 AM            |
| 44  | 44  | M7246.D | CD671LCS-P(0) | Laboratory Control Sample | 10-22-2014 01:14 AM            |
| 45  | 45  | M7247.D | M8926-P(0)    | FLD20141014OSHCO-7-14-7E  | 10-22-2014 01:58 AM            |
| 46  | 46  | M7248.D | M8928-P(0)    | FSW20141014OSHCO-7-14-1 5 | 10-22-2014 02:43 AM            |
| 47  | 47  | M7249.D | HF94          |                           | 10-22-2014 03:28 AM            |
| 48  | 48  | M7250.D | IE07 mid      |                           | 10-22-2014 04:12 AM            |

## INJECTION LOG

Directory I:\M\DATA\SM0420\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous             | Injected            |
|-----|-----|---------|-----------------|---------------------------|---------------------|
| 1   | 1   | M7342.D | HEXANE          |                           | 10-30-2014 04:15 PM |
| 2   | 2   | M7343.D | HF94            |                           | 10-30-2014 05:00 PM |
| 3   | 3   | M7344.D | IE07            |                           | 10-30-2014 05:44 PM |
| 4   | 4   | M7345.D | CD718PB-P(3)    |                           | 10-30-2014 06:29 PM |
| 5   | 5   | M7346.D | CD719LCS-P(5)   |                           | 10-30-2014 07:13 PM |
| 6   | 6   | M7347.D | CD720LCS-P(5)   |                           | 10-30-2014 07:58 PM |
| 7   | 7   | M7348.D | CD721LCS-P(5)   |                           | 10-30-2014 08:42 PM |
| 8   | 8   | M7349.D | CD722LCS-P(5)   |                           | 10-30-2014 09:27 PM |
| 9   | 9   | M7350.D | CD723LCS-P(5)   |                           | 10-30-2014 10:11 PM |
| 10  | 10  | M7351.D | M8474-P(5)      |                           | 10-30-2014 10:55 PM |
| 11  | 11  | M7352.D | M8476-P(5)      |                           | 10-30-2014 11:40 PM |
| 12  | 12  | M7353.D | M8478-P(5)      |                           | 10-31-2014 12:24 AM |
| 13  | 13  | M7354.D | HF94            |                           | 10-31-2014 01:09 AM |
| 14  | 14  | M7355.D | IE08            |                           | 10-31-2014 01:53 AM |
| 15  | 15  | M7356.D | CK-669(1) DCM   |                           | 10-31-2014 02:38 AM |
| 16  | 16  | M7357.D | CK-689(2) DCM   |                           | 10-31-2014 03:22 AM |
| 17  | 17  | M7358.D | CK-672(1) DCM   |                           | 10-31-2014 04:07 AM |
| 18  | 18  | M7359.D | CK-672(2) DCM   |                           | 10-31-2014 04:51 AM |
| 19  | 19  | M7360.D | CK-667(1) HEX   |                           | 10-31-2014 05:36 AM |
| 20  | 20  | M7361.D | CK-661(1) HEX   |                           | 10-31-2014 06:20 AM |
| 21  | 21  | M7362.D | CK-661(1) HEX   |                           | 10-31-2014 07:05 AM |
| 22  | 22  | M7363.D | CK-661(2) HEX   |                           | 10-31-2014 07:49 AM |
| 23  | 1   | M7364.D | IE07 mid        |                           | 10-31-2014 10:49 AM |
| 24  | 2   | M7365.D | M8402-P-D(7)    | NBH14-0161 5-128 14-0493  | 10-31-2014 11:34 AM |
| 25  | 3   | M7366.D | IE08 mid        |                           | 10-31-2014 12:18 PM |
| 26  | 4   | M7367.D | CD582PB-P(0)    | Procedural Blank 5-128 14 | 10-31-2014 01:03 PM |
| 27  | 5   | M7368.D | CD583LCS-P(0)   | Laboratory Control Sample | 10-31-2014 01:47 PM |
| 28  | 6   | M7369.D | M8156-P(2)      | NBH14-0017 5-128 14-0494  | 10-31-2014 02:32 PM |
| 29  | 7   | M7370.D | M8158-P(2)      | NBH14-0025 5-128 14-0494  | 10-31-2014 03:17 PM |
| 30  | 8   | M7371.D | M8163-P(2)      | NBH14-0045 5-128 14-0494  | 10-31-2014 04:01 PM |
| 31  | 9   | M7372.D | M8164-P(2)      | NBH14-0049 5-128 14-0494  | 10-31-2014 04:45 PM |
| 32  | 10  | M7373.D | M8165-P(2)      | NBH14-0053 5-128 14-0494  | 10-31-2014 05:30 PM |
| 33  | 11  | M7374.D | M8166-P(2)      | NBH14-0061 5-128 14-0494  | 10-31-2014 06:14 PM |
| 34  | 12  | M7375.D | M8166DUP-P(2)   | Lab Duplicate of NBH14-00 | 10-31-2014 06:59 PM |
| 35  | 13  | M7376.D | M8347-P(2)      | NBH14-0057 5-128 14-0494  | 10-31-2014 07:43 PM |
| 36  | 14  | M7377.D | IE07mid         |                           | 10-31-2014 08:28 PM |
| 37  | 15  | M7378.D | M8348-P(2)      | NBH14-0069 5-128 14-0494  | 10-31-2014 09:12 PM |
| 38  | 16  | M7379.D | M8355-P(2)      | NBH14-0203 5-128 14-0494  | 10-31-2014 09:57 PM |
| 39  | 17  | M7380.D | M8358-P(2)      | NBH14-0215 5-128 14-0494  | 10-31-2014 10:41 PM |
| 40  | 18  | M7381.D | M8359-P(2)      | NBH14-0219 5-128 14-0494  | 10-31-2014 11:26 PM |
| 41  | 19  | M7382.D | M8365-P(2)      | NBH14-0234 5-128 14-0494  | 11-1-2014 12:10 AM  |
| 42  | 20  | M7383.D | M8365MS-P(0)    | Matrix Spike of NBH14-023 | 11-1-2014 12:55 AM  |
| 43  | 21  | M7384.D | M8365MSD-P(0)   | Matrix Spike Duplicate of | 11-1-2014 01:39 AM  |
| 44  | 22  | M7385.D | M8371-P(2)      | NBH14-0257 5-128 14-0494  | 11-1-2014 02:24 AM  |
| 45  | 23  | M7386.D | M8372-P(2)      | NBH14-0261 5-128 14-0494  | 11-1-2014 03:08 AM  |
| 46  | 24  | M7387.D | M8373-P(2)      | NBH14-0265 5-128 14-0494  | 11-1-2014 03:53 AM  |
| 47  | 25  | M7388.D | IE08 mid        |                           | 11-1-2014 04:37 AM  |
| 48  | 26  | M7389.D | M8383-P(2)      | NBH14-0314 5-128 14-0494  | 11-1-2014 05:22 AM  |
| 49  | 27  | M7390.D | M8384-P(2)      | NBH14-0318 5-128 14-0494  | 11-1-2014 06:06 AM  |
| 50  | 28  | M7391.D | M8385-P(2)      | NBH14-0322 5-128 14-0494  | 11-1-2014 06:50 AM  |
| 51  | 29  | M7392.D | M8386-P(2)      | NBH14-0326 5-128 14-0494  | 11-1-2014 07:35 AM  |
| 52  | 30  | M7393.D | M8403-P(2)      | NBH14-0165 5-128 14-0494  | 11-1-2014 08:19 AM  |
| 53  | 31  | M7394.D | M8156-P-D(4)    | NBH14-0017 5-128 14-0494  | 11-1-2014 09:04 AM  |
| 54  | 32  | M7395.D | M8158-P-D(4)    | NBH14-0025 5-128 14-0494  | 11-1-2014 09:48 AM  |
| 55  | 33  | M7396.D | M8163-P-D(4)    | NBH14-0045 5-128 14-0494  | 11-1-2014 10:33 AM  |
| 56  | 34  | M7397.D | M8164-P-D(4)    | NBH14-0049 5-128 14-0494  | 11-1-2014 11:17 AM  |
| 57  | 35  | M7398.D | M8165-P-D(4)    | NBH14-0053 5-128 14-0494  | 11-1-2014 12:02 PM  |
| 58  | 36  | M7399.D | IE07 mid        |                           | 11-1-2014 12:47 PM  |
| 59  | 37  | M7400.D | M8166-P-D(4)    | NBH14-0061 5-128 14-0494  | 11-1-2014 01:31 PM  |
| 60  | 38  | M7401.D | M8166DUP-P-D(4) | Lab Duplicate of NBH14-00 | 11-1-2014 02:16 PM  |
| 61  | 39  | M7402.D | M8347-P-D(4)    | NBH14-0057 5-128 14-0494  | 11-1-2014 03:00 PM  |

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INJECTION LOG

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| Lin | BTL | File    | Sample Id       | Miscellaneous                | Injected           |
|-----|-----|---------|-----------------|------------------------------|--------------------|
| 62  | 40  | M7403.D | M8348-P-D(4)    | (1) NBH14-0069 5-128 14-0494 | 11-1-2014 03:44 PM |
| 63  | 41  | M7404.D | M8355-P-D(4)    | NBH14-0203 5-128 14-0494     | 11-1-2014 04:29 PM |
| 64  | 42  | M7405.D | M8358-P-D(4)    | NBH14-0215 5-128 14-0494     | 11-1-2014 05:13 PM |
| 65  | 43  | M7406.D | M8359-P-D(4)    | NBH14-0219 5-128 14-0494     | 11-1-2014 05:58 PM |
| 66  | 44  | M7407.D | M8365-P-D(4)    | (1) NBH14-0234 5-128 14-0494 | 11-1-2014 06:42 PM |
| 67  | 45  | M7408.D | M8371-P-D(4)    | (1) NBH14-0257 5-128 14-0494 | 11-1-2014 07:27 PM |
| 68  | 46  | M7409.D | M8372-P-D(4)    | NBH14-0261 5-128 14-0494     | 11-1-2014 08:11 PM |
| 69  | 47  | M7410.D | IE08 mid        |                              | 11-1-2014 08:56 PM |
| 70  | 48  | M7411.D | M8373-P-D(4)    | NBH14-0265 5-128 14-0494     | 11-1-2014 09:40 PM |
| 71  | 49  | M7412.D | M8383-P-D(4)    | NBH14-0314 5-128 14-0494     | 11-1-2014 10:25 PM |
| 72  | 50  | M7413.D | M8384-P-D(4)    | NBH14-0318 5-128 14-0494     | 11-1-2014 11:09 PM |
| 73  | 51  | M7414.D | M8385-P-D(4)    | NBH14-0322 5-128 14-0494     | 11-1-2014 11:54 PM |
| 74  | 52  | M7415.D | M8386-P-D(4)    | NBH14-0326 5-128 14-0494     | 11-2-2014 12:38 AM |
| 75  | 53  | M7416.D | M8403-P-D(4)    | (1) NBH14-0165 5-128 14-0494 | 11-2-2014 01:23 AM |
| 76  | 54  | M7417.D | M8156-P-D(5)    | NBH14-0017 5-128 14-0494     | 11-2-2014 02:07 AM |
| 77  | 55  | M7418.D | M8158-P-D(5)    | NBH14-0025 5-128 14-0494     | 11-2-2014 02:52 AM |
| 78  | 56  | M7419.D | M8163-P-D(5)    | NBH14-0045 5-128 14-0494     | 11-2-2014 03:37 AM |
| 79  | 57  | M7420.D | M8164-P-D(5)    | NBH14-0049 5-128 14-0494     | 11-2-2014 04:22 AM |
| 80  | 58  | M7421.D | IE07 mid        |                              | 11-2-2014 05:07 AM |
| 81  | 59  | M7422.D | M8165-P-D(5)    | (1) NBH14-0053 5-128 14-0494 | 11-2-2014 05:52 AM |
| 82  | 60  | M7423.D | M8166-P-D(5)    | NBH14-0061 5-128 14-0494     | 11-2-2014 06:36 AM |
| 83  | 61  | M7424.D | M8166DUP-P-D(5) | Lab Duplicate of NBH14-00    | 11-2-2014 07:21 AM |
| 84  | 62  | M7425.D | M8347-P-D(5)    | NBH14-0057 5-128 14-0494     | 11-2-2014 08:06 AM |
| 85  | 63  | M7426.D | M8348-P-D(5)    | NBH14-0069 5-128 14-0494     | 11-2-2014 08:51 AM |
| 86  | 64  | M7427.D | M8355-P-D(5)    | NBH14-0203 5-128 14-0494     | 11-2-2014 09:36 AM |
| 87  | 65  | M7428.D | M8358-P-D(5)    | (1) NBH14-0215 5-128 14-0494 | 11-2-2014 10:21 AM |
| 88  | 66  | M7429.D | M8359-P-D(5)    | NBH14-0219 5-128 14-0494     | 11-2-2014 11:06 AM |
| 89  | 67  | M7430.D | M8365-P-D(5)    | NBH14-0234 5-128 14-0494     | 11-2-2014 11:51 AM |
| 90  | 68  | M7431.D | M8371-P-D(5)    | NBH14-0257 5-128 14-0494     | 11-2-2014 12:35 PM |
| 91  | 69  | M7432.D | IE08 mid        |                              | 11-2-2014 01:20 PM |
| 92  | 70  | M7433.D | M8372-P-D(5)    | (1) NBH14-0261 5-128 14-0494 | 11-2-2014 02:05 PM |
| 93  | 71  | M7434.D | M8373-P-D(5)    | NBH14-0265 5-128 14-0494     | 11-2-2014 02:50 PM |
| 94  | 72  | M7435.D | M8383-P-D(5)    | NBH14-0314 5-128 14-0494     | 11-2-2014 03:34 PM |
| 95  | 73  | M7436.D | M8384-P-D(5)    | NBH14-0318 5-128 14-0494     | 11-2-2014 04:19 PM |
| 96  | 74  | M7437.D | M8385-P-D(5)    | NBH14-0322 5-128 14-0494     | 11-2-2014 05:04 PM |
| 97  | 75  | M7438.D | M8386-P-D(5)    | NBH14-0326 5-128 14-0494     | 11-2-2014 05:49 PM |
| 98  | 76  | M7439.D | M8403-P-D(5)    | NBH14-0165 5-128 14-0494     | 11-2-2014 06:34 PM |
| 99  | 77  | M7440.D | IE07 mid        |                              | 11-2-2014 07:19 PM |

(1) Dilutions not needed.

RR 11/19/14

## Calibration Response Factor Report

**Batch:** 14-0494 **Project Test Code:** Master 128(S) **RFs validated CRD** 12/9/2014  
**Data Set:** DP-14-0676 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M **Responses Via** Initial Calibration **Last Updated** 11/14/2014 9:30:00 AM **Title:** NBH  
**Instrument:** Inst. M **Operator:** RR **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Type: | Column: | MAD:    | 1<br>IE03<br>M7205.D | 2<br>IE05<br>M7207.D | 3<br>IE06<br>M7208.D | 4<br>IE07<br>M7209.D | 5<br>IE08<br>M7210.D | 6<br>IE10<br>M7212.D | 7 | 8 | Curve Fit: | (A)      | (B)      | (C)     | Stat<br>(r <sup>2</sup> /RSD): | Qual:   |  |
|-----|-----------|-------|---------|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|------------|----------|----------|---------|--------------------------------|---------|--|
| 1   | Cl5(96)   | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 2   | Cl2(8)    | 1     | Y       | 1.02677 | 0.82499              | 0.74685              | 0.63118              | 0.55904              | 0.41512              | -                    | - | 6 | Q          | -0.05406 | 0.58100  | 0.02367 | 0.99968                        |         |  |
| 3   | Cl3(18)   | 1     | Y       | 1.31210 | 1.10482              | 0.96661              | 0.78724              | 0.69070              | 0.50395              | -                    | - | 6 | Q          | -0.06844 | 0.71262  | 0.03558 | 0.99947                        |         |  |
| 4   | Cl3(34)   | s     | 1       | Y       | 2.47273              | 1.36117              | 1.18217              | 1.03139              | 0.92191              | 0.71999              | - | - | 6          | Q        | -0.06938 | 0.92761 | 0.04587                        | 0.99994 |  |
| 5   | Cl3(28)   | 1     | Y       | 1.88563 | 1.62148              | 1.53903              | 1.39969              | 1.26450              | 1.01381              | -                    | - | 6 | Q          | -0.09842 | 1.31978  | 0.03237 | 0.99986                        |         |  |
| 6   | Cl4(52)   | 1     | Y       | 2.67460 | 1.50893              | 1.27188              | 1.06050              | 0.93014              | 0.70933              | -                    | - | 6 | Q          | -0.07364 | 0.92696  | 0.05816 | 0.99983                        |         |  |
| 7   | Cl4(44)   | 1     | Y       | 1.96878 | 1.69047              | 1.60648              | 1.42175              | 1.25645              | 1.00372              | -                    | - | 6 | Q          | -0.09818 | 1.30598  | 0.04163 | 0.99973                        |         |  |
| 8   | Cl4(66)   | 1     | Y       | 2.14003 | 1.91334              | 1.75148              | 1.60565              | 1.43266              | 1.15511              | -                    | - | 6 | Q          | -0.10876 | 1.49082  | 0.04098 | 0.99982                        |         |  |
| 9   | Cl5(101)  | 1     | Y       | 1.87327 | 1.59373              | 1.70864              | 1.61385              | 1.42978              | 1.22422              | -                    | - | 6 | Q          | -0.08750 | 1.49635  | 0.02623 | 0.99975                        |         |  |
| 10  | Cl6(161)  | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 11  | Cl6(152)  | s     | 1       | Y       | 1.02184              | 0.73169              | 0.67623              | 0.59438              | 0.54889              | 0.47996              | - | - | 6          | Q        | -0.02339 | 0.54921 | 0.01882                        | 0.99992 |  |
| 12  | Cl5(118)  | 1     | Y       | 1.02402 | 0.91463              | 0.85020              | 0.75415              | 0.68354              | 0.58350              | -                    | - | 6 | Q          | -0.03737 | 0.69686  | 0.02122 | 0.99982                        |         |  |
| 13  | Cl6(153)  | 1     | Y       | 0.88266 | 0.81935              | 0.60192              | 0.77537              | 0.66030              | 0.59647              | -                    | - | 6 | Q          | -0.02991 | 0.69018  | 0.00733 | 0.99932                        |         |  |
| 14  | Cl5(105)  | 1     | Y       | 1.20312 | 1.04021              | 0.99965              | 0.96015              | 0.82296              | 0.65909              | -                    | - | 6 | Q          | -0.06789 | 0.87004  | 0.02177 | 0.99963                        |         |  |
| 15  | Cl6(138)  | 1     | Y       | 1.22541 | 1.06675              | 1.00587              | 0.91669              | 0.84817              | 0.76297              | -                    | - | 6 | Q          | -0.03117 | 0.85646  | 0.02109 | 0.99991                        |         |  |
| 16  | Cl7(187)  | 1     | Y       | 1.07415 | 0.94434              | 0.88498              | 0.79082              | 0.74346              | 0.66512              | -                    | - | 6 | Q          | -0.02786 | 0.74881  | 0.01846 | 0.99992                        |         |  |
| 17  | Cl6(128)  | 1     | Y       | 1.16100 | 0.91667              | 0.89359              | 0.85607              | 0.84318              | 0.73247              | -                    | - | 6 | Q          | -0.04270 | 0.86786  | 0.00587 | 0.99999                        |         |  |
| 18  | Cl7(180)  | 1     | Y       | 1.23170 | 1.08198              | 0.99753              | 0.93689              | 0.88497              | 0.82624              | -                    | - | 6 | Q          | -0.02031 | 0.88592  | 0.01772 | 0.99996                        |         |  |
| 19  | Cl7(170)  | 1     | Y       | 1.33635 | 1.19973              | 1.11853              | 1.05917              | 1.00487              | 0.94111              | -                    | - | 6 | Q          | -0.02267 | 1.00845  | 0.01743 | 0.99997                        |         |  |
| 20  | Cl8(195)  | 1     | Y       | 1.24821 | 1.10061              | 1.05076              | 0.99234              | 0.94476              | 0.89153              | -                    | - | 6 | Q          | -0.01887 | 0.94735  | 0.01528 | 0.99997                        |         |  |
| 21  | Cl9(206)  | 1     | Y       | 1.18038 | 1.03661              | 0.99467              | 0.96457              | 0.91081              | 0.85789              | -                    | - | 6 | Q          | -0.02022 | 0.91869  | 0.01268 | 0.99997                        |         |  |
| 22  | Cl10(209) | 1     | Y       | 0.99002 | 0.86426              | 0.82007              | 0.78889              | 0.73849              | 0.67758              | -                    | - | 6 | Q          | -0.02343 | 0.74907  | 0.01198 | 0.99996                        |         |  |
| 23  | Signal    | 2     | -       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 24  | Cl5(96)   | I     | 2       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 25  | Cl2(8)    | 2     | Y       | 0.94637 | 0.83650              | 0.76620              | 0.67202              | 0.62199              | 0.48595              | -                    | - | 6 | Q          | -0.05185 | 0.64681  | 0.01712 | 0.99988                        |         |  |
| 26  | Cl3(18)   | 2     | Y       | 1.39241 | 1.13741              | 1.00550              | 0.76551              | 0.70491              | 0.54182              | -                    | - | 6 | Q          | -0.05533 | 0.70768  | 0.03799 | 0.99943                        |         |  |
| 27  | Cl3(34)   | s     | 2       | Y       | 2.23518              | 1.39531              | 1.20146              | 1.04748              | 0.98379              | 0.79730              | - | - | 6          | Q        | -0.06315 | 0.98749 | 0.03800                        | 0.99996 |  |
| 28  | Cl3(28)   | 2     | Y       | 2.05612 | 1.73008              | 1.59254              | 1.42520              | 1.36560              | 1.12979              | -                    | - | 6 | Q          | -0.08759 | 1.40224  | 0.02866 | 0.99996                        |         |  |
| 29  | Cl4(52)   | 2     | Y       | 1.32543 | 1.01634              | 1.04226              | 0.82635              | 0.80598              | 0.62728              | -                    | - | 6 | Q          | -0.06549 | 0.83027  | 0.02172 | 0.99971                        |         |  |
| 30  | Cl4(44)   | 2     | Y       | 2.26696 | 1.68554              | 1.62828              | 1.44775              | 1.40139              | 1.13801              | -                    | - | 6 | Q          | -0.09853 | 1.44647  | 0.02603 | 0.99996                        |         |  |

## Calibration Response Factor Report

**Batch:** 14-0494                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0676                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|---------|-----------------------------|-------|
|     |           |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |          |         |         |                             |       |
|     |           |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |         |                             |       |
| 31  | Cl4(66)   |              | Y       | 2.28150 | 1.94181 | 1.76289 | 1.65364 | 1.54066 | 1.31516 | - | - | 6 Q        | -0.08582 | 1.58007 | 0.03256 | 0.99996                     |       |
| 32  | Cl5(101)  |              | Y       | 1.56754 | 1.17777 | 1.01633 | 1.01029 | 0.86410 | 0.96534 | - | - | 6 Q        | 0.04538  | 0.80794 | 0.03732 | 0.99968                     |       |
| 33  | Cl6(161)  | I            | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -       | -                           |       |
| 34  | Cl6(152)  | S            | Y       | 0.69735 | 0.69234 | 0.57622 | 0.54795 | 0.47409 | 0.53607 | - | - | 6 Q        | 0.02791  | 0.43955 | 0.02156 | 0.99966                     |       |
| 35  | Cl5(118)  |              | Y       | 1.37021 | 0.63622 | 0.73177 | 0.70795 | 0.59017 | 0.57149 | - | - | 6 Q        | -0.00725 | 0.58778 | 0.02195 | 0.99943                     |       |
| 36  | Cl6(153)  |              | Y       | 1.07545 | 0.86632 | 0.79677 | 0.69128 | 0.63279 | 0.63321 | - | - | 6 Q        | 0.00578  | 0.60663 | 0.02539 | 0.99983                     |       |
| 37  | Cl5(105)  |              | Y       | 1.20126 | 1.01455 | 0.97857 | 0.92200 | 0.88341 | 0.94009 | - | - | 6 Q        | 0.02686  | 0.84840 | 0.01736 | 0.99996                     |       |
| 38  | Cl6(138)  |              | Y       | 0.67940 | 0.66822 | 0.62305 | 0.61544 | 0.61172 | 0.68345 | - | - | 6 Q        | 0.03117  | 0.58132 | 0.00625 | 0.99999                     |       |
| 39  | Cl7(187)  |              | Y       | 0.98245 | 0.80842 | 0.76633 | 0.69224 | 0.65688 | 0.68482 | - | - | 6 Q        | 0.01569  | 0.62875 | 0.01795 | 0.99993                     |       |
| 40  | Cl6(128)  |              | Y       | 1.29556 | 1.08544 | 1.04052 | 0.96581 | 0.92997 | 0.98492 | - | - | 6 Q        | 0.02722  | 0.89128 | 0.01958 | 0.99996                     |       |
| 41  | Cl7(180)  |              | Y       | 1.15986 | 0.95311 | 0.92022 | 0.85738 | 0.83699 | 0.89707 | - | - | 6 Q        | 0.02897  | 0.79906 | 0.01566 | 0.99998                     |       |
| 42  | Cl7(170)  |              | Y       | 1.17715 | 1.00944 | 0.98379 | 0.93732 | 0.91404 | 0.98260 | - | - | 6 Q        | 0.03138  | 0.87743 | 0.01381 | 0.99998                     |       |
| 43  | Cl8(195)  |              | Y       | 1.05313 | 0.90773 | 0.89676 | 0.85979 | 0.84072 | 0.91395 | - | - | 6 Q        | 0.03255  | 0.80577 | 0.01137 | 0.99998                     |       |
| 44  | Cl9(206)  |              | Y       | 0.94156 | 0.80488 | 0.80171 | 0.77400 | 0.75899 | 0.82033 | - | - | 6 Q        | 0.02717  | 0.73041 | 0.00888 | 0.99999                     |       |
| 45  | Cl10(209) |              | Y       | 0.76301 | 0.64557 | 0.63678 | 0.60540 | 0.58689 | 0.62005 | - | - | 6 Q        | 0.01548  | 0.56751 | 0.00888 | 0.99998                     |       |

## Calibration Response Factor Report

**Batch:** 14-0494                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0676                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte: | Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A) | (B) | (C) | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|-----|-----|-----|-----------------------------|-------|
|     |          |       | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - |            |     |     |     |                             |       |
|     |          |       |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D | - | - |            |     |     |     |                             |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:                 | Evaluate: |
|------------|-----------------|------------------------------|-----------|
| L          | Linear          | y = Bx + C                   | r-squared |
| RF         | Average RF      | y = Bx                       | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0                   | r-squared |
| Q          | Quadratic       | y = Ax <sup>2</sup> + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax <sup>2</sup> + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:                    |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|------------------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C                   |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx                       |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0                   |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0494      **Project Test Code:** Master 128(S)      RFS validated CRD 12/9/2014  
**Data Set:** DP-14-0676      **SOP\_NO:** 5-128-13  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417F.M      **Responses Via** Initial Calibration      **Last Updated** 12/5/2014 3:22:00 PM      **Title:** NBH 101 only to compliment B method  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417F.M

| No: | Analyte: | Type: | Column: | MQO:    | 1       | 2       | 3       | 4       | 5       | 6    | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)      | Stat (r^2/RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|------|---|---|------------|----------|---------|----------|-----------------|-------|
|     |          |       |         |         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10 |   |   | Levels:    |          |         |          |                 |       |
| 1   | Cl5(96)  | I     | 1       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               | -     |
| 2   | Cl5(101) | 1     | Y       | 2.10045 | 1.55920 | 1.68988 | 1.70104 | 1.46973 | 1.35619 | -    | - | 6 | Q          | -0.05296 | 1.51726 | 0.02697  | 0.99964         |       |
| 3   | Signal   | 2     | -       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               |       |
| 4   | Cl5(96)  | I     | 2       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               |       |
| 5   | Cl5(101) | 2     | Y       | 1.67256 | 2.33575 | 1.99479 | 1.98711 | 2.06595 | 1.40514 | -    | - | 6 | Q          | -0.26866 | 2.27420 | -0.02348 | 0.99966         |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0494 **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0676 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**Method:** I:\M\DATA\MM0417C.M  
**Title:** NBH  
**Last Update:** Fri Nov 14 9:30 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:     | Quant Time:      | Acquisition Time:    |
|-----|------|--------------------------|------------------|------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Oct 28 9:02 2014 | Oct 28 8:27 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 11:58 PM |

**Method:** I:\M\DATA\MM0417F.M  
**Title:** NBH 101 only to compliment B method  
**Last Update:** Fri Dec 05 15:22 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:      | Quant Time:       | Acquisition Time:    |
|-----|------|--------------------------|-------------------|-------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Dec 05 15:22 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 11:58 PM |



## ICC Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0494 **Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | l     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04000 | 0.04325 | 8.3    |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04000 | 0.04152 | 3.8    |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04104 | 2.5    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04000 | 0.04097 | 2.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04000 | 0.04111 | 2.8    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04000 | 0.04166 | 4.3    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04000 | 0.04028 | 0.8    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04000 | 0.03706 | 7.3    |
| 10  | Cl6(161)  | l     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04020 | 0.04329 | 7.8    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04000 | 0.04151 | 3.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04000 | 0.03933 | 1.8    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04000 | 0.03777 | 5.5    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04000 | 0.04232 | 5.8    |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04000 | 0.04280 | 7.0    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04000 | 0.03934 | 1.8    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04000 | 0.04137 | 3.5    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04000 | 0.04068 | 1.8    |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04000 | 0.03988 | 0.3    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04000 | 0.03884 | 3.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04000 | 0.03908 | 2.3    |
| 24  | Cl5(96)   | l     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04000 | 0.04248 | 6.3    |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04000 | 0.03989 | 0.3    |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04170 | 4.3    |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04000 | 0.04093 | 2.3    |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04000 | 0.04057 | 1.5    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04000 | 0.04125 | 3.3    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04000 | 0.04095 | 2.5    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04000 | 0.03828 | 4.3    |
| 33  | Cl6(161)  | l     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04020 | 0.04128 | 2.8    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04000 | 0.03951 | 1.3    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04000 | 0.04346 | 8.8    |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04000 | 0.04078 | 2.0    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04000 | 0.04108 | 2.8    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04000 | 0.04269 | 6.8    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04000 | 0.04136 | 3.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04000 | 0.04073 | 1.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04000 | 0.04050 | 1.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04000 | 0.03956 | 1.0    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04000 | 0.03878 | 3.0    |

## ICC Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0494 **Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.04000 | 0.03893 | 2.8    |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean PD:** 3.49  
**Follow ICAL:** PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## ICC Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0494 **Matrix:** SED  
**Calibration File:** MM0417F.M **Last Updated:** 12/5/2014 3:22:00 PM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte: | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | C15(96)  | I     | 1    | -    |         |         |        |
| 2   | C15(101) |       | 1    | Y    | 0.04000 | 0.03858 | 3.5    |
| 4   | C15(96)  | I     | 2    | -    |         |         |        |
| 5   | C15(101) |       | 2    | Y    | 0.04000 | 0.03850 | 3.8    |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean PD:** 3.65  
**Follow ICAL:** PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7377.D                     |        | M7399.D                      |        | M7421.D                      |        |
|-----|-----------|-------|------|------|---------|-----------------------------|--------|------------------------------|--------|------------------------------|--------|
|     |           |       |      |      |         | MID                         | % Diff | MID                          | % Diff | MID                          | % Diff |
|     |           |       |      |      |         | IE07mid<br>10/31/2014 20:28 |        | IE07 mid<br>11/01/2014 12:47 |        | IE07 mid<br>11/02/2014 05:07 |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                             |        |                              |        |                              |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.04138                     | 3.2    | 0.03922                      | -2.1   | 0.03911                      | -2.4   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.04069                     | 1.3    | 0.03884                      | -3.3   | 0.03986                      | -0.7   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04058                     | 1.4    | 0.03978                      | -0.5   | 0.04052                      | 1.3    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.04229                     | 5.3    | 0.04196                      | 4.5    | 0.04182                      | 4.1    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.04084                     | 2.0    | 0.04045                      | 1.0    | 0.04104                      | 2.5    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.04088                     | 1.8    | 0.04145                      | 3.2    | 0.04095                      | 2.0    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.04126                     | 2.9    | 0.04170                      | 4.0    | 0.04106                      | 2.4    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.04011                     | 0.1    | 0.03956                      | -1.3   | 0.03994                      | -0.3   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                             |        |                              |        |                              |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04172                     | 3.9    | 0.04091                      | 1.9    | 0.04148                      | 3.3    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.04055                     | 1.0    | 0.03989                      | -0.7   | 0.04209                      | 4.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.04089                     | 1.8    | 0.04152                      | 3.4    | 0.04183                      | 4.2    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.03720                     | -7.3   | 0.03738                      | -6.8   | 0.03918                      | -2.3   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.04075                     | 1.5    | 0.04044                      | 0.7    | 0.03940                      | -1.9   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04157                     | 3.5    | 0.04121                      | 2.6    | 0.04000                      | -0.4   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03844                     | -4.3   | 0.03670                      | -8.6   | 0.03840                      | -4.4   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.04032                     | 0.4    | 0.03983                      | -0.8   | 0.03949                      | -1.7   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.04044                     | 0.7    | 0.03978                      | -0.9   | 0.03935                      | -2.0   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04048                     | 0.8    | 0.04044                      | 0.7    | 0.04010                      | -0.1   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.03955                     | -1.3   | 0.03990                      | -0.4   | 0.03966                      | -1.0   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.03924                     | -2.3   | 0.03953                      | -1.6   | 0.03942                      | -1.8   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                             |        |                              |        |                              |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03978                     | -0.7   | 0.03831                      | -4.4   | 0.03912                      | -2.4   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03823                     | -4.8   | 0.03969                      | -1.2   | 0.03872                      | -3.6   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03996                     | -0.1   | 0.03878                      | -3.0   | 0.03889                      | -2.8   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.04031                     | 0.4    | 0.03829                      | -4.7   | 0.03834                      | -4.5   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.04222                     | 5.4    | 0.03878                      | -3.1   | 0.03970                      | -0.8   |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.03901                     | -2.9   | 0.04305                      | 7.2    | 0.03666                      | -8.7   |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04225                     | 5.4    | 0.04125                      | 2.9    | 0.04022                      | 0.3    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03722                     | -7.1   | 0.04018                      | 0.2    | 0.03785                      | -5.6   |
| 33  | Cl6(161)  | I     | 2    | -    |         |                             |        |                              |        |                              |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04518                     | 12.5   | 0.04070                      | 1.3    | 0.04235                      | 5.5    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03823                     | -4.8   | 0.03883                      | -3.3   | 0.03650                      | -9.1   |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03831                     | -4.6   | 0.03702                      | -7.8   | 0.03632                      | -9.6   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03953                     | -1.5   | 0.03877                      | -3.4   | 0.03915                      | -2.4   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04297                     | 7.0    | 0.04258                      | 6.0    | 0.04293                      | 6.9    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04049                     | 0.8    | 0.04106                      | 2.2    | 0.04061                      | 1.1    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04052                     | 0.9    | 0.04064                      | 1.2    | 0.04039                      | 0.6    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04045                     | 0.7    | 0.04106                      | 2.2    | 0.04147                      | 3.3    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.03963                     | -1.3   | 0.04129                      | 2.8    | 0.04235                      | 5.5    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.03948                     | -1.7   | 0.04149                      | 3.3    | 0.04308                      | 7.3    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.03878                     | -3.2   | 0.04147                      | 3.5    | 0.04457                      | 11.2   |

## CCV Summary Report

Batch: 14-0494 Data Set: DP-14-0676  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7377.D     |        | M7399.D |        | M7421.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.03878     | -3.4   | 0.04127 | 2.8    | 0.04469 | 11.3   |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 2.9    | 2.9     | 3.7    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7366.D                      |        | M7388.D                      |        | M7410.D                      |        |
|-----|-----------|-------|------|------|---------|------------------------------|--------|------------------------------|--------|------------------------------|--------|
|     |           |       |      |      |         | MID                          | % Diff | MID                          | % Diff | MID                          | % Diff |
|     |           |       |      |      |         | IE08 mid<br>10/31/2014 12:18 |        | IE08 mid<br>11/01/2014 04:38 |        | IE08 mid<br>11/01/2014 20:56 |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.08039                      | 0.3    | 0.07794                      | -2.8   | 0.07474                      | -6.8   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.08189                      | 2.0    | 0.07566                      | -5.8   | 0.07571                      | -5.7   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07633                      | -4.6   | 0.07909                      | -1.1   | 0.07777                      | -2.8   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07849                      | -2.3   | 0.08015                      | -0.2   | 0.08069                      | 0.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07784                      | -2.8   | 0.07845                      | -2.0   | 0.07902                      | -1.3   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07941                      | -1.1   | 0.07943                      | -1.1   | 0.07875                      | -2.0   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07726                      | -3.6   | 0.07872                      | -1.8   | 0.08072                      | 0.7    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.07417                      | -7.5   | 0.07493                      | -6.5   | 0.08086                      | 0.9    |
| 10  | Cl6(161)  | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.08364                      | 4.1    | 0.08261                      | 2.9    | 0.08142                      | 1.4    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.08232                      | 2.5    | 0.07650                      | -4.8   | 0.07814                      | -2.7   |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.08283                      | 3.1    | 0.07842                      | -2.4   | 0.07768                      | -3.3   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.08610                      | 7.3    | 0.08079                      | 0.7    | 0.07936                      | -1.1   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.08112                      | 1.0    | 0.07842                      | -2.4   | 0.07945                      | -1.1   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.08049                      | 0.2    | 0.08025                      | -0.1   | 0.08087                      | 0.7    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.07917                      | -1.4   | 0.07745                      | -3.6   | 0.07587                      | -5.5   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07953                      | -1.0   | 0.07827                      | -2.6   | 0.08039                      | 0.1    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07976                      | -0.7   | 0.07766                      | -3.3   | 0.08004                      | -0.3   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.07991                      | -0.5   | 0.07820                      | -2.6   | 0.08109                      | 1.0    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07840                      | -2.2   | 0.07470                      | -6.8   | 0.08018                      | 0.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07857                      | -2.2   | 0.07277                      | -9.4   | 0.07985                      | -0.6   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07909                      | -1.3   | 0.07523                      | -6.2   | 0.07098                      | -11.5  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07930                      | -1.3   | 0.08230                      | 2.5    | 0.07399                      | -7.9   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07978                      | -0.3   | 0.07654                      | -4.3   | 0.07466                      | -6.7   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07589                      | -5.5   | 0.07478                      | -6.9   | 0.07642                      | -4.9   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.08026                      | 0.2    | 0.07702                      | -3.8   | 0.08042                      | 0.4    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.07463                      | -7.1   | 0.08396                      | 4.5    | 0.08380                      | 4.3    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.07894                      | -1.5   | 0.07760                      | -3.2   | 0.07998                      | -0.2   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.07975                      | -0.5   | 0.08131                      | 1.4    | 0.08569                      | 6.9    |
| 33  | Cl6(161)  | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.08554                      | 6.5    | 0.08727                      | 8.7    | 0.08366                      | 4.2    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.08714                      | 8.5    | 0.08040                      | 0.1    | 0.08142                      | 1.4    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.08128                      | 1.2    | 0.07511                      | -6.5   | 0.07722                      | -3.9   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.08214                      | 2.4    | 0.07679                      | -4.3   | 0.07988                      | -0.4   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08526                      | 6.2    | 0.08578                      | 6.8    | 0.07797                      | -2.9   |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.08322                      | 3.6    | 0.07804                      | -2.8   | 0.08124                      | 1.1    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.08162                      | 1.6    | 0.07820                      | -2.6   | 0.08019                      | -0.2   |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08054                      | 0.3    | 0.07890                      | -1.8   | 0.08126                      | 1.2    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08052                      | 0.2    | 0.07737                      | -3.7   | 0.08136                      | 1.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08036                      | 0.0    | 0.07743                      | -3.6   | 0.08234                      | 2.5    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.07935                      | -1.0   | 0.07568                      | -5.6   | 0.08254                      | 3.0    |

## CCV Summary Report

Batch: 14-0494 Data Set: DP-14-0676  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7366.D     |        | M7388.D |        | M7410.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.08032 | 0.07979     | -0.7   | 0.07593 | -5.5   | 0.08241 | 2.6    |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 2.5    | 3.7     | 2.7    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED

**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

**M7432.D**

IE08 mid

11/02/2014 13:21

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.07370 | -8.1   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.07586 | -5.6   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07709 | -3.6   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07902 | -1.6   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07724 | -3.5   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07754 | -3.5   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07669 | -4.3   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.07770 | -3.1   |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.07879 | -1.9   |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.07357 | -8.4   |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.07530 | -6.2   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.07793 | -2.9   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07653 | -4.7   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.07773 | -3.2   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.07872 | -2.0   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07626 | -5.1   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07629 | -5.0   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.07812 | -2.7   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07721 | -3.7   |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07702 | -4.1   |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07130 | -11.1  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07551 | -6.0   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07284 | -8.9   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07130 | -11.2  |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.06982 | -12.8  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.07996 | -0.4   |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.07663 | -4.4   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.08769 | 9.4    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.07971 | -0.8   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.07601 | -5.4   |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.07189 | -10.5  |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.07651 | -4.6   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08114 | 1.0    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.08032 | 0.0    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.07841 | -2.4   |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08022 | -0.1   |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08053 | 0.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08138 | 1.3    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.08169 | 1.9    |



## CCV Summary Report

Batch: 14-0494 Data Set: DP-14-0676  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

M7432.D

IE08 mid

11/02/2014 13:21

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.08032 | 0.08166 | 1.7    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **4.4**  
Time Check: **< 24**

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

# Battelle

The Business of Innovation

## CCV Summary Report

**Batch:** 14-0494 **Data Set:** DP-14-0676  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417F.M **Last Updated:** 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7377.D                     |                | M7399.D                      |                | M7421.D                      |        |
|--|----------|-------|------|------|---------|-----------------------------|----------------|------------------------------|----------------|------------------------------|--------|
|  |          |       |      |      |         | MID                         | % Diff         | MID                          | % Diff         | MID                          | % Diff |
|  |          |       |      |      |         | IE07mid<br>10/31/2014 20:28 |                | IE07 mid<br>11/01/2014 12:47 |                | IE07 mid<br>11/02/2014 05:07 |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                             |                |                              |                |                              |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.04008 | 0.03903                     | -2.6           | 0.03852                      | -3.9           | 0.03737                      | -6.8   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                             |                |                              |                |                              |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.04008 | 0.03786                     | -5.5           | 0.04117                      | 2.7            | 0.03744                      | -6.6   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>             | <b>4.1</b>     | <b>3.3</b>                   | <b>6.7</b>     |                              |        |
|  |          |       |      |      |         | <b>Time Check:</b>          | <b>&lt; 24</b> | <b>&lt; 24</b>               | <b>&lt; 24</b> |                              |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

Batch: 14-0494 Data Set: DP-14-0676  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7366.D            |                  | M7388.D          |                | M7410.D |        |
|--|----------|-------|------|------|---------|--------------------|------------------|------------------|----------------|---------|--------|
|  |          |       |      |      |         | MID                | % Diff           | MID              | % Diff         | MID     | % Diff |
|  |          |       |      |      |         | 10/31/2014 12:18   | 11/01/2014 04:38 | 11/01/2014 20:56 |                |         |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                    |                  |                  |                |         |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.08016 | 0.07937            | -1.0             | 0.07367          | -8.1           | 0.07294 | -9.0   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                    |                  |                  |                |         |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.08016 | 0.07734            | -3.5             | 0.07392          | -7.8           | 0.07470 | -6.8   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>    | <b>2.3</b>       | <b>8.0</b>       | <b>7.9</b>     |         |        |
|  |          |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b>   | <b>&lt; 24</b>   | <b>&lt; 24</b> |         |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : NA  
 Total Cpnds : 45

IE03 =M7205.D IE05 =M7207.D IE06 =M7208.D IE07 =M7209.D  
 IE08 =M7210.D IE10 =M7212.D

| Compound         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|------------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)      | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C12(8)         | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 C13(18)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 4 s C13(34)      | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 5 C13(28)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 6 C14(52)        | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 7 C14(44)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 8 C14(66)        | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 9 C15(101)       | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 10 I C16(161)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 11 s C16(152)    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 12 C15(118)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 13 C16(153)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 14 C15(105)      | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 15 C16(138)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 16 C17(187)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 17 C16(128)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 18 C17(180)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 19 C17(170)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 20 C18(195)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 21 C19(206)      | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 22 C110(209)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 23 Signal #2     | -----   | -----   | -----   | -----   | -----   | -----   |
| 24 I C15(96) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 25 C12(8) #2     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 26 C13(18) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 27 s C13(34) #2  | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 28 C13(28) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 29 C14(52) #2    | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 30 C14(44) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 31 C14(66) #2    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 32 C15(101) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 33 I C16(161) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 34 s C16(152) #2 | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 35 C15(118) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 36 C16(153) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 37 C15(105) #2   | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 38 C16(138) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 39 C17(187) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 40 C16(128) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 41 C17(180) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 42 C17(170) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 43 C18(195) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 44 C19(206) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 45 C110(209) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015

Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 5

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound |             | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------|-------------|---------|---------|---------|---------|---------|---------|
| 1 I      | C15(96)     | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2        | C15(101)    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3        | Signal #2   | -----   | -----   | -----   | -----   | -----   | -----   |
| 4 I      | C15(96) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 5        | C15(101) #2 | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2021371m  | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4304957   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12822282m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 28199596m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.40    | 119959m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 106015    | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.48    | 687843m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.58    | 473925m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 49812m    | BelowCal | ng    |
| 3) C13(18)                  | 12.13    | 63919m    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 91859m    | BelowCal | ng    |
| 6) C14(52)                  | 15.84    | 129752    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 95909     | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 103819m   | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 90878m    | BelowCal | ng    |
| 12) C15(118)                | 22.40    | 106241m   | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 91576m    | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 124823m   | BelowCal | ng    |
| 15) C16(138)                | 24.53    | 127136m   | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 111442m   | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 120454m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 127788    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 138646m   | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 129501    | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 121956m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 102714m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 291232m   | BelowCal | ng    |
| 26) C13(18) #2              | 15.00    | 430280m   | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 635375m   | BelowCal | ng    |
| 29) C14(52) #2              | 19.15f   | 407881m   | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 700530m   | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 702095m   | BelowCal | ng    |
| 32) C15(101) #2             | 23.30f   | 369053m   | BelowCal | ng    |
| 35) C15(118) #2             | 26.37    | 931211m   | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 730887    | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 816392    | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 461727m   | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 667680    | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 880477m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 788251m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 800002m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 715719m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 637238m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 518551m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2103011   | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4562564   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12416297m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 27129752m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.39    | 297705    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 348526    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.47    | 1801754m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.57    | 1960933m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 180784    | BelowCal | ng    |
| 3) C13(18)                  | 12.12    | 242567    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 356002    | BelowCal | ng    |
| 6) C14(52)                  | 15.83    | 330341    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 371149    | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 419278    | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 349240m   | BelowCal | ng    |
| 12) C15(118)                | 22.39    | 435665    | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 390283m   | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 495013m   | BelowCal | ng    |
| 15) C16(138)                | 24.54    | 508129    | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 449817    | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 436637m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 515383    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 571467    | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 524255m   | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 492822m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 411674m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 1082243m  | BelowCal | ng    |
| 26) C13(18) #2              | 14.99    | 1474380m  | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 2242630m  | BelowCal | ng    |
| 29) C14(52) #2              | 19.14    | 1313663m  | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 2184906m  | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 2512274m  | BelowCal | ng    |
| 32) C15(101) #2             | 23.22f   | 2401459m  | BelowCal | ng    |
| 35) C15(118) #2             | 26.34    | 1802006m  | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 2453717   | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 2870795   | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 1892629m  | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 2289736   | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3074334  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 2699532  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 2859094m | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 2571011m | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 2275330m | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 1828475m | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc          | Units |
|-----------------------------|----------|-----------|---------------|-------|
| Internal Standards          |          |           |               |       |
| 1) I C15(96)                | 17.39    | 2225995   | 0.10000       | ng    |
| 10) I C16(161)              | 23.21    | 4815577   | 0.10000       | ng    |
| 24) I C15(96) #2            | 20.51    | 13716870m | 0.10000       | ng    |
| 33) I C16(161) #2           | 26.79    | 29503850m | 0.10000       | ng    |
| System Monitoring Compounds |          |           |               |       |
| 4) s C13(34)                | 13.40    | 526303    | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 11) s C16(152)              | 20.48    | 653892    | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| 27) s C13(34) #2            | 16.47    | 3296041m  | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 34) s C16(152) #2           | 23.58    | 3413733m  | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| Target Compounds            |          |           |               |       |
| 2) C12(8)                   | 10.20    | 333163    | BelowCal      | ng    |
| 3) C13(18)                  | 12.12    | 432057    | BelowCal      | ng    |
| 5) C13(28)                  | 14.21    | 687914    | BelowCal      | ng    |
| 6) C14(52)                  | 15.83    | 566807    | BelowCal      | ng    |
| 7) C14(44)                  | 16.70    | 718063    | BelowCal      | ng    |
| 8) C14(66)                  | 18.60    | 781317    | BelowCal      | ng    |
| 9) C15(101)                 | 19.73    | 762207m   | BelowCal      | ng    |
| 12) C15(118)                | 22.39    | 822121    | 0.03093       | ng    |
| 13) C16(153)                | 23.43 TW | 582042m   | BelowCal      | ng    |
| 14) C15(105)                | 23.44 TW | 965663m   | BelowCal      | ng    |
| 15) C16(138)                | 24.53    | 972641    | BelowCal      | ng    |
| 16) C17(187)                | 25.29    | 855745    | BelowCal      | ng    |
| 17) C16(128)                | 25.63    | 864076m   | BelowCal      | ng    |
| 18) C17(180)                | 27.16    | 964577    | BelowCal      | ng    |
| 19) C17(170)                | 27.96    | 1081580   | BelowCal      | ng    |
| 20) C18(195)                | 29.04    | 1016052   | 0.02214       | ng    |
| 21) C19(206)                | 30.30 e  | 959902m   | BelowCal      | ng    |
| 22) C110(209)               | 30.90    | 792978    | BelowCal      | ng    |
| 25) C12(8) #2               | 13.10    | 2106184m  | BelowCal      | ng    |
| 26) C13(18) #2              | 14.99    | 2769502m  | BelowCal      | ng    |
| 28) C13(28) #2              | 17.76    | 4386422m  | BelowCal      | ng    |
| 29) C14(52) #2              | 19.14    | 2862174m  | BelowCal      | ng    |
| 30) C14(44) #2              | 19.96    | 4484836m  | BelowCal      | ng    |
| 31) C14(66) #2              | 22.35    | 4845930m  | BelowCal      | ng    |
| 32) C15(101) #2             | 23.22f   | 5513291m  | BelowCal      | ng    |
| 35) C15(118) #2             | 26.35    | 4335255m  | BelowCal      | ng    |
| 36) C16(153) #2             | 26.93    | 4720338   | 1858066.56915 | ng    |
| 37) C15(105) #2             | 27.20    | 5791618   | 1122307.10620 | ng    |
| 38) C16(138) #2             | 27.78    | 3691173m  | BelowCal      | ng    |
| 39) C17(187) #2             | 28.14    | 4540027   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc          | Units |
|-----|--------------|-------|----------|---------------|-------|
| 40) | C16(128) #2  | 28.54 | 6164428  | BelowCal      | ng    |
| 41) | C17(180) #2  | 29.58 | 5451699  | BelowCal      | ng    |
| 42) | C17(170) #2  | 30.21 | 5828332m | 1341992.36163 | ng    |
| 43) | C18(195) #2  | 31.08 | 5312720  | BelowCal      | ng    |
| 44) | C19(206) #2  | 32.18 | 4740147m | BelowCal      | ng    |
| 45) | C110(209) #2 | 32.62 | 3772500m | 1559880.63544 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response    | Conc          | Units |
|------------------------------------|--------|-------------|---------------|-------|
| <b>Internal Standards</b>          |        |             |               |       |
| 1) I C15(96)                       | 17.39  | 2400478     | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5366502     | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 14992953m   | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34497986    | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |             |               |       |
| 4) s C13(34)                       | 13.40  | 990336      | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 1280995     | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 6281919m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58  | 7591525m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| <b>Target Compounds</b>            |        |             |               |       |
| 2) C12(8)                          | 10.21  | e 607269    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | e 758928    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | e 1349346   | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | e 1019304   | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | e 1370610   | 4937947.47625 | ng    |
| 8) C14(66)                         | 18.60  | e 1544814   | BelowCal      | ng    |
| 9) C15(101)                        | 19.73  | e 1552699m  | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | e 1625326   | BelowCal      | ng    |
| 13) C16(153)                       | 23.43  | TW 1671077m | BelowCal      | ng    |
| 14) C15(105)                       | 23.44  | TW 2067241m | BelowCal      | ng    |
| 15) C16(138)                       | 24.53  | E 1975640   | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | e 1704362m  | BelowCal      | ng    |
| 17) C16(128)                       | 25.63  | e 1845001m  | BelowCal      | ng    |
| 18) C17(180)                       | 27.16  | E 2019174m  | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 2282709   | 3008040.19192 | ng    |
| 20) C18(195)                       | 29.04  | E 2138682m  | BelowCal      | ng    |
| 21) C19(206)                       | 30.30  | E 2074698m  | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 1700197m  | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | e 4038278m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | e 4609294m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | e 8581359m  | 2635734.36911 | ng    |
| 29) C14(52) #2                     | 19.14  | e 4960711m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96  | e 8717176m  | 1574158.07943 | ng    |
| 31) C14(66) #2                     | 22.36  | e 9936993m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | e 12947398m | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | 9808234m    | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 9577231   | 5152267.10485 | ng    |
| 37) C15(105) #2                    | 27.20  | E 12760987  | 3375570.13183 | ng    |
| 38) C16(138) #2                    | 27.78  | e 8526537m  | 1389497.67562 | ng    |
| 39) C17(187) #2                    | 28.14  | E 9590626   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units            |
|-----|--------------|-------|----------|-----------|------------------|
| 40) | C16(128) #2  | 28.54 | E        | 13380771  | BelowCal ng      |
| 41) | C17(180) #2  | 29.58 | E        | 11878441m | BelowCal ng      |
| 42) | C17(170) #2  | 30.21 | E        | 12986040m | 4087411.97930 ng |
| 43) | C18(195) #2  | 31.08 | E        | 11911883m | BelowCal ng      |
| 44) | C19(206) #2  | 32.18 | E        | 10701956m | BelowCal ng      |
| 45) | C110(209) #2 | 32.62 | E        | 8387432m  | 5983940.61406 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response      | Conc          | Units |
|------------------------------------|--------|---------------|---------------|-------|
| <b>Internal Standards</b>          |        |               |               |       |
| 1) I C15(96)                       | 17.39  | 2523572       | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5424577       | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 15446142m     | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34872167      | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |               |               |       |
| 4) s C13(34)                       | 13.40  | 1861197       | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 2391536       | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 12156621m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 13279030m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| <b>Target Compounds</b>            |        |               |               |       |
| 2) C12(8)                          | 10.21  | E 1130878     | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | E 1399997     | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | E 2563059     | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | E 1879706     | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | E 2546734m    | 8209713.15303 | ng    |
| 8) C14(66)                         | 18.60  | E 2898127     | BelowCal      | ng    |
| 9) C15(101)                        | 19.74  | E 2892299m    | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | E 2978206     | BelowCal      | ng    |
| 13) C16(153)                       | 23.44  | TW e 2876946m | BelowCal      | ng    |
| 14) C15(105)                       | 23.45  | TW e 3582092m | 1460512.29312 | ng    |
| 15) C16(138)                       | 24.54  | E 3695490     | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | E 3239289     | BelowCal      | ng    |
| 17) C16(128)                       | 25.64  | E 3673746m    | 3005443.36077 | ng    |
| 18) C17(180)                       | 27.15  | E 3855848m    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 4378231     | 5123824.53354 | ng    |
| 20) C18(195)                       | 29.04  | E 4116319m    | BelowCal      | ng    |
| 21) C19(206)                       | 30.31  | E 3960506m    | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 3217630m    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | E 7701304     | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | E 8745402m    | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | E 16942159    | 4721046.44848 | ng    |
| 29) C14(52) #2                     | 19.14  | E 9969394     | 3586542.90657 | ng    |
| 30) C14(44) #2                     | 19.96  | E 17386149m   | 5402544.89334 | ng    |
| 31) C14(66) #2                     | 22.35  | E 19075871m   | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | E 25811518m   | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 16530172m   | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 17723976    | 8475069.04022 | ng    |
| 37) C15(105) #2                    | 27.20  | E 24719069    | 5584053.95798 | ng    |
| 38) C16(138) #2                    | 27.78  | E 17133888m   | 4026737.36316 | ng    |
| 39) C17(187) #2                    | 28.14  | E 18398636    | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 26047859  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 23443478m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 25601551m | 6820215.95092 ng  |
| 43) | C18(195) #2  | 31.08 | E        | 23548017m | BelowCal ng       |
| 44) | C19(206) #2  | 32.18 | E        | 21216572m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 16438463m | 10094597.27940 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response       | Conc           | Units |
|------------------------------------|--------|----------------|----------------|-------|
| <b>Internal Standards</b>          |        |                |                |       |
| 1) I C15(96)                       | 17.39  | 2857033m       | 0.10000        | ng    |
| 10) I C16(161)                     | 23.21  | 5785136        | 0.10000        | ng    |
| 24) I C15(96) #2                   | 20.51  | 15534608m      | 0.10000        | ng    |
| 33) I C16(161) #2                  | 26.79  | 28894537       | 0.10000        | ng    |
| <b>System Monitoring Compounds</b> |        |                |                |       |
| 4) s C13(34)                       | 13.40  | 6582490m       | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 11) s C16(152)                     | 20.48  | 8920810        | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 39634387m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 49764814m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| <b>Target Compounds</b>            |        |                |                |       |
| 2) C12(8)                          | 10.21  | E 3802803      | BelowCal       | ng    |
| 3) C13(18)                         | 12.12  | E 4625770      | BelowCal       | ng    |
| 5) C13(28)                         | 14.20  | E 9305861      | BelowCal       | ng    |
| 6) C14(52)                         | 15.83  | E 6491550m     | BelowCal       | ng    |
| 7) C14(44)                         | 16.70  | E 9213228m     | 16878676.73504 | ng    |
| 8) C14(66)                         | 18.60  | E 10581706     | BelowCal       | ng    |
| 9) C15(101)                        | 19.74  | E 11214785m    | BelowCal       | ng    |
| 12) C15(118)                       | 22.39  | E 10845273     | BelowCal       | ng    |
| 13) C16(153)                       | 23.44  | TW E 11086255m | BelowCal       | ng    |
| 14) C15(105)                       | 23.45  | TW E 12238036m | 4834222.71684  | ng    |
| 15) C16(138)                       | 24.54  | E 14181010     | BelowCal       | ng    |
| 16) C17(187)                       | 25.28  | E 12362255m    | BelowCal       | ng    |
| 17) C16(128)                       | 25.63  | E 13614003m    | 7619432.15592  | ng    |
| 18) C17(180)                       | 27.16  | E 15356923     | BelowCal       | ng    |
| 19) C17(170)                       | 27.96  | E 17491960     | 11231671.25949 | ng    |
| 20) C18(195)                       | 29.04  | E 16570469m    | BelowCal       | ng    |
| 21) C19(206)                       | 30.30  | E 15913312m    | BelowCal       | ng    |
| 22) C110(209)                      | 30.90  | E 12593895m    | BelowCal       | ng    |
| 25) C12(8) #2                      | 13.10  | E 24205484m    | BelowCal       | ng    |
| 26) C13(18) #2                     | 14.99  | E 27041957m    | BelowCal       | ng    |
| 28) C13(28) #2                     | 17.76  | E 56387566m    | 9817113.52330  | ng    |
| 29) C14(52) #2                     | 19.14  | E 31213496m    | 8327658.06829  | ng    |
| 30) C14(44) #2                     | 19.96  | E 56797595m    | 12385262.50102 | ng    |
| 31) C14(66) #2                     | 22.36  | E 65508405m    | BelowCal       | ng    |
| 32) C15(101) #2                    | 23.21f | E 73990498m    | BelowCal       | ng    |
| 35) C15(118) #2                    | 26.34  | E 53052856m    | BelowCal       | ng    |
| 36) C16(153) #2                    | 26.93  | E 58782173     | 19272949.92145 | ng    |
| 37) C15(105) #2                    | 27.20  | E 87183647     | 12882056.53676 | ng    |
| 38) C16(138) #2                    | 27.78  | E 63446136m    | 10766758.70710 | ng    |
| 39) C17(187) #2                    | 28.14  | E 63573730     | BelowCal       | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 91431997  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 83277221m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 91217127m | 15760612.61828 ng |
| 43) | C18(195) #2  | 31.08 | E        | 84844015m | BelowCal ng       |
| 44) | C19(206) #2  | 32.17 | E        | 76001510m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 57560994m | 23285632.07742 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |      |
|-----------------------------|--------|-----------|---------|---------|------|
| Internal Standards          |        |           |         |         |      |
| 1) I C15(96)                | 17.39  | 2508888   | 0.10000 | ng      |      |
| 10) I C16(161)              | 23.21  | 5353469   | 0.10000 | ng      |      |
| 24) I C15(96) #2            | 20.51  | 13969685m | 0.10000 | ng      |      |
| 33) I C16(161) #2           | 26.78  | 30447371  | 0.10000 | ng      |      |
| System Monitoring Compounds |        |           |         |         |      |
| 4) s C13(34)                | 13.40  | 1040909   | 0.04104 | ng      | 2.6  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 102.60% |      |
| 11) s C16(152)              | 20.48  | 1350202   | 0.04329 | ng      | 7.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 107.79% |      |
| 27) s C13(34) #2            | 16.47  | 6131122m  | 0.04171 | ng      | 4.3  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 104.27% |      |
| 34) s C16(152) #2           | 23.57  | 6327177m  | 0.04129 | ng      | 2.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 102.81% |      |
| Target Compounds            |        |           |         |         |      |
| 2) C12(8)                   | 10.21  | 664551    | 0.04326 | ng      | 8.1  |
| 3) C13(18)                  | 12.12  | 802051    | 0.04152 | ng      | 3.8  |
| 5) C13(28)                  | 14.21  | 1396518   | 0.04098 | ng      | 2.5  |
| 6) C14(52)                  | 15.83  | 1070948   | 0.04112 | ng      | 2.8  |
| 7) C14(44)                  | 16.70  | 1426889m  | 0.04167 | ng      | 4.2  |
| 8) C14(66)                  | 18.60  | 1565208   | 0.04028 | ng      | 0.7  |
| 9) C15(101)                 | 19.73  | 1426993m  | 0.03706 | ng      | -7.3 |
| 12) C15(118)                | 22.39  | 1627776   | 0.04151 | ng      | 3.8  |
| 13) C16(153)                | 23.43  | 1467714m  | 0.03933 | ng      | -1.7 |
| 14) C15(105)                | 23.45  | 1824192m  | 0.03778 | ng      | -5.5 |
| 15) C16(138)                | 24.53  | 2023467   | 0.04232 | ng      | 5.8  |
| 16) C17(187)                | 25.29  | 1787515   | 0.04281 | ng      | 7.0  |
| 17) C16(128)                | 25.63  | 1824156m  | 0.03935 | ng      | -1.6 |
| 18) C17(180)                | 27.15  | 2038700   | 0.04138 | ng      | 3.4  |
| 19) C17(170)                | 27.96  | 2269675   | 0.04068 | ng      | 1.7  |
| 20) C18(195)                | 29.04  | 2088594m  | 0.03989 | ng      | -0.3 |
| 21) C19(206)                | 30.30  | 1961931m  | 0.03884 | ng      | -2.9 |
| 22) C110(209)               | 30.90  | 1612364m  | 0.03909 | ng      | -2.3 |
| 25) C12(8) #2               | 13.10  | 3947204m  | 0.04248 | ng      | 6.2  |
| 26) C13(18) #2              | 14.99  | 4351305m  | 0.03989 | ng      | -0.3 |
| 28) C13(28) #2              | 17.76  | 8214453m  | 0.04094 | ng      | 2.3  |
| 29) C14(52) #2              | 19.14  | 4859257m  | 0.04058 | ng      | 1.4  |
| 30) C14(44) #2              | 19.96  | 8466239m  | 0.04126 | ng      | 3.1  |
| 31) C14(66) #2              | 22.35  | 9294328m  | 0.04096 | ng      | 2.4  |
| 32) C15(101) #2             | 23.24  | 4934904m  | 0.03828 | ng      | -4.3 |
| 35) C15(118) #2             | 26.35  | 7705344m  | 0.03951 | ng      | -1.2 |
| 36) C16(153) #2             | 26.93  | 8835029   | 0.04347 | ng      | 8.7  |
| 37) C15(105) #2             | 27.20  | 11200960m | 0.04079 | ng      | 2.0  |
| 38) C16(138) #2             | 27.78  | 7622194m  | 0.04108 | ng      | 2.7  |
| 39) C17(187) #2             | 28.14  | 8806327   | 0.04269 | ng      | 6.7  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |      |
|-----|--------------|-------|-----------|---------|-------|------|
| 40) | C16(128) #2  | 28.54 | 11964334m | 0.04137 | ng    | 3.4  |
| 41) | C17(180) #2  | 29.58 | 10533125m | 0.04073 | ng    | 1.8  |
| 42) | C17(170) #2  | 30.21 | 11398863m | 0.04051 | ng    | 1.3  |
| 43) | C18(195) #2  | 31.08 | 10207239m | 0.03956 | ng    | -1.1 |
| 44) | C19(206) #2  | 32.18 | 9021058m  | 0.03879 | ng    | -3.0 |
| 45) | C110(209) #2 | 32.62 | 7069806m  | 0.03894 | ng    | -2.6 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc    | Units   |
|-----------------------------|----------|-----------|---------|---------|
| Internal Standards          |          |           |         |         |
| 1) I C15(96)                | 17.39    | 2882190   | 0.10000 | ng      |
| 10) I C16(161)              | 23.20    | 5955181m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.51    | 14867149m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.78    | 32248189m | 0.10000 | ng      |
| System Monitoring Compounds |          |           |         |         |
| 4) s C13(34)                | 13.40    | 2056445   | 0.07633 | ng      |
| Spiked Amount               | 0.0800   | Recovery  | =       | 95.41%  |
| 11) s C16(152)              | 20.48    | 2750113   | 0.08364 | ng      |
| Spiked Amount               | 0.0803   | Recovery  | =       | 104.13% |
| 27) s C13(34) #2            | 16.47    | 11680156m | 0.07978 | ng      |
| Spiked Amount               | 0.0800   | Recovery  | =       | 99.73%  |
| 34) s C16(152) #2           | 23.57    | 13479403m | 0.08554 | ng      |
| Spiked Amount               | 0.0803   | Recovery  | =       | 106.50% |
| Target Compounds            |          |           |         |         |
| 2) C12(8)                   | 10.21    | 1313763   | 0.08039 | ng      |
| 3) C13(18)                  | 12.12    | 1652169   | 0.08189 | ng      |
| 5) C13(28)                  | 14.21    | 2904281   | 0.07849 | ng      |
| 6) C14(52)                  | 15.83    | 2118533   | 0.07784 | ng      |
| 7) C14(44)                  | 16.70    | 2930548   | 0.07941 | ng      |
| 8) C14(66)                  | 18.60    | 3250928   | 0.07726 | ng      |
| 9) C15(101)                 | 19.73    | 3135588m  | 0.07417 | ng      |
| 12) C15(118)                | 22.39    | 3391627   | 0.08232 | ng      |
| 13) C16(153)                | 23.44 TW | 3325754m  | 0.08283 | ng      |
| 14) C15(105)                | 23.45 TW | 4290980m  | 0.08610 | ng      |
| 15) C16(138)                | 24.54    | 4140770   | 0.08112 | ng      |
| 16) C17(187)                | 25.29    | 3591602   | 0.08049 | ng      |
| 17) C16(128)                | 25.63    | 3967350m  | 0.07917 | ng      |
| 18) C17(180)                | 27.16    | 4224797   | 0.07953 | ng      |
| 19) C17(170)                | 27.96    | 4807838   | 0.07976 | ng      |
| 20) C18(195)                | 29.04    | 4527356m  | 0.07991 | ng      |
| 21) C19(206)                | 30.30    | 4290703m  | 0.07840 | ng      |
| 22) C110(209)               | 30.90    | 3490153m  | 0.07857 | ng      |
| 25) C12(8) #2               | 13.10    | 7377859m  | 0.07909 | ng      |
| 26) C13(18) #2              | 14.99    | 8391039m  | 0.07930 | ng      |
| 28) C13(28) #2              | 17.76    | 15496377m | 0.07589 | ng      |
| 29) C14(52) #2              | 19.14    | 9602649m  | 0.08026 | ng      |
| 30) C14(44) #2              | 19.96    | 15619829m | 0.07463 | ng      |
| 31) C14(66) #2              | 22.35    | 18232972m | 0.07894 | ng      |
| 32) C15(101) #2             | 23.24    | 10563798m | 0.07975 | ng      |
| 35) C15(118) #2             | 26.35    | 17048307m | 0.08714 | ng      |
| 36) C16(153) #2             | 26.93    | 16841670  | 0.08128 | ng      |
| 37) C15(105) #2             | 27.20    | 23616805  | 0.08214 | ng      |
| 38) C16(138) #2             | 27.78    | 16916056m | 0.08526 | ng      |
| 39) C17(187) #2             | 28.14    | 17802516  | 0.08322 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 24675623m | 0.08162 | ng    |
| 41) | C17(180) #2  | 29.58 | 21864119m | 0.08054 | ng    |
| 42) | C17(170) #2  | 30.21 | 23885905m | 0.08052 | ng    |
| 43) | C18(195) #2  | 31.08 | 21927027m | 0.08036 | ng    |
| 44) | C19(206) #2  | 32.18 | 19527504m | 0.07935 | ng    |
| 45) | C110(209) #2 | 32.62 | 15207536m | 0.07979 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7377.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0420\M7377.D\ECD2B.CH  
 Acq On : 10-31-2014 08:28:21 PM Operator: RR  
 Sample : IE07mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc    | Units   |
|-----------------------------|----------|-----------|---------|---------|
| Internal Standards          |          |           |         |         |
| 1) I C15(96)                | 17.39    | 3346131   | 0.10000 | ng      |
| 10) I C16(161)              | 23.21    | 7516612m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52    | 16866362m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79    | 40275220  | 0.10000 | ng      |
| System Monitoring Compounds |          |           |         |         |
| 4) s C13(34)                | 13.40    | 1374919   | 0.04058 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 101.45% |
| 11) s C16(152)              | 20.48    | 1832941   | 0.04172 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 103.88% |
| 27) s C13(34) #2            | 16.47    | 7125992m  | 0.03996 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 99.90%  |
| 34) s C16(152) #2           | 23.58    | 9096291m  | 0.04518 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 112.50% |
| Target Compounds            |          |           |         |         |
| 2) C12(8)                   | 10.21    | 852744    | 0.04138 | ng      |
| 3) C13(18)                  | 12.12    | 1051363   | 0.04069 | ng      |
| 5) C13(28)                  | 14.21    | 1917066   | 0.04229 | ng      |
| 6) C14(52)                  | 15.83    | 1420109   | 0.04084 | ng      |
| 7) C14(44)                  | 16.70    | 1870801m  | 0.04088 | ng      |
| 8) C14(66)                  | 18.60    | 2133601   | 0.04126 | ng      |
| 9) C15(101)                 | 19.73    | 2048754m  | 0.04011 | ng      |
| 12) C15(118)                | 22.39    | 2237243   | 0.04055 | ng      |
| 13) C16(153)                | 23.44 TW | 2138917m  | 0.04089 | ng      |
| 14) C15(105)                | 23.45 TW | 2525706m  | 0.03720 | ng      |
| 15) C16(138)                | 24.54    | 2743242   | 0.04075 | ng      |
| 16) C17(187)                | 25.29    | 2442220   | 0.04157 | ng      |
| 17) C16(128)                | 25.63    | 2504446m  | 0.03844 | ng      |
| 18) C17(180)                | 27.15    | 2793268m  | 0.04032 | ng      |
| 19) C17(170)                | 27.96    | 3168737   | 0.04044 | ng      |
| 20) C18(195)                | 29.04    | 2973813m  | 0.04048 | ng      |
| 21) C19(206)                | 30.30    | 2802345m  | 0.03955 | ng      |
| 22) C110(209)               | 30.90    | 2272215m  | 0.03924 | ng      |
| 25) C12(8) #2               | 13.10    | 4490056m  | 0.03978 | ng      |
| 26) C13(18) #2              | 14.99    | 5067471m  | 0.03823 | ng      |
| 28) C13(28) #2              | 17.76    | 9775966   | 0.04031 | ng      |
| 29) C14(52) #2              | 19.14    | 6081713   | 0.04222 | ng      |
| 30) C14(44) #2              | 19.97    | 9702527m  | 0.03901 | ng      |
| 31) C14(66) #2              | 22.36    | 11551070  | 0.04225 | ng      |
| 32) C15(101) #2             | 23.24    | 5808034m  | 0.03722 | ng      |
| 35) C15(118) #2             | 26.35    | 9890720m  | 0.03823 | ng      |
| 36) C16(153) #2             | 26.94    | 10415976  | 0.03831 | ng      |
| 37) C15(105) #2             | 27.20    | 14374253  | 0.03953 | ng      |
| 38) C16(138) #2             | 27.78    | 10545215m | 0.04297 | ng      |
| 39) C17(187) #2             | 28.14    | 11080556  | 0.04049 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7377.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0420\M7377.D\ECD2B.CH  
 Acq On : 10-31-2014 08:28:21 PM Operator: RR  
 Sample : IE07mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 15514216  | 0.04052 | ng    |
| 41) | C17(180) #2  | 29.58 | 13837804  | 0.04045 | ng    |
| 42) | C17(170) #2  | 30.21 | 14759711m | 0.03963 | ng    |
| 43) | C18(195) #2  | 31.09 | 13473467m | 0.03948 | ng    |
| 44) | C19(206) #2  | 32.18 | 11930585m | 0.03878 | ng    |
| 45) | C110(209) #2 | 32.62 | 9316319m  | 0.03878 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7388.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0420\M7388.D\ECD2B.CH  
 Acq On : 11-1-2014 04:37:35 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |
|-----------------------------|--------|-----------|---------|---------|
| Internal Standards          |        |           |         |         |
| 1) I C15(96)                | 17.39  | 3628030m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.21  | 7918673m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52  | 17623513  | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79  | 38521988  | 0.10000 | ng      |
| System Monitoring Compounds |        |           |         |         |
| 4) s C13(34)                | 13.40  | 2670711m  | 0.07909 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 98.86%  |
| 11) s C16(152)              | 20.48  | 3615109   | 0.08261 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 102.85% |
| 27) s C13(34) #2            | 16.48  | 13338719  | 0.07654 | ng      |
| Spiked Amount               | 0.0800 | Recovery  | =       | 95.67%  |
| 34) s C16(152) #2           | 23.58  | 16426306m | 0.08727 | ng      |
| Spiked Amount               | 0.0803 | Recovery  | =       | 108.65% |
| Target Compounds            |        |           |         |         |
| 2) C12(8)                   | 10.21  | 1609705   | 0.07794 | ng      |
| 3) C13(18)                  | 12.13  | 1943084   | 0.07566 | ng      |
| 5) C13(28)                  | 14.21  | 3725618   | 0.08015 | ng      |
| 6) C14(52)                  | 15.84  | 2684938   | 0.07845 | ng      |
| 7) C14(44)                  | 16.70  | 3689808m  | 0.07943 | ng      |
| 8) C14(66)                  | 18.60  | 4161758   | 0.07872 | ng      |
| 9) C15(101)                 | 19.74  | 3984740m  | 0.07493 | ng      |
| 12) C15(118)                | 22.39  | 4216245   | 0.07650 | ng      |
| 13) C16(153)                | 23.44  | 4198078m  | 0.07842 | ng      |
| 14) C15(105)                | 23.46  | 5387787m  | 0.08079 | ng      |
| 15) C16(138)                | 24.54  | 5333586   | 0.07842 | ng      |
| 16) C17(187)                | 25.29  | 4762662   | 0.08025 | ng      |
| 17) C16(128)                | 25.64  | 5165966m  | 0.07745 | ng      |
| 18) C17(180)                | 27.16  | 5532392   | 0.07827 | ng      |
| 19) C17(170)                | 27.96  | 6231578   | 0.07766 | ng      |
| 20) C18(195)                | 29.04  | 5896252m  | 0.07820 | ng      |
| 21) C19(206)                | 30.31  | 5445413m  | 0.07470 | ng      |
| 22) C110(209)               | 30.90  | 4312895m  | 0.07277 | ng      |
| 25) C12(8) #2               | 13.11  | 8359866   | 0.07523 | ng      |
| 26) C13(18) #2              | 14.99  | 10273158m | 0.08230 | ng      |
| 28) C13(28) #2              | 17.76  | 18121359  | 0.07478 | ng      |
| 29) C14(52) #2              | 19.15  | 10968183  | 0.07702 | ng      |
| 30) C14(44) #2              | 19.97  | 20638488m | 0.08396 | ng      |
| 31) C14(66) #2              | 22.36  | 21270948  | 0.07760 | ng      |
| 32) C15(101) #2             | 23.24  | 12764606m | 0.08131 | ng      |
| 35) C15(118) #2             | 26.35  | 18869702m | 0.08040 | ng      |
| 36) C16(153) #2             | 26.94  | 18656281  | 0.07511 | ng      |
| 37) C15(105) #2             | 27.20  | 26374006  | 0.07679 | ng      |
| 38) C16(138) #2             | 27.78  | 20333578m | 0.08578 | ng      |
| 39) C17(187) #2             | 28.14  | 19962146  | 0.07804 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7388.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0420\M7388.D\ECD2B.CH  
 Acq On : 11-1-2014 04:37:35 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 28245644  | 0.07820 | ng    |
| 41) | C17(180) #2  | 29.59 | 25584726  | 0.07890 | ng    |
| 42) | C17(170) #2  | 30.22 | 27405586  | 0.07737 | ng    |
| 43) | C18(195) #2  | 31.09 | 25224762  | 0.07743 | ng    |
| 44) | C19(206) #2  | 32.18 | 22234833m | 0.07568 | ng    |
| 45) | C110(209) #2 | 32.62 | 17284726m | 0.07593 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7399.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0420\M7399.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:47 pm Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:12 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.40    | 3678142   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22    | 8525114   | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 18104292m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 44507298  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 1485705m  | 0.03978 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 99.45%  |
| 11) s C16(152)                     | 20.48    | 2042428   | 0.04091 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 101.87% |
| 27) s C13(34) #2                   | 16.48    | 7448738m  | 0.03878 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 96.95%  |
| 34) s C16(152) #2                  | 23.58    | 9128302m  | 0.04070 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 101.34% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 894657    | 0.03922 | ng      |
| 3) C13(18)                         | 12.13    | 1111026   | 0.03884 | ng      |
| 5) C13(28)                         | 14.21    | 2092129   | 0.04196 | ng      |
| 6) C14(52)                         | 15.84    | 1548708   | 0.04045 | ng      |
| 7) C14(44)                         | 16.70    | 2081957m  | 0.04145 | ng      |
| 8) C14(66)                         | 18.60    | 2367586   | 0.04170 | ng      |
| 9) C15(101)                        | 19.73    | 2223158m  | 0.03956 | ng      |
| 12) C15(118)                       | 22.39    | 2500068   | 0.03989 | ng      |
| 13) C16(153)                       | 23.44 TW | 2461736m  | 0.04152 | ng      |
| 14) C15(105)                       | 23.45 TW | 2877640m  | 0.03738 | ng      |
| 15) C16(138)                       | 24.54    | 3089026   | 0.04044 | ng      |
| 16) C17(187)                       | 25.29    | 2747720   | 0.04121 | ng      |
| 17) C16(128)                       | 25.64    | 2716257m  | 0.03670 | ng      |
| 18) C17(180)                       | 27.16    | 3132021m  | 0.03983 | ng      |
| 19) C17(170)                       | 27.96    | 3537973m  | 0.03978 | ng      |
| 20) C18(195)                       | 29.04    | 3369766m  | 0.04044 | ng      |
| 21) C19(206)                       | 30.31    | 3205587m  | 0.03990 | ng      |
| 22) C110(209)                      | 30.90    | 2595247m  | 0.03953 | ng      |
| 25) C12(8) #2                      | 13.10    | 4657975m  | 0.03831 | ng      |
| 26) C13(18) #2                     | 15.00    | 5614451m  | 0.03969 | ng      |
| 28) C13(28) #2                     | 17.76    | 10007850m | 0.03829 | ng      |
| 29) C14(52) #2                     | 19.15    | 6044733m  | 0.03878 | ng      |
| 30) C14(44) #2                     | 19.97    | 11415270m | 0.04305 | ng      |
| 31) C14(66) #2                     | 22.36    | 12125109m | 0.04125 | ng      |
| 32) C15(101) #2                    | 23.25    | 6685993m  | 0.04018 | ng      |
| 35) C15(118) #2                    | 26.35    | 11085671m | 0.03883 | ng      |
| 36) C16(153) #2                    | 26.94    | 11160214m | 0.03702 | ng      |
| 37) C15(105) #2                    | 27.20    | 15593513m | 0.03877 | ng      |
| 38) C16(138) #2                    | 27.78    | 11547586m | 0.04258 | ng      |
| 39) C17(187) #2                    | 28.14    | 12407453  | 0.04106 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7399.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0420\M7399.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:47 pm Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:12 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 17192340m | 0.04064 | ng    |
| 41) | C17(180) #2  | 29.59 | 15516515m | 0.04106 | ng    |
| 42) | C17(170) #2  | 30.22 | 16976019m | 0.04129 | ng    |
| 43) | C18(195) #2  | 31.09 | 15635532m | 0.04149 | ng    |
| 44) | C19(206) #2  | 32.18 | 14085507m | 0.04147 | ng    |
| 45) | C110(209) #2 | 32.62 | 10937840m | 0.04127 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7410.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0420\M7410.D\ECD2B.CH  
 Acq On : 11-1-2014 08:56:13 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:11 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.39  | 3923147m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21  | 8844389m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52  | 19800765m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79  | 46635078m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.40  | 2845451   | 0.07777 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 97.21%  |
| 11) s C16(152)                     | 20.48  | 3983979   | 0.08142 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 101.37% |
| 27) s C13(34) #2                   | 16.48  | 14653213m | 0.07466 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 93.33%  |
| 34) s C16(152) #2                  | 23.58  | 19065674m | 0.08366 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 104.16% |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 1677951   | 0.07474 | ng      |
| 3) C13(18)                         | 12.13  | 2102243   | 0.07571 | ng      |
| 5) C13(28)                         | 14.21  | 4053540   | 0.08069 | ng      |
| 6) C14(52)                         | 15.84  | 2921555   | 0.07902 | ng      |
| 7) C14(44)                         | 16.70  | 3959334m  | 0.07875 | ng      |
| 8) C14(66)                         | 18.60  | 4603682   | 0.08072 | ng      |
| 9) C15(101)                        | 19.74  | 4625307m  | 0.08086 | ng      |
| 12) C15(118)                       | 22.39  | 4801699   | 0.07814 | ng      |
| 13) C16(153)                       | 23.44  | 4647009m  | 0.07768 | ng      |
| 14) C15(105)                       | 23.46  | 5920869m  | 0.07936 | ng      |
| 15) C16(138)                       | 24.54  | 6030819   | 0.07945 | ng      |
| 16) C17(187)                       | 25.29  | 5358113   | 0.08087 | ng      |
| 17) C16(128)                       | 25.63  | 5658193m  | 0.07587 | ng      |
| 18) C17(180)                       | 27.16  | 6339508   | 0.08039 | ng      |
| 19) C17(170)                       | 27.96  | 7164187   | 0.08004 | ng      |
| 20) C18(195)                       | 29.04  | 6819356m  | 0.08109 | ng      |
| 21) C19(206)                       | 30.31  | 6511645m  | 0.08018 | ng      |
| 22) C110(209)                      | 30.90  | 5263665m  | 0.07985 | ng      |
| 25) C12(8) #2                      | 13.11  | 8912640m  | 0.07098 | ng      |
| 26) C13(18) #2                     | 15.00  | 10519752m | 0.07399 | ng      |
| 28) C13(28) #2                     | 17.76  | 20773694  | 0.07642 | ng      |
| 29) C14(52) #2                     | 19.15  | 12811839  | 0.08042 | ng      |
| 30) C14(44) #2                     | 19.97  | 23146107m | 0.08380 | ng      |
| 31) C14(66) #2                     | 22.36  | 24580110m | 0.07998 | ng      |
| 32) C15(101) #2                    | 23.24  | 15108154m | 0.08569 | ng      |
| 35) C15(118) #2                    | 26.35  | 23117566m | 0.08142 | ng      |
| 36) C16(153) #2                    | 26.94  | 23189650  | 0.07722 | ng      |
| 37) C15(105) #2                    | 27.20  | 33215210  | 0.07988 | ng      |
| 38) C16(138) #2                    | 27.79  | 22313052m | 0.07797 | ng      |
| 39) C17(187) #2                    | 28.14  | 25141835  | 0.08124 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7410.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0420\M7410.D\ECD2B.CH  
 Acq On : 11-1-2014 08:56:13 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:11 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 35059124m | 0.08019 | ng    |
| 41) | C17(180) #2  | 29.59 | 31903517m | 0.08126 | ng    |
| 42) | C17(170) #2  | 30.22 | 34904242m | 0.08136 | ng    |
| 43) | C18(195) #2  | 31.09 | 32500865m | 0.08234 | ng    |
| 44) | C19(206) #2  | 32.18 | 29391729m | 0.08254 | ng    |
| 45) | C110(209) #2 | 32.62 | 22716057m | 0.08241 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7421.D\ECD1A.CH Vial: 58  
 Signal #2 : I:\M\DATA\SM0420\M7421.D\ECD2B.CH  
 Acq On : 11-2-2014 05:07:15 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:27:18 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:27:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc    | Units   |
|------------------------------------|---------|-----------|---------|---------|
| <b>Internal Standards</b>          |         |           |         |         |
| 1) I C15(96)                       | 17.40   | 3669074m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22   | 8207625m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52   | 19000429m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79   | 45785145m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |         |           |         |         |
| 4) s C13(34)                       | 13.40   | 1505494   | 0.04052 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 101.30% |
| 11) s C16(152)                     | 20.48   | 1991260m  | 0.04148 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 103.29% |
| 27) s C13(34) #2                   | 16.48   | 7837250m  | 0.03889 | ng      |
| Spiked Amount                      | 0.0400  | Recovery  | =       | 97.23%  |
| 34) s C16(152) #2                  | 23.58   | 9739347m  | 0.04235 | ng      |
| Spiked Amount                      | 0.0402  | Recovery  | =       | 105.45% |
| <b>Target Compounds</b>            |         |           |         |         |
| 2) C12(8)                          | 10.21   | 890186    | 0.03911 | ng      |
| 3) C13(18)                         | 12.13   | 1132818   | 0.03986 | ng      |
| 5) C13(28)                         | 14.21   | 2080759   | 0.04182 | ng      |
| 6) C14(52)                         | 15.84   | 1563787   | 0.04104 | ng      |
| 7) C14(44)                         | 16.70   | 2054635m  | 0.04095 | ng      |
| 8) C14(66)                         | 18.60   | 2328894   | 0.04106 | ng      |
| 9) C15(101)                        | 19.74   | 2237954m  | 0.03994 | ng      |
| 12) C15(118)                       | 22.40   | 2527414   | 0.04209 | ng      |
| 13) C16(153)                       | 23.45 T | 2386755m  | 0.04183 | ng      |
| 14) C15(105)                       | 23.45 T | 2891083m  | 0.03918 | ng      |
| 15) C16(138)                       | 24.54   | 2902965m  | 0.03940 | ng      |
| 16) C17(187)                       | 25.29   | 2573084m  | 0.04000 | ng      |
| 17) C16(128)                       | 25.64   | 2732077m  | 0.03840 | ng      |
| 18) C17(180)                       | 27.16   | 2990717m  | 0.03949 | ng      |
| 19) C17(170)                       | 27.96   | 3371265m  | 0.03935 | ng      |
| 20) C18(195)                       | 29.04   | 3218465m  | 0.04010 | ng      |
| 21) C19(206)                       | 30.31   | 3068544m  | 0.03966 | ng      |
| 22) C110(209)                      | 30.90   | 2491710m  | 0.03942 | ng      |
| 25) C12(8) #2                      | 13.11   | 4981931m  | 0.03912 | ng      |
| 26) C13(18) #2                     | 15.00   | 5771136m  | 0.03872 | ng      |
| 28) C13(28) #2                     | 17.77   | 10513925m | 0.03834 | ng      |
| 29) C14(52) #2                     | 19.14   | 6479397m  | 0.03970 | ng      |
| 30) C14(44) #2                     | 19.97   | 10319358m | 0.03666 | ng      |
| 31) C14(66) #2                     | 22.36   | 12430409m | 0.04022 | ng      |
| 32) C15(101) #2                    | 23.25   | 6643374m  | 0.03785 | ng      |
| 35) C15(118) #2                    | 26.35   | 10784470m | 0.03650 | ng      |
| 36) C16(153) #2                    | 26.94   | 11285353m | 0.03632 | ng      |
| 37) C15(105) #2                    | 27.21   | 16190275m | 0.03915 | ng      |
| 38) C16(138) #2                    | 27.78   | 11975725m | 0.04293 | ng      |
| 39) C17(187) #2                    | 28.14   | 12631230m | 0.04061 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7421.D\ECD1A.CH Vial: 58  
 Signal #2 : I:\M\DATA\SM0420\M7421.D\ECD2B.CH  
 Acq On : 11-2-2014 05:07:15 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:27:18 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:27:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 17583522m | 0.04039 | ng    |
| 41) | C17(180) #2  | 29.59 | 16115707m | 0.04147 | ng    |
| 42) | C17(170) #2  | 30.22 | 17905627m | 0.04235 | ng    |
| 43) | C18(195) #2  | 31.09 | 16688883m | 0.04308 | ng    |
| 44) | C19(206) #2  | 32.18 | 15557100m | 0.04457 | ng    |
| 45) | C110(209) #2 | 32.62 | 12159243m | 0.04469 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7432.D\ECD1A.CH Vial: 69  
 Signal #2 : I:\M\DATA\SM0420\M7432.D\ECD2B.CH  
 Acq On : 11-2-2014 01:20:36 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:28:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:28:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units  |
|------------------------------------|----------|-----------|---------|--------|
| <b>Internal Standards</b>          |          |           |         |        |
| 1) I C15(96)                       | 17.40    | 3835624m  | 0.10000 | ng     |
| 10) I C16(161)                     | 23.22    | 8717281   | 0.10000 | ng     |
| 24) I C15(96) #2                   | 20.52    | 19368007m | 0.10000 | ng     |
| 33) I C16(161) #2                  | 26.80    | 44531650  | 0.10000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |         |        |
| 4) s C13(34)                       | 13.40    | 2760506   | 0.07709 | ng     |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 96.36% |
| 11) s C16(152)                     | 20.48    | 3809735   | 0.07879 | ng     |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 98.10% |
| 27) s C13(34) #2                   | 16.48    | 14018395m | 0.07284 | ng     |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 91.05% |
| 34) s C16(152) #2                  | 23.58    | 17352793m | 0.07971 | ng     |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 99.24% |
| <b>Target Compounds</b>            |          |           |         |        |
| 2) C12(8)                          | 10.21    | 1620606   | 0.07370 | ng     |
| 3) C13(18)                         | 12.13    | 2059003   | 0.07586 | ng     |
| 5) C13(28)                         | 14.21    | 3888454   | 0.07902 | ng     |
| 6) C14(52)                         | 15.84    | 2800902   | 0.07724 | ng     |
| 7) C14(44)                         | 16.70    | 3817388m  | 0.07754 | ng     |
| 8) C14(66)                         | 18.61    | 4297122m  | 0.07669 | ng     |
| 9) C15(101)                        | 19.74    | 4357387m  | 0.07770 | ng     |
| 12) C15(118)                       | 22.40    | 4477628m  | 0.07357 | ng     |
| 13) C16(153)                       | 23.45 TW | 4446169m  | 0.07530 | ng     |
| 14) C15(105)                       | 23.46 TW | 5741085m  | 0.07793 | ng     |
| 15) C16(138)                       | 24.55    | 5738525   | 0.07653 | ng     |
| 16) C17(187)                       | 25.29    | 5088337   | 0.07773 | ng     |
| 17) C16(128)                       | 25.64    | 5776017m  | 0.07872 | ng     |
| 18) C17(180)                       | 27.16    | 5940897m  | 0.07626 | ng     |
| 19) C17(170)                       | 27.97    | 6743203m  | 0.07629 | ng     |
| 20) C18(195)                       | 29.04    | 6484310m  | 0.07812 | ng     |
| 21) C19(206)                       | 30.31    | 6188660m  | 0.07721 | ng     |
| 22) C110(209)                      | 30.90    | 5012352m  | 0.07702 | ng     |
| 25) C12(8) #2                      | 13.11    | 8753460m  | 0.07130 | ng     |
| 26) C13(18) #2                     | 15.00    | 10474266m | 0.07551 | ng     |
| 28) C13(28) #2                     | 17.77    | 19055759m | 0.07130 | ng     |
| 29) C14(52) #2                     | 19.15    | 11029352m | 0.06982 | ng     |
| 30) C14(44) #2                     | 19.97    | 21684166m | 0.07996 | ng     |
| 31) C14(66) #2                     | 22.36    | 23105401m | 0.07663 | ng     |
| 32) C15(101) #2                    | 23.24    | 15120085m | 0.08769 | ng     |
| 35) C15(118) #2                    | 26.36    | 20687064m | 0.07601 | ng     |
| 36) C16(153) #2                    | 26.94    | 20683854m | 0.07189 | ng     |
| 37) C15(105) #2                    | 27.21    | 30380647m | 0.07651 | ng     |
| 38) C16(138) #2                    | 27.79    | 22196306m | 0.08114 | ng     |
| 39) C17(187) #2                    | 28.14    | 23738687  | 0.08032 | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7432.D\ECD1A.CH Vial: 69  
 Signal #2 : I:\M\DATA\SM0420\M7432.D\ECD2B.CH  
 Acq On : 11-2-2014 01:20:36 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:28:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:28:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.55 | 32740061m | 0.07841 | ng    |
| 41) | C17(180) #2  | 29.59 | 30071977m | 0.08022 | ng    |
| 42) | C17(170) #2  | 30.22 | 32986911  | 0.08053 | ng    |
| 43) | C18(195) #2  | 31.09 | 30668487m | 0.08138 | ng    |
| 44) | C19(206) #2  | 32.18 | 27775122m | 0.08169 | ng    |
| 45) | C110(209) #2 | 32.63 | 21492991m | 0.08166 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2038180   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 12872032m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 102746m   | 0.00162 | ng    |
| 5) C15(101) #2     | 23.23 | 516701m   | 0.00035 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7205.D MM0417F.M Fri Dec 05 16:10:49 2014

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc    | Units |
|--------------------|-------|----------|---------|-------|
| Internal Standards |       |          |         |       |
| 1) I C15(96)       | 17.39 | 2103011  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13386960 | 0.10000 | ng    |
| Target Compounds   |       |          |         |       |
| 2) C15(101)        | 19.73 | 341674m  | 0.00915 | ng    |
| 5) C15(101) #2     | 23.22 | 3258192m | 0.02515 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7207.D MM0417F.M Fri Dec 05 16:10:55 2014

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2225995   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13612237m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 753837m   | 0.02114 | ng    |
| 5) C15(101) #2     | 23.22 | 5441576m  | 0.04378 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7208.D MM0417F.M Fri Dec 05 16:10:57 2014

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:46 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2400478   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14869473m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1636592m  | 0.04499 | ng    |
| 5) C15(101) #2     | 23.21 | 11842524m | 0.08946 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7209.D MM0417F.M Fri Dec 05 16:10:58 2014

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2523572   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15494530m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2973113m  | 0.08080 | ng    |
| 5) C15(101) #2     | 23.21 | 25660002m | 0.18179 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7210.D MM0417F.M Fri Dec 05 16:11:00 2014

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.    | Response  | Conc    | Units |
|--------------------|---------|-----------|---------|-------|
| Internal Standards |         |           |         |       |
| 1) I C15(96)       | 17.39   | 2539311m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51   | 15194166m | 0.10000 | ng    |
| Target Compounds   |         |           |         |       |
| 2) C15(101)        | 19.74   | 11042195m | 0.36809 | ng    |
| 5) C15(101) #2     | 23.22 e | 68456197m | 0.44286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7212.D MM0417F.M Fri Dec 05 16:11:01 2014



Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:24:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:22:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |      |
|--------------------|-------|-----------|---------|-------|------|
| Internal Standards |       |           |         |       |      |
| 1) I C15(96)       | 17.39 | 2508888   | 0.10000 | ng    |      |
| 4) I C15(96) #2    | 20.51 | 13936712m | 0.10000 | ng    |      |
| Target Compounds   |       |           |         |       |      |
| 2) C15(101)        | 19.73 | 1516710m  | 0.03859 | ng    | -3.5 |
| 5) C15(101) #2     | 23.21 | 11320633m | 0.03850 | ng    | -3.8 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7213.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0420\M7366.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0420\M7366.D\ECD2B.CH  
 Acq On : 31 Oct 2014 12:18 pm Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:00:06 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:00:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2882190   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15017810m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 3452418m  | 0.07937 | ng    |
| 5) C15(101) #2     | 23.21 | 23647973m | 0.07734 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7366.D MM0417F.M Mon Dec 08 07:53:43 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7377.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0420\M7377.D\ECD2B.CH  
 Acq On : 10-31-2014 08:28:21 PM Operator: RR  
 Sample : IE07mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:04 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3346131   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16778147m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 2045000m  | 0.03903 | ng    |
| 5) C15(101) #2     | 23.22 | 13405374m | 0.03786 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7377.D MM0417F.M Mon Dec 08 07:53:58 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7388.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0420\M7388.D\ECD2B.CH  
 Acq On : 11-1-2014 04:37:35 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:39 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3657950   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16699975m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4082482m  | 0.07367 | ng    |
| 5) C15(101) #2     | 23.22 | 25232042m | 0.07392 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7388.D MM0417F.M Mon Dec 08 07:54:11 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7399.D\ECD1A.CH Vial: 36  
 Signal #2 : I:\M\DATA\SM0420\M7399.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:47 pm Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:14 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3678142   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17779911m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 2219811m  | 0.03852 | ng    |
| 5) C15(101) #2     | 23.21 | 15420222m | 0.04117 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7399.D MM0417F.M Mon Dec 08 07:54:23 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7410.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0420\M7410.D\ECD2B.CH  
 Acq On : 11-1-2014 08:56:13 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:48 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 4018721   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 19449225m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4442628m  | 0.07294 | ng    |
| 5) C15(101) #2     | 23.22 | 29669883m | 0.07470 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7410.D MM0417F.M Mon Dec 08 07:54:30 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7421.D\ECD1A.CH Vial: 58  
 Signal #2 : I:\M\DATA\SM0420\M7421.D\ECD2B.CH  
 Acq On : 11-2-2014 05:07:15 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:41:10 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:41:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3777758   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18738277m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2216049m  | 0.03737 | ng    |
| 5) C15(101) #2     | 23.22 | 14810823m | 0.03744 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7421.D MM0417F.M Mon Dec 08 07:54:42 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7367.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0420\M7367.D\ECD2B.CH  
 Acq On : 10-31-2014 01:03:20 PM Operator: RR  
 Sample : CD582PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound | R.T. | Response | Conc | Units |
|----------|------|----------|------|-------|
|----------|------|----------|------|-------|

Internal Standards

|       |             |       |           |              |
|-------|-------------|-------|-----------|--------------|
| 1) I  | C15(96)     | 17.39 | 3044845   | 100.00000 ng |
| 10) I | C16(161)    | 23.21 | 5449036   | 100.00000 ng |
| 24) I | C15(96) #2  | 20.51 | 14993632m | 100.00000 ng |
| 33) I | C16(161) #2 | 26.79 | 30888653  | 100.00000 ng |

System Monitoring Compounds

|               |             |          |           |              |
|---------------|-------------|----------|-----------|--------------|
| 4) s          | C13(34)     | 13.39    | 6908097   | 312.84882 ng |
| Spiked Amount |             | 400.0000 | Recovery  | = 78.21%     |
| 11) s         | C16(152)    | 20.48    | 9400224   | 368.53273 ng |
| Spiked Amount |             | 401.6000 | Recovery  | = 91.77%     |
| 27) s         | C13(34) #2  | 16.47    | 41048553m | 353.15045 ng |
| Spiked Amount |             | 400.0000 | Recovery  | = 88.29%     |
| 34) s         | C16(152) #2 | 23.62    | 53534968m | 323.10625 ng |
| Spiked Amount |             | 401.6000 | Recovery  | = 80.45%     |

Target Compounds

|     |             |      |    |      |    |
|-----|-------------|------|----|------|----|
| 2)  | C12(8)      | 0.00 | 0d | N.D. | ng |
| 3)  | C13(18)     | 0.00 | 0d | N.D. | ng |
| 5)  | C13(28)     | 0.00 | 0d | N.D. | ng |
| 6)  | C14(52)     | 0.00 | 0d | N.D. | ng |
| 7)  | C14(44)     | 0.00 | 0d | N.D. | ng |
| 8)  | C14(66)     | 0.00 | 0d | N.D. | ng |
| 9)  | C15(101)    | 0.00 | 0d | N.D. | ng |
| 12) | C15(118)    | 0.00 | 0d | N.D. | ng |
| 13) | C16(153)    | 0.00 | 0d | N.D. | ng |
| 14) | C15(105)    | 0.00 | 0d | N.D. | ng |
| 15) | C16(138)    | 0.00 | 0d | N.D. | ng |
| 16) | C17(187)    | 0.00 | 0d | N.D. | ng |
| 17) | C16(128)    | 0.00 | 0d | N.D. | ng |
| 18) | C17(180)    | 0.00 | 0d | N.D. | ng |
| 19) | C17(170)    | 0.00 | 0d | N.D. | ng |
| 20) | C18(195)    | 0.00 | 0d | N.D. | ng |
| 21) | C19(206)    | 0.00 | 0d | N.D. | ng |
| 22) | C110(209)   | 0.00 | 0d | N.D. | ng |
| 25) | C12(8) #2   | 0.00 | 0d | N.D. | ng |
| 26) | C13(18) #2  | 0.00 | 0d | N.D. | ng |
| 28) | C13(28) #2  | 0.00 | 0d | N.D. | ng |
| 29) | C14(52) #2  | 0.00 | 0d | N.D. | ng |
| 30) | C14(44) #2  | 0.00 | 0d | N.D. | ng |
| 31) | C14(66) #2  | 0.00 | 0d | N.D. | ng |
| 32) | C15(101) #2 | 0.00 | 0d | N.D. | ng |
| 35) | C15(118) #2 | 0.00 | 0d | N.D. | ng |
| 36) | C16(153) #2 | 0.00 | 0d | N.D. | ng |
| 37) | C15(105) #2 | 0.00 | 0d | N.D. | ng |
| 38) | C16(138) #2 | 0.00 | 0d | N.D. | ng |
| 39) | C17(187) #2 | 0.00 | 0d | N.D. | ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7367.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0420\M7367.D\ECD2B.CH  
 Acq On : 10-31-2014 01:03:20 PM Operator: RR  
 Sample : CD582PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7368.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0420\M7368.D\ECD2B.CH  
 Acq On : 10-31-2014 01:47:51 PM Operator: RR  
 Sample : CD583LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:14 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |     |
|-----------------------------|----------|-----------|-----------|--------|-----|
| Internal Standards          |          |           |           |        |     |
| 1) I C15(96)                | 17.38    | 3329406m  | 100.00000 | ng     |     |
| 10) I C16(161)              | 23.21    | 5532874m  | 100.00000 | ng     |     |
| 24) I C15(96) #2            | 20.51    | 15833236m | 100.00000 | ng     |     |
| 33) I C16(161) #2           | 26.79    | 33282462m | 100.00000 | ng     |     |
| System Monitoring Compounds |          |           |           |        |     |
| 4) s C13(34)                | 13.40    | 6897243m  | 274.91606 | ng     | 69% |
| Spiked Amount               | 400.0000 | Recovery  | =         | 68.73% |     |
| 11) s C16(152)              | 20.48    | 9563288m  | 369.41741 | ng     | 92% |
| Spiked Amount               | 401.6000 | Recovery  | =         | 91.99% |     |
| 27) s C13(34) #2            | 16.48    | 42516378m | 343.56676 | ng     | 86% |
| Spiked Amount               | 400.0000 | Recovery  | =         | 85.89% |     |
| 34) s C16(152) #2           | 23.62    | 65737506m | 361.47781 | ng     | 90% |
| Spiked Amount               | 401.6000 | Recovery  | =         | 90.01% |     |
| Target Compounds            |          |           |           |        |     |
| 2) C12(8)                   | 10.21    | 624152    | 28.97281  | ng     | 77% |
| 3) C13(18)                  | 12.12    | 835065m   | 31.13448  | ng     | 83% |
| 5) C13(28)                  | 14.20    | 1254411m  | 26.62375  | ng     | 71% |
| 6) C14(52)                  | 15.83    | 984787m   | 26.17975  | ng     | 70% |
| 7) C14(44)                  | 16.70    | 1197174m  | 24.80818  | ng     | 66% |
| 8) C14(66)                  | 18.60    | 1437241m  | 26.72821  | ng     | 71% |
| 9) C15(101)                 | 19.74    | 1442974m  | 27.65883  | ng     | 74% |
| 12) C15(118)                | 22.39    | 1506856m  | 36.76114  | ng     | 98% |
| 13) C16(153)                | 23.44 TW | 1181922m  | 30.28711  | ng     | 81% |
| 14) C15(105)                | 23.45 TW | 1367691m  | 26.45515  | ng     | 71% |
| 15) C16(138)                | 24.54    | 1778751m  | 35.53416  | ng     | 95% |
| 16) C17(187)                | 25.29    | 1521996m  | 34.71933  | ng     | 93% |
| 17) C16(128)                | 25.63    | 1522055m  | 31.50985  | ng     | 84% |
| 18) C17(180)                | 27.16    | 1774362m  | 34.47196  | ng     | 92% |
| 19) C17(170)                | 27.96    | 1976709m  | 33.95807  | ng     | 91% |
| 20) C18(195)                | 29.04    | 1917386m  | 35.21437  | ng     | 94% |
| 21) C19(206)                | 30.31    | 1807712m  | 34.44542  | ng     | 92% |
| 22) C110(209)               | 30.90    | 1571864m  | 36.74974  | ng     | 98% |
| 25) C12(8) #2               | 13.10    | 3363027m  | 30.96055  | ng     | 83% |
| 26) C13(18) #2              | 14.99    | 3964020m  | 30.74920  | ng     | 82% |
| 28) C13(28) #2              | 17.76    | 7010198m  | 30.09676  | ng     | 80% |
| 29) C14(52) #2              | 19.15    | 4289253m  | 30.75831  | ng     | 82% |
| 30) C14(44) #2              | 19.96    | 7680605m  | 32.45475  | ng     | 87% |
| 31) C14(66) #2              | 22.36    | 8424428m  | 32.17591  | ng     | 86% |
| 32) C15(101) #2             | 23.24    | 4653690m  | 31.21199  | ng     | 83% |
| 35) C15(118) #2             | 26.35    | 7077359m  | 32.57436  | ng     | 87% |
| 36) C16(153) #2             | 26.93    | 7522837m  | 32.97025  | ng     | 88% |
| 37) C15(105) #2             | 27.20    | 10472903m | 34.66252  | ng     | 92% |
| 38) C16(138) #2             | 27.78    | 7557152m  | 37.24038  | ng     | 99% |
| 39) C17(187) #2             | 28.14    | 8099669m  | 35.53530  | ng     | 95% |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7368.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0420\M7368.D\ECD2B.CH  
 Acq On : 10-31-2014 01:47:51 PM Operator: RR  
 Sample : CD583LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:14 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |     |
|-----|--------------|-------|-----------|----------|-------|-----|
| 40) | C16(128) #2  | 28.54 | 11223273m | 35.25865 | ng    | 94% |
| 41) | C17(180) #2  | 29.59 | 9827999m  | 34.56202 | ng    | 92% |
| 42) | C17(170) #2  | 30.21 | 10567251m | 34.19286 | ng    | 91% |
| 43) | C18(195) #2  | 31.08 | 9737360m  | 34.41872 | ng    | 92% |
| 44) | C19(206) #2  | 32.18 | 8696491m  | 34.12442 | ng    | 91% |
| 45) | C110(209) #2 | 32.62 | 7217329m  | 36.28705 | ng    | 97% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7369.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0420\M7369.D\ECD2B.CH  
 Acq On : 10-31-2014 02:32:30 PM Operator: RR  
 Sample : M8156-P(2) Inst : INST. M  
 Misc : NBH14-0017 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:18 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.39    | 2970953m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.20    | 5526953m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 13601396m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.79    | 25848095m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 7313424m    | 336.63507  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 88.62%  |
| 11) s C16(152)                     | 20.48    | 8889518     | 321.22166  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 84.22%  |
| 27) s C13(34) #2                   | 16.48    | 41767601m   | 398.86773  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 105.00% |
| 34) s C16(152) #2                  | 23.63    | 45756488    | 312.61319  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 81.97%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 4775106   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 10928479  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 79263244  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 38995442  | BelowCal   | ng      |
| 7) C14(44)                         | 16.70    | E 18900239  | BelowCal   | ng      |
| 8) C14(66)                         | 18.64    | E 38859339  | BelowCal   | ng      |
| 9) C15(101)                        | 19.72    | E 26764880  | BelowCal   | ng      |
| 12) C15(118)                       | 22.39    | E 28853991  | BelowCal   | ng      |
| 13) C16(153)                       | 23.43    | E 35990056  | BelowCal   | ng      |
| 14) C15(105)                       | 23.46    | 7166271m    | 160.30800  | ng      |
| 15) C16(138)                       | 24.53    | e 26847284  | 754.63981  | ng      |
| 16) C17(187)                       | 25.29    | 4133354m    | 96.15802   | ng      |
| 17) C16(128)                       | 25.63    | 4982175m    | 103.59054  | ng      |
| 18) C17(180)                       | 27.16    | 5760538m    | 112.94458  | ng      |
| 19) C17(170)                       | 27.97    | 4434921m    | 75.29021   | ng      |
| 20) C18(195)                       | 29.04    | 757609m     | 12.24493   | ng      |
| 21) C19(206)                       | 30.31    | 924552m     | 16.04716   | ng      |
| 22) C110(209)                      | 30.90    | 273514m     | 4.76446    | ng      |
| 25) C12(8) #2                      | 13.11    | e 24827096  | 401.81861  | ng      |
| 26) C13(18) #2                     | 15.00    | E 59014643  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.76    | E 265466633 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 213362171 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | e 101061279 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.35    | E 160466174 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 170986580 | 945.34679  | ng      |
| 35) C15(118) #2                    | 26.34    | E 150712173 | 1094.22536 | ng      |
| 36) C16(153) #2                    | 26.94    | E 127905945 | 719.09579  | ng      |
| 37) C15(105) #2                    | 27.20    | 37256883    | 151.77885  | ng      |
| 38) C16(138) #2                    | 27.78    | e 68801193  | 360.57273  | ng      |
| 39) C17(187) #2                    | 28.14    | 22293850m   | 123.59237  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7369.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0420\M7369.D\ECD2B.CH  
 Acq On : 10-31-2014 02:32:30 PM Operator: RR  
 Sample : M8156-P(2) Inst : INST. M  
 Misc : NBH14-0017 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:18 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 28533018m | 111.57116 | ng    |
| 41) | C17(180) #2  | 29.59 | 28754419m | 124.48126 | ng    |
| 42) | C17(170) #2  | 30.22 | 20690948m | 82.60438  | ng    |
| 43) | C18(195) #2  | 31.08 | 3531211m  | 14.67406  | ng    |
| 44) | C19(206) #2  | 32.18 | 3725392m  | 17.47086  | ng    |
| 45) | C110(209) #2 | 32.62 | 1116252m  | 5.73331   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7370.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0420\M7370.D\ECD2B.CH  
 Acq On : 10-31-2014 03:17:03 PM Operator: RR  
 Sample : M8158-P(2) Inst : INST. M  
 Misc : NBH14-0025 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units  |
|------------------------------------|----------|------------|-----------|--------|
| <b>Internal Standards</b>          |          |            |           |        |
| 1) I C15(96)                       | 17.39    | 3457950    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7336190m   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14417732m  | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 30068118m  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |            |           |        |
| 4) s C13(34)                       | 13.40    | 7814181    | 295.47590 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 77.78% |
| 11) s C16(152)                     | 20.48    | 10114611   | 267.25612 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 70.07% |
| 27) s C13(34) #2                   | 16.48    | 42139288m  | 369.36173 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 97.23% |
| 34) s C16(152) #2                  | 23.62    | 52271417   | 307.75878 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 80.69% |
| <b>Target Compounds</b>            |          |            |           |        |
| 2) C12(8)                          | 10.21    | 1326818    | 62.72209  | ng     |
| 3) C13(18)                         | 12.13    | 3020420m   | 128.35464 | ng     |
| 5) C13(28)                         | 14.19    | e 18437473 | BelowCal  | ng     |
| 6) C14(52)                         | 15.83    | e 9545495  | 435.70373 | ng     |
| 7) C14(44)                         | 16.70    | 5115438    | 115.05776 | ng     |
| 8) C14(66)                         | 18.62    | 5298685m   | 103.21315 | ng     |
| 9) C15(101)                        | 19.72    | 7819979    | 157.10293 | ng     |
| 12) C15(118)                       | 22.39    | 9760115m   | 201.36430 | ng     |
| 13) C16(153)                       | 23.43    | 10108873m  | 208.48845 | ng     |
| 14) C15(105)                       | 23.45    | 4011674m   | 60.31992  | ng     |
| 15) C16(138)                       | 24.53    | 10608312m  | 168.99785 | ng     |
| 16) C17(187)                       | 25.29    | 1406808    | 22.17936  | ng     |
| 17) C16(128)                       | 25.63    | 2675180    | 40.10732  | ng     |
| 18) C17(180)                       | 27.16    | 2141328m   | 29.61188  | ng     |
| 19) C17(170)                       | 27.96    | 1561109m   | 18.48507  | ng     |
| 20) C18(195)                       | 29.04    | 282972m    | 2.33677   | ng     |
| 21) C19(206)                       | 30.30    | 298560m    | 2.89961   | ng     |
| 22) C110(209)                      | 0.00     | 0d         | N.D.      | ng     |
| 25) C12(8) #2                      | 13.10    | 6074493m   | 62.68279  | ng     |
| 26) C13(18) #2                     | 14.99    | 13778990m  | 139.12494 | ng     |
| 28) C13(28) #2                     | 17.76    | e 58277211 | 354.55892 | ng     |
| 29) C14(52) #2                     | 19.15    | e 52056640 | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 26474828m  | 131.24261 | ng     |
| 31) C14(66) #2                     | 22.35    | 24173813m  | 105.17525 | ng     |
| 32) C15(101) #2                    | 23.23    | 22502863m  | 163.35384 | ng     |
| 35) C15(118) #2                    | 26.33    | 49011951m  | 269.31978 | ng     |
| 36) C16(153) #2                    | 26.94    | 39216554   | 196.40482 | ng     |
| 37) C15(105) #2                    | 27.20    | 19242870   | 68.16897  | ng     |
| 38) C16(138) #2                    | 27.78    | 34292740   | 169.19954 | ng     |
| 39) C17(187) #2                    | 28.14    | 6700811    | 30.71164  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7370.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0420\M7370.D\ECD2B.CH  
 Acq On : 10-31-2014 03:17:03 PM Operator: RR  
 Sample : M8158-P(2) Inst : INST. M  
 Misc : NBH14-0025 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 13104413m | 43.75182 | ng    |
| 41) | C17(180) #2  | 29.59 | 9693411m  | 35.97233 | ng    |
| 42) | C17(170) #2  | 30.21 | 6713849m  | 22.48941 | ng    |
| 43) | C18(195) #2  | 31.08 | 1142632m  | 3.13509  | ng    |
| 44) | C19(206) #2  | 32.18 | 967367m   | 3.02553  | ng    |
| 45) | C110(209) #2 | 0.00  | 0d        | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7371.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0420\M7371.D\ECD2B.CH  
 Acq On : 10-31-2014 04:01:30 PM Operator: RR  
 Sample : M8163-P(2) Inst : INST. M  
 Misc : NBH14-0045 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3262719m    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 8389753m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14729978    | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 27890994m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 8624358m    | 379.27479 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 99.84% |
| 11) s C16(152)                     | 20.48    | 9971414m    | 225.03628 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 59.00% |
| 27) s C13(34) #2                   | 16.48    | 43515502m   | 375.43413 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 98.83% |
| 34) s C16(152) #2                  | 23.63    | 47211441m   | 300.73423 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 78.85% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 3409985     | 210.36994 | ng     |
| 3) C13(18)                         | 12.13    | e 8787081   | BelowCal  | ng     |
| 5) C13(28)                         | 14.20    | E 58732918  | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | E 27926162  | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | e 13552971  | 486.22074 | ng     |
| 8) C14(66)                         | 18.64    | E 25444697  | BelowCal  | ng     |
| 9) C15(101)                        | 19.72    | e 16759314  | 447.98898 | ng     |
| 12) C15(118)                       | 22.40    | e 17807868  | 359.37002 | ng     |
| 13) C16(153)                       | 23.43    | e 21599514  | 442.81315 | ng     |
| 14) C15(105)                       | 23.46    | 5371135m    | 71.75543  | ng     |
| 15) C16(138)                       | 24.53    | e 15820328  | 226.47213 | ng     |
| 16) C17(187)                       | 25.30    | 2647651     | 38.26892  | ng     |
| 17) C16(128)                       | 25.63    | 3244148     | 42.62618  | ng     |
| 18) C17(180)                       | 27.16    | 3403448m    | 42.02778  | ng     |
| 19) C17(170)                       | 27.97    | 2602509m    | 27.76255  | ng     |
| 20) C18(195)                       | 29.04    | 501418      | 4.46507   | ng     |
| 21) C19(206)                       | 30.31    | 564529m     | 5.65481   | ng     |
| 22) C110(209)                      | 30.90    | 222778m     | 1.84957   | ng     |
| 25) C12(8) #2                      | 13.10    | 15373651m   | 177.30561 | ng     |
| 26) C13(18) #2                     | 14.99    | e 43540135  | BelowCal  | ng     |
| 28) C13(28) #2                     | 17.76    | E 171034014 | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | E 139057862 | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | e 64322249  | 399.56239 | ng     |
| 31) C14(66) #2                     | 22.35    | e 94739838  | 571.43757 | ng     |
| 32) C15(101) #2                    | 23.23    | E 98774275  | 583.06415 | ng     |
| 35) C15(118) #2                    | 26.34    | e 84198115  | 519.37951 | ng     |
| 36) C16(153) #2                    | 26.94    | e 70688787  | 378.55635 | ng     |
| 37) C15(105) #2                    | 27.20    | 20219694m   | 77.24473  | ng     |
| 38) C16(138) #2                    | 27.78    | 37238554    | 195.57702 | ng     |
| 39) C17(187) #2                    | 28.14    | 12306101m   | 62.91355  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7371.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0420\M7371.D\ECD2B.CH  
 Acq On : 10-31-2014 04:01:30 PM Operator: RR  
 Sample : M8163-P(2) Inst : INST. M  
 Misc : NBH14-0045 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 15440238m | 55.91476 | ng    |
| 41) | C17(180) #2  | 29.59 | 15429554m | 62.42192 | ng    |
| 42) | C17(170) #2  | 30.22 | 10745834m | 39.62760 | ng    |
| 43) | C18(195) #2  | 31.08 | 1984254m  | 7.02567  | ng    |
| 44) | C19(206) #2  | 32.18 | 1932487m  | 7.83240  | ng    |
| 45) | C110(209) #2 | 32.62 | 647256m   | 2.39676  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7372.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0420\M7372.D\ECD2B.CH  
 Acq On : 10-31-2014 04:45:59 PM Operator: RR  
 Sample : M8164-P(2) Inst : INST. M  
 Misc : NBH14-0049 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:30 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units  |
|------------------------------------|----------|-------------|------------|--------|
| <b>Internal Standards</b>          |          |             |            |        |
| 1) I C15(96)                       | 17.39    | 3135901m    | 95.00000   | ng     |
| 10) I C16(161)                     | 23.21    | 4581626m    | 95.00000   | ng     |
| 24) I C15(96) #2                   | 20.52    | 12791436m   | 95.00000   | ng     |
| 33) I C16(161) #2                  | 26.79    | 23663248m   | 95.00000   | ng     |
| <b>System Monitoring Compounds</b> |          |             |            |        |
| 4) s C13(34)                       | 13.40    | 7299638m    | 308.75825  | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 81.28% |
| 11) s C16(152)                     | 20.48    | 7484310     | 327.35704  | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 85.83% |
| 27) s C13(34) #2                   | 16.48    | 35168305m   | 337.53873  | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 88.86% |
| 34) s C16(152) #2                  | 23.63    | 35119726    | 268.07402  | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 70.29% |
| <b>Target Compounds</b>            |          |             |            |        |
| 2) C12(8)                          | 10.21    | E 8572916   | BelowCal   | ng     |
| 3) C13(18)                         | 12.13    | E 21506147  | BelowCal   | ng     |
| 5) C13(28)                         | 14.20    | E 155575721 | BelowCal   | ng     |
| 6) C14(52)                         | 15.84    | E 71563953  | BelowCal   | ng     |
| 7) C14(44)                         | 16.70    | E 36750821  | BelowCal   | ng     |
| 8) C14(66)                         | 18.63    | E 36445820m | BelowCal   | ng     |
| 9) C15(101)                        | 19.72    | E 44990134  | BelowCal   | ng     |
| 12) C15(118)                       | 22.40    | E 46958289  | BelowCal   | ng     |
| 13) C16(153)                       | 23.43    | E 58900536  | BelowCal   | ng     |
| 14) C15(105)                       | 23.48    | 7537017m    | 215.33387  | ng     |
| 15) C16(138)                       | 24.54    | E 43846769  | BelowCal   | ng     |
| 16) C17(187)                       | 25.30    | 6700789m    | 198.66270  | ng     |
| 17) C16(128)                       | 25.63    | 7650585m    | 203.62147  | ng     |
| 18) C17(180)                       | 27.16    | 10010740    | 247.14405  | ng     |
| 19) C17(170)                       | 27.97    | 7520285m    | 158.96402  | ng     |
| 20) C18(195)                       | 29.04    | 1333031     | 27.80628   | ng     |
| 21) C19(206)                       | 30.31    | 1310845m    | 28.46306   | ng     |
| 22) C110(209)                      | 30.91    | 383860m     | 9.13392    | ng     |
| 25) C12(8) #2                      | 13.10    | e 40641344  | BelowCal   | ng     |
| 26) C13(18) #2                     | 14.99    | E 98478262  | BelowCal   | ng     |
| 28) C13(28) #2                     | 17.76    | E 414139412 | BelowCal   | ng     |
| 29) C14(52) #2                     | 19.15    | E 325957116 | BelowCal   | ng     |
| 30) C14(44) #2                     | 19.96    | E 169949371 | BelowCal   | ng     |
| 31) C14(66) #2                     | 22.35    | E 238164905 | BelowCal   | ng     |
| 32) C15(101) #2                    | 23.23    | E 251283629 | 1302.44211 | ng     |
| 35) C15(118) #2                    | 26.34    | E 213776704 | 1950.15020 | ng     |
| 36) C16(153) #2                    | 26.94    | E 185748669 | 1103.24554 | ng     |
| 37) C15(105) #2                    | 27.21    | 50034722    | 218.86142  | ng     |
| 38) C16(138) #2                    | 27.78    | e 94598891  | 507.11816  | ng     |
| 39) C17(187) #2                    | 28.14    | 33085684    | 198.22279  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7372.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0420\M7372.D\ECD2B.CH  
 Acq On : 10-31-2014 04:45:59 PM Operator: RR  
 Sample : M8164-P(2) Inst : INST. M  
 Misc : NBH14-0049 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:30 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 40714393  | 171.81522 | ng    |
| 41) | C17(180) #2  | 29.59 | 44070257m | 203.71744 | ng    |
| 42) | C17(170) #2  | 30.22 | 30448937  | 131.33001 | ng    |
| 43) | C18(195) #2  | 31.09 | 5913712   | 27.79479  | ng    |
| 44) | C19(206) #2  | 32.18 | 5166605m  | 26.95824  | ng    |
| 45) | C110(209) #2 | 32.62 | 1606118m  | 9.84775   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7373.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0420\M7373.D\ECD2B.CH  
 Acq On : 10-31-2014 05:30:25 PM Operator: RR  
 Sample : M8165-P(2) Inst : INST. M  
 Misc : NBH14-0053 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:35 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 2889280m    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 4967334m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14490294m   | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 28235818m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 6975195m    | 326.46052 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 85.94% |
| 11) s C16(152)                     | 20.48    | 8401367     | 341.63251 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 89.58% |
| 27) s C13(34) #2                   | 16.48    | 38961036    | 326.99062 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 86.08% |
| 34) s C16(152) #2                  | 23.62    | 44952035m   | 285.09554 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 74.75% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 3317216m    | 240.52688 | ng     |
| 3) C13(18)                         | 12.13    | e 7831212   | BelowCal  | ng     |
| 5) C13(28)                         | 14.20    | E 48831850  | BelowCal  | ng     |
| 6) C14(52)                         | 15.83    | E 23097703  | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | e 9371642   | 307.97973 | ng     |
| 8) C14(66)                         | 18.62    | 9381143m    | 253.72333 | ng     |
| 9) C15(101)                        | 19.72    | e 13238808  | 376.49630 | ng     |
| 12) C15(118)                       | 22.39    | e 14148507  | 566.66811 | ng     |
| 13) C16(153)                       | 23.43    | e 18958210  | 868.18010 | ng     |
| 14) C15(105)                       | 23.46    | 3353158m    | 76.08544  | ng     |
| 15) C16(138)                       | 24.53    | 14068338    | 362.01937 | ng     |
| 16) C17(187)                       | 25.29    | 2480974     | 62.55596  | ng     |
| 17) C16(128)                       | 25.63    | 2924429     | 66.06319  | ng     |
| 18) C17(180)                       | 27.16    | 3098492m    | 66.04246  | ng     |
| 19) C17(170)                       | 27.96    | 2346308m    | 43.29864  | ng     |
| 20) C18(195)                       | 29.04    | 440679m     | 7.37538   | ng     |
| 21) C19(206)                       | 30.31    | 485008m     | 8.80396   | ng     |
| 22) C110(209)                      | 30.90    | 154637m     | 2.43089   | ng     |
| 25) C12(8) #2                      | 13.10    | 16375515m   | 195.82791 | ng     |
| 26) C13(18) #2                     | 14.99    | e 39932130  | BelowCal  | ng     |
| 28) C13(28) #2                     | 17.76    | E 154270118 | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | E 127346627 | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 49980063    | 281.74337 | ng     |
| 31) C14(66) #2                     | 22.35    | 49811729m   | 236.77748 | ng     |
| 32) C15(101) #2                    | 23.23    | 47165395m   | 318.39654 | ng     |
| 35) C15(118) #2                    | 26.34    | e 78646334  | 476.04353 | ng     |
| 36) C16(153) #2                    | 26.94    | e 71766317  | 379.60569 | ng     |
| 37) C15(105) #2                    | 27.20    | 19468372    | 73.46370  | ng     |
| 38) C16(138) #2                    | 27.78    | 38619756    | 199.93372 | ng     |
| 39) C17(187) #2                    | 28.14    | 13125385    | 66.36625  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7373.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0420\M7373.D\ECD2B.CH  
 Acq On : 10-31-2014 05:30:25 PM Operator: RR  
 Sample : M8165-P(2) Inst : INST. M  
 Misc : NBH14-0053 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:35 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 16719414m | 59.87550 | ng    |
| 41) | C17(180) #2  | 29.59 | 17062759m | 68.20702 | ng    |
| 42) | C17(170) #2  | 30.22 | 11704393m | 42.69861 | ng    |
| 43) | C18(195) #2  | 31.08 | 2197001m  | 7.80664  | ng    |
| 44) | C19(206) #2  | 32.18 | 2034733m  | 8.19108  | ng    |
| 45) | C110(209) #2 | 32.62 | 686606m   | 2.58234  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7374.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0420\M7374.D\ECD2B.CH  
 Acq On : 10-31-2014 06:14:54 PM Operator: RR  
 Sample : M8166-P(2) Inst : INST. M  
 Misc : NBH14-0061 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units   |
|------------------------------------|----------|------------|-----------|---------|
| <b>Internal Standards</b>          |          |            |           |         |
| 1) I C15(96)                       | 17.39    | 3598343m   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 8569371m   | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15090254m  | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 31678881m  | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |            |           |         |
| 4) s C13(34)                       | 13.40    | 9561946m   | 382.86387 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 100.79% |
| 11) s C16(152)                     | 20.48    | 12450592   | 284.30546 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 74.55%  |
| 27) s C13(34) #2                   | 16.48    | 46259479m  | 397.76578 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 104.71% |
| 34) s C16(152) #2                  | 23.62    | 56855513   | 316.34687 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 82.95%  |
| <b>Target Compounds</b>            |          |            |           |         |
| 2) C12(8)                          | 10.21    | 1959531m   | 93.78766  | ng      |
| 3) C13(18)                         | 12.13    | e 4710823  | 217.68658 | ng      |
| 5) C13(28)                         | 14.20    | E 32631100 | BelowCal  | ng      |
| 6) C14(52)                         | 15.83    | E 16770226 | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 6802147m   | 153.00740 | ng      |
| 8) C14(66)                         | 18.63    | 7712356m   | 151.61955 | ng      |
| 9) C15(101)                        | 19.71    | 9644912    | 190.95192 | ng      |
| 12) C15(118)                       | 22.39    | 9920824    | 171.54367 | ng      |
| 13) C16(153)                       | 23.42    | 10865013m  | 189.97422 | ng      |
| 14) C15(105)                       | 23.46    | 2912422m   | 35.78407  | ng      |
| 15) C16(138)                       | 24.53    | 10640022   | 143.24599 | ng      |
| 16) C17(187)                       | 25.29    | 2133771m   | 29.59120  | ng      |
| 17) C16(128)                       | 25.62    | 2207516    | 27.96090  | ng      |
| 18) C17(180)                       | 27.16    | 2326793m   | 27.39801  | ng      |
| 19) C17(170)                       | 27.96    | 1804088m   | 18.26953  | ng      |
| 20) C18(195)                       | 29.04    | 344285m    | 2.49779   | ng      |
| 21) C19(206)                       | 30.31    | 363418m    | 3.07690   | ng      |
| 22) C110(209)                      | 30.90    | 123641m    | 0.31068   | ng      |
| 25) C12(8) #2                      | 13.10    | 8460029m   | 86.08065  | ng      |
| 26) C13(18) #2                     | 14.99    | 21341811m  | 227.26328 | ng      |
| 28) C13(28) #2                     | 17.76    | e 89107196 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 83632079 | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 33235515   | 161.68691 | ng      |
| 31) C14(66) #2                     | 22.34    | 33511233m  | 143.30190 | ng      |
| 32) C15(101) #2                    | 23.23    | 26437666m  | 182.02237 | ng      |
| 35) C15(118) #2                    | 26.33    | 47792122m  | 248.28768 | ng      |
| 36) C16(153) #2                    | 26.94    | 46380934   | 220.43172 | ng      |
| 37) C15(105) #2                    | 27.20    | 11484896   | 38.16605  | ng      |
| 38) C16(138) #2                    | 27.78    | 22994027m  | 110.68165 | ng      |
| 39) C17(187) #2                    | 28.14    | 8470176m   | 37.32050  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7374.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0420\M7374.D\ECD2B.CH  
 Acq On : 10-31-2014 06:14:54 PM Operator: RR  
 Sample : M8166-P(2) Inst : INST. M  
 Misc : NBH14-0061 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9844973m  | 30.73467 | ng    |
| 41) | C17(180) #2  | 29.59 | 10168670m | 35.81153 | ng    |
| 42) | C17(170) #2  | 30.22 | 7360715m  | 23.45431 | ng    |
| 43) | C18(195) #2  | 31.08 | 1256442m  | 3.33031  | ng    |
| 44) | C19(206) #2  | 32.18 | 1180674m  | 3.68680  | ng    |
| 45) | C110(209) #2 | 32.62 | 343183m   | 0.32710  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7375.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0420\M7375.D\ECD2B.CH  
 Acq On : 10-31-2014 06:59:18 PM Operator: RR  
 Sample : M8166DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0061 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:43 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units   |
|------------------------------------|----------|------------|-----------|---------|
| <b>Internal Standards</b>          |          |            |           |         |
| 1) I C15(96)                       | 17.39    | 3190390m   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 7781021m   | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15038630m  | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 38922832   | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |            |           |         |
| 4) s C13(34)                       | 13.40    | 8564177m   | 389.93887 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 102.65% |
| 11) s C16(152)                     | 20.48    | 11165939   | 280.16110 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 73.46%  |
| 27) s C13(34) #2                   | 16.48    | 45224227m  | 385.89135 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 101.59% |
| 34) s C16(152) #2                  | 23.62    | 56238544   | 261.80585 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 68.65%  |
| <b>Target Compounds</b>            |          |            |           |         |
| 2) C12(8)                          | 10.21    | 1548615m   | 82.09991  | ng      |
| 3) C13(18)                         | 12.13    | 3841063    | 193.67505 | ng      |
| 5) C13(28)                         | 14.20    | E 27006971 | BelowCal  | ng      |
| 6) C14(52)                         | 15.83    | E 14183581 | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 5763603    | 145.02975 | ng      |
| 8) C14(66)                         | 18.64    | 7351924m   | 165.18466 | ng      |
| 9) C15(101)                        | 19.71    | 7977933    | 176.20660 | ng      |
| 12) C15(118)                       | 22.39    | 7914182    | 148.15648 | ng      |
| 13) C16(153)                       | 23.43    | 8638155m   | 164.08093 | ng      |
| 14) C15(105)                       | 23.46    | 2296092m   | 30.61302  | ng      |
| 15) C16(138)                       | 24.53    | 8509174    | 124.94316 | ng      |
| 16) C17(187)                       | 25.29    | 1682704    | 25.34591  | ng      |
| 17) C16(128)                       | 25.63    | 1714986    | 23.77678  | ng      |
| 18) C17(180)                       | 27.16    | 1908377    | 24.54589  | ng      |
| 19) C17(170)                       | 27.96    | 1438868m   | 15.83759  | ng      |
| 20) C18(195)                       | 29.04    | 270697m    | 1.95710   | ng      |
| 21) C19(206)                       | 30.30    | 264490m    | 2.20542   | ng      |
| 22) C110(209)                      | 30.90    | 96647m     | 0.05606   | ng      |
| 25) C12(8) #2                      | 13.11    | 7269999m   | 72.98293  | ng      |
| 26) C13(18) #2                     | 14.99    | 19005567m  | 196.25087 | ng      |
| 28) C13(28) #2                     | 17.76    | e 86353361 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 76309396 | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 30301125   | 145.88288 | ng      |
| 31) C14(66) #2                     | 22.34    | 31853528m  | 135.96067 | ng      |
| 32) C15(101) #2                    | 23.23    | 25747368m  | 178.15576 | ng      |
| 35) C15(118) #2                    | 26.33    | 44460771m  | 185.54147 | ng      |
| 36) C16(153) #2                    | 26.94    | 42969003   | 166.13722 | ng      |
| 37) C15(105) #2                    | 27.20    | 10249502   | 27.29381  | ng      |
| 38) C16(138) #2                    | 27.78    | 20525443   | 81.41456  | ng      |
| 39) C17(187) #2                    | 28.14    | 8644624    | 30.59894  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7375.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0420\M7375.D\ECD2B.CH  
 Acq On : 10-31-2014 06:59:18 PM Operator: RR  
 Sample : M8166DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0061 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:43 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9716345m | 24.33091 | ng    |
| 41) | C17(180) #2  | 29.58 | 9462159m | 26.76709 | ng    |
| 42) | C17(170) #2  | 30.22 | 7023771  | 17.92122 | ng    |
| 43) | C18(195) #2  | 31.08 | 1470283m | 3.10838  | ng    |
| 44) | C19(206) #2  | 32.18 | 1188936m | 2.81446  | ng    |
| 45) | C110(209) #2 | 32.62 | 396583m  | 0.21927  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7376.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0420\M7376.D\ECD2B.CH  
 Acq On : 10-31-2014 07:43:57 PM Operator: RR  
 Sample : M8347-P(2) Inst : INST. M  
 Misc : NBH14-0057 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units   |
|------------------------------------|----------|------------|-----------|---------|
| <b>Internal Standards</b>          |          |            |           |         |
| 1) I C15(96)                       | 17.39    | 3398551m   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 8055989m   | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15534742m  | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 33866995m  | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |            |           |         |
| 4) s C13(34)                       | 13.40    | 9057413    | 384.87368 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 101.32% |
| 11) s C16(152)                     | 20.48    | 11226563   | 270.63878 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 70.96%  |
| 27) s C13(34) #2                   | 16.48    | 47943367m  | 402.07664 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 105.85% |
| 34) s C16(152) #2                  | 23.63    | 58464314   | 305.89791 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 80.21%  |
| <b>Target Compounds</b>            |          |            |           |         |
| 2) C12(8)                          | 10.21    | 1887669    | 95.97060  | ng      |
| 3) C13(18)                         | 12.13    | e 4712665m | 236.80032 | ng      |
| 5) C13(28)                         | 14.20    | E 30100655 | BelowCal  | ng      |
| 6) C14(52)                         | 15.83    | E 15619604 | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 5328498    | 122.99389 | ng      |
| 8) C14(66)                         | 18.63    | 6794944m   | 139.80270 | ng      |
| 9) C15(101)                        | 19.71    | 8673814    | 180.40361 | ng      |
| 12) C15(118)                       | 22.39    | 8971561m   | 164.13356 | ng      |
| 13) C16(153)                       | 23.43    | 10457727m  | 195.02370 | ng      |
| 14) C15(105)                       | 23.46    | 2345568m   | 30.16131  | ng      |
| 15) C16(138)                       | 24.53    | 9270351    | 131.97559 | ng      |
| 16) C17(187)                       | 25.29    | 1692527m   | 24.54856  | ng      |
| 17) C16(128)                       | 25.63    | 1782698m   | 23.87580  | ng      |
| 18) C17(180)                       | 27.16    | 2071094m   | 25.82975  | ng      |
| 19) C17(170)                       | 27.96    | 1610685m   | 17.26335  | ng      |
| 20) C18(195)                       | 29.04    | 304146     | 2.25466   | ng      |
| 21) C19(206)                       | 30.31    | 418357     | 4.06320   | ng      |
| 22) C110(209)                      | 30.90    | 111304m    | 0.23305   | ng      |
| 25) C12(8) #2                      | 13.11    | 9172944m   | 91.23636  | ng      |
| 26) C13(18) #2                     | 14.99    | 26964615   | 303.94502 | ng      |
| 28) C13(28) #2                     | 17.76    | e 94778452 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 86925908 | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 27447426m  | 125.65325 | ng      |
| 31) C14(66) #2                     | 22.35    | 33198320m  | 137.30909 | ng      |
| 32) C15(101) #2                    | 23.23    | 27509077m  | 183.84368 | ng      |
| 35) C15(118) #2                    | 26.33    | 50096653   | 243.20776 | ng      |
| 36) C16(153) #2                    | 26.94    | 47917115   | 213.04265 | ng      |
| 37) C15(105) #2                    | 27.20    | 11071211m  | 34.26946  | ng      |
| 38) C16(138) #2                    | 27.78    | 22940099   | 103.61271 | ng      |
| 39) C17(187) #2                    | 28.14    | 9398607    | 38.82242  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7376.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0420\M7376.D\ECD2B.CH  
 Acq On : 10-31-2014 07:43:57 PM Operator: RR  
 Sample : M8347-P(2) Inst : INST. M  
 Misc : NBH14-0057 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 10451167m | 30.50684 | ng    |
| 41) | C17(180) #2  | 29.58 | 10761528m | 35.43728 | ng    |
| 42) | C17(170) #2  | 30.22 | 7431828m  | 22.07984 | ng    |
| 43) | C18(195) #2  | 31.08 | 1345952m  | 3.33977  | ng    |
| 44) | C19(206) #2  | 32.18 | 1311264m  | 3.87458  | ng    |
| 45) | C110(209) #2 | 32.62 | 345342m   | 0.22062  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7378.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0420\M7378.D\ECD2B.CH  
 Acq On : 10-31-2014 09:12:51 PM Operator: RR  
 Sample : M8348-P(2) Inst : INST. M  
 Misc : NBH14-0069 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:55 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 3751008   | 95.00000  | ng     |
| 10) I C16(161)              | 23.21    | 7641392   | 95.00000  | ng     |
| 24) I C15(96) #2            | 20.52    | 16746505m | 95.00000  | ng     |
| 33) I C16(161) #2           | 26.79    | 39435531m | 95.00000  | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 9045541m  | 325.89874 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 85.79% |
| 11) s C16(152)              | 20.48    | 12460849  | 326.66076 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 85.65% |
| 27) s C13(34) #2            | 16.48    | 48060641m | 359.38132 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 94.61% |
| 34) s C16(152) #2           | 23.63    | 64666168  | 292.54461 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 76.71% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 495996    | 18.07016  | ng     |
| 3) C13(18)                  | 12.13    | 1242193   | 41.11330  | ng     |
| 5) C13(28)                  | 14.20    | 4666790m  | 94.18985  | ng     |
| 6) C14(52)                  | 15.83    | 4635783m  | 136.21617 | ng     |
| 7) C14(44)                  | 16.70    | 1947652   | 35.75379  | ng     |
| 8) C14(66)                  | 18.63    | 2292298m  | 37.40521  | ng     |
| 9) C15(101)                 | 19.71    | 2764796   | 46.45949  | ng     |
| 12) C15(118)                | 22.39    | 2691460   | 46.33564  | ng     |
| 13) C16(153)                | 23.42    | 3320381m  | 60.46997  | ng     |
| 14) C15(105)                | 23.46    | 767194m   | 8.64657   | ng     |
| 15) C16(138)                | 24.52    | 3004103m  | 41.94208  | ng     |
| 16) C17(187)                | 25.29    | 637512m   | 8.26933   | ng     |
| 17) C16(128)                | 25.62    | 677521    | 9.10585   | ng     |
| 18) C17(180)                | 27.16    | 680243m   | 7.66049   | ng     |
| 19) C17(170)                | 27.96    | 540314m   | 5.02507   | ng     |
| 20) C18(195)                | 29.04    | 101882m   | BelowCal  | ng     |
| 21) C19(206)                | 30.31    | 113027m   | 0.21883   | ng     |
| 22) C110(209)               | 30.90    | 27981m    | BelowCal  | ng     |
| 25) C12(8) #2               | 13.11    | 2345769m  | 18.34331  | ng     |
| 26) C13(18) #2              | 14.99    | 6377837m  | 47.91547  | ng     |
| 28) C13(28) #2              | 17.76    | 23170030m | 98.12480  | ng     |
| 29) C14(52) #2              | 19.15    | 24279771m | 194.97210 | ng     |
| 30) C14(44) #2              | 19.96    | 10318847m | 39.90133  | ng     |
| 31) C14(66) #2              | 22.35    | 10819291m | 37.69903  | ng     |
| 32) C15(101) #2             | 23.23    | 7158949m  | 44.69561  | ng     |
| 35) C15(118) #2             | 26.34    | 14753106m | 57.34439  | ng     |
| 36) C16(153) #2             | 26.94    | 15508424  | 57.27974  | ng     |
| 37) C15(105) #2             | 27.20    | 3607649m  | 8.27653   | ng     |
| 38) C16(138) #2             | 27.78    | 7812140   | 30.81584  | ng     |
| 39) C17(187) #2             | 28.14    | 5016239m  | 16.43580  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7378.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0420\M7378.D\ECD2B.CH  
 Acq On : 10-31-2014 09:12:51 PM Operator: RR  
 Sample : M8348-P(2) Inst : INST. M  
 Misc : NBH14-0069 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:22:55 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3986423m | 8.66406  | ng    |
| 41) | C17(180) #2  | 29.59 | 3439631m | 8.48082  | ng    |
| 42) | C17(170) #2  | 30.22 | 2447485m | 5.21365  | ng    |
| 43) | C18(195) #2  | 31.08 | 417339m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 417107m  | 0.22027  | ng    |
| 45) | C110(209) #2 | 32.64 | 200475m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7379.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0420\M7379.D\ECD2B.CH  
 Acq On : 10-31-2014 09:57:14 PM Operator: RR  
 Sample : M8355-P(2) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound | R.T. | Response | Conc | Units |
|----------|------|----------|------|-------|
|----------|------|----------|------|-------|

Internal Standards

|       |             |       |           |          |    |
|-------|-------------|-------|-----------|----------|----|
| 1) I  | C15(96)     | 17.41 | 2995612m  | 95.00000 | ng |
| 10) I | C16(161)    | 23.21 | 8788341m  | 95.00000 | ng |
| 24) I | C15(96) #2  | 20.52 | 34038957m | 95.00000 | ng |
| 33) I | C16(161) #2 | 26.80 | 23315495  | 95.00000 | ng |

System Monitoring Compounds

|               |             |          |           |           |          |
|---------------|-------------|----------|-----------|-----------|----------|
| 4) s          | C13(34)     | 13.40    | 18017489m | BelowCal  | ng       |
| Spiked Amount |             | 379.8670 | Recovery  |           | = 0.00%  |
| 11) s         | C16(152)    | 20.49    | 10076816  | 215.99978 | ng       |
| Spiked Amount |             | 381.3865 | Recovery  |           | = 56.64% |
| 27) s         | C13(34) #2  | 16.48    | 77840607m | 262.85434 | ng       |
| Spiked Amount |             | 379.8670 | Recovery  |           | = 69.20% |
| 34) s         | C16(152) #2 | 23.63    | 40153461m | 305.26686 | ng       |
| Spiked Amount |             | 381.3865 | Recovery  |           | = 80.04% |

Target Compounds

|     |             |       |   |            |            |    |
|-----|-------------|-------|---|------------|------------|----|
| 2)  | C12(8)      | 10.22 | E | 198412627  | BelowCal   | ng |
| 3)  | C13(18)     | 12.14 | E | 461654153  | BelowCal   | ng |
| 5)  | C13(28)     | 14.23 | E | 1248497850 | BelowCal   | ng |
| 6)  | C14(52)     | 15.86 | E | 716654663  | BelowCal   | ng |
| 7)  | C14(44)     | 16.71 | E | 175933460  | BelowCal   | ng |
| 8)  | C14(66)     | 18.57 | E | 97980355   | BelowCal   | ng |
| 9)  | C15(101)    | 19.72 | E | 97502416   | BelowCal   | ng |
| 12) | C15(118)    | 22.34 | E | 234220377  | BelowCal   | ng |
| 13) | C16(153)    | 23.44 | E | 126428631  | BelowCal   | ng |
| 14) | C15(105)    | 23.48 |   | 10453081m  | 144.69315  | ng |
| 15) | C16(138)    | 24.53 | E | 92474710   | BelowCal   | ng |
| 16) | C17(187)    | 25.30 | E | 31336797   | 583.24731  | ng |
| 17) | C16(128)    | 25.64 |   | 9096437    | 120.13493  | ng |
| 18) | C17(180)    | 27.17 | e | 24394254   | 320.55248  | ng |
| 19) | C17(170)    | 27.97 | e | 18476060m  | 206.49670  | ng |
| 20) | C18(195)    | 29.05 |   | 4147837    | 46.24512   | ng |
| 21) | C19(206)    | 30.32 |   | 5986883m   | 70.27839   | ng |
| 22) | C110(209)   | 30.91 |   | 1400727m   | 18.81113   | ng |
| 25) | C12(8) #2   | 13.11 | E | 745413482  | BelowCal   | ng |
| 26) | C13(18) #2  | 15.01 | E | 1656718349 | BelowCal   | ng |
| 28) | C13(28) #2  | 17.78 | E | 2760865614 | BelowCal   | ng |
| 29) | C14(52) #2  | 19.16 | E | 2674076924 | BelowCal   | ng |
| 30) | C14(44) #2  | 19.96 | E | 696785977  | BelowCal   | ng |
| 31) | C14(66) #2  | 22.33 | E | 505424267  | BelowCal   | ng |
| 32) | C15(101) #2 | 23.23 | E | 456705596  | 991.70818  | ng |
| 35) | C15(118) #2 | 26.34 | E | 242287140  | 2463.80093 | ng |
| 36) | C16(153) #2 | 26.94 | E | 457056202  | 2459.37575 | ng |
| 37) | C15(105) #2 | 27.21 |   | 31378289   | 142.03205  | ng |
| 38) | C16(138) #2 | 27.79 | e | 84833732   | 469.27511  | ng |
| 39) | C17(187) #2 | 28.14 | E | 128687395  | 701.82901  | ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7379.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0420\M7379.D\ECD2B.CH  
 Acq On : 10-31-2014 09:57:14 PM Operator: RR  
 Sample : M8355-P(2) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response    | Conc      | Units |
|-----|--------------|-------|-------------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 39075149m   | 167.52475 | ng    |
| 41) | C17(180) #2  | 29.59 | e 116392224 | 497.26546 | ng    |
| 42) | C17(170) #2  | 30.22 | 61994814    | 260.78908 | ng    |
| 43) | C18(195) #2  | 31.09 | 17199977m   | 82.72392  | ng    |
| 44) | C19(206) #2  | 32.19 | 23468027m   | 123.76292 | ng    |
| 45) | C110(209) #2 | 32.63 | 4290681m    | 29.07655  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7380.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0420\M7380.D\ECD2B.CH  
 Acq On : 31 Oct 2014 10:41 pm Operator: RR  
 Sample : M8358-P(2) Inst : INST. M  
 Misc : NBH14-0215 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:04 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.39    | 2680242m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.20    | 6090720m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 15082738m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.79    | 29331208    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 9373558m    | BelowCal   | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 0.00%   |
| 11) s C16(152)                     | 20.48    | 10723183    | 359.09969  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 94.16%  |
| 27) s C13(34) #2                   | 16.48    | 47048610m   | 409.10538  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 107.70% |
| 34) s C16(152) #2                  | 23.63    | 51959906    | 312.80850  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 82.02%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 5671930   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 13899977  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 122433668 | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 67229953  | BelowCal   | ng      |
| 7) C14(44)                         | 16.70    | E 30604270  | BelowCal   | ng      |
| 8) C14(66)                         | 18.65    | E 50524194  | BelowCal   | ng      |
| 9) C15(101)                        | 19.72    | E 30904717  | BelowCal   | ng      |
| 12) C15(118)                       | 22.39    | E 28562797  | BelowCal   | ng      |
| 13) C16(153)                       | 23.43    | E 46496965  | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | 6856404m    | 135.65503  | ng      |
| 15) C16(138)                       | 24.53    | E 36190672  | BelowCal   | ng      |
| 16) C17(187)                       | 25.30    | 6948977m    | 151.37733  | ng      |
| 17) C16(128)                       | 25.63    | 6604208m    | 126.31489  | ng      |
| 18) C17(180)                       | 27.16    | 8762579m    | 158.43268  | ng      |
| 19) C17(170)                       | 27.97    | 6322204m    | 98.43508   | ng      |
| 20) C18(195)                       | 29.04    | 1636058     | 25.54102   | ng      |
| 21) C19(206)                       | 30.31    | 3029411m    | 50.71863   | ng      |
| 22) C110(209)                      | 30.90    | 511840m     | 9.16625    | ng      |
| 25) C12(8) #2                      | 13.10    | e 29349982  | 468.49906  | ng      |
| 26) C13(18) #2                     | 14.99    | E 67049061  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.76    | E 347264623 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 322155920 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 147990516 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.33    | E 180947667 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 184363011 | 925.93228  | ng      |
| 35) C15(118) #2                    | 26.34    | E 159127331 | 1004.15934 | ng      |
| 36) C16(153) #2                    | 26.94    | E 167117031 | 820.73079  | ng      |
| 37) C15(105) #2                    | 27.20    | 36037201    | 130.00100  | ng      |
| 38) C16(138) #2                    | 27.78    | e 78908291  | 363.87830  | ng      |
| 39) C17(187) #2                    | 28.14    | 35930858m   | 174.38882  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7380.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0420\M7380.D\ECD2B.CH  
 Acq On : 31 Oct 2014 10:41 pm Operator: RR  
 Sample : M8358-P(2) Inst : INST. M  
 Misc : NBH14-0215 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:04 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:22:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 37264130m | 128.05720 | ng    |
| 41) | C17(180) #2  | 29.59 | 45577509m | 171.63592 | ng    |
| 42) | C17(170) #2  | 30.22 | 29489209  | 103.33821 | ng    |
| 43) | C18(195) #2  | 31.09 | 7671232   | 29.13320  | ng    |
| 44) | C19(206) #2  | 32.18 | 13110693m | 55.76441  | ng    |
| 45) | C110(209) #2 | 32.62 | 2228096m  | 11.19376  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7381.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0420\M7381.D\ECD2B.CH  
 Acq On : 31 Oct 2014 11:26 pm Operator: RR  
 Sample : M8359-P(2) Inst : INST. M  
 Misc : NBH14-0219 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.38    | 3315182m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 5136392m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 15174739    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.79    | 27640216    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 9220992     | 417.21621  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 109.83% |
| 11) s C16(152)                     | 20.49    | 10046835    | 410.72328  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 107.69% |
| 27) s C13(34) #2                   | 16.48    | 44765122    | 374.61075  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 98.62%  |
| 34) s C16(152) #2                  | 23.63    | 45739684    | 294.87706  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 77.32%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 6230933   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 14430461  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 126267440 | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 65192850  | BelowCal   | ng      |
| 7) C14(44)                         | 16.70    | E 29046669  | BelowCal   | ng      |
| 8) C14(66)                         | 18.65    | E 50530372  | BelowCal   | ng      |
| 9) C15(101)                        | 19.72    | E 31429608  | BelowCal   | ng      |
| 12) C15(118)                       | 22.39    | E 30636887  | BelowCal   | ng      |
| 13) C16(153)                       | 23.43    | E 46127877  | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | 5361608m    | 124.28920  | ng      |
| 15) C16(138)                       | 24.53    | E 35504656  | BelowCal   | ng      |
| 16) C17(187)                       | 25.30    | 6563807     | 171.27045  | ng      |
| 17) C16(128)                       | 25.63    | 6667583     | 153.68840  | ng      |
| 18) C17(180)                       | 27.16    | 8129892     | 175.24128  | ng      |
| 19) C17(170)                       | 27.97    | 6163709m    | 114.50605  | ng      |
| 20) C18(195)                       | 29.04    | 1163662     | 21.28119   | ng      |
| 21) C19(206)                       | 30.31    | 1380213m    | 26.64084   | ng      |
| 22) C110(209)                      | 30.91    | 400344m     | 8.38898    | ng      |
| 25) C12(8) #2                      | 13.10    | e 29861497  | 484.96152  | ng      |
| 26) C13(18) #2                     | 15.00    | E 65714238  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.76    | E 333068710 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 293059018 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 131025800 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.33    | E 172137229 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 172253319 | 876.28827  | ng      |
| 35) C15(118) #2                    | 26.34    | E 153179099 | 1029.78608 | ng      |
| 36) C16(153) #2                    | 26.94    | E 157773167 | 822.14489  | ng      |
| 37) C15(105) #2                    | 27.21    | 32255728    | 123.63623  | ng      |
| 38) C16(138) #2                    | 27.78    | e 72259908  | 355.04984  | ng      |
| 39) C17(187) #2                    | 28.14    | 28793410    | 148.86358  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7381.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0420\M7381.D\ECD2B.CH  
 Acq On : 31 Oct 2014 11:26 pm Operator: RR  
 Sample : M8359-P(2) Inst : INST. M  
 Misc : NBH14-0219 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 33403011m | 121.94366 | ng    |
| 41) | C17(180) #2  | 29.59 | 39038164m | 156.68396 | ng    |
| 42) | C17(170) #2  | 30.22 | 27981099  | 104.03581 | ng    |
| 43) | C18(195) #2  | 31.09 | 5741986   | 22.92783  | ng    |
| 44) | C19(206) #2  | 32.18 | 5375500m  | 23.91580  | ng    |
| 45) | C110(209) #2 | 32.62 | 1408607m  | 7.03043   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7382.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0420\M7382.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:10 am Operator: RR  
 Sample : M8365-P(2) Inst : INST. M  
 Misc : NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:11 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3821195   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7831186   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 15956584m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 37894546m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 9649229   | 350.82172 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 92.35% |
| 11) s C16(152)                     | 20.48    | 13199210  | 340.17368 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 89.19% |
| 27) s C13(34) #2                   | 16.48    | 46744117m | 370.64919 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 97.57% |
| 34) s C16(152) #2                  | 23.62    | 62856516  | 295.48121 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 77.48% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 23670m    | BelowCal  | ng     |
| 3) C13(18)                         | 12.12    | 36102     | BelowCal  | ng     |
| 5) C13(28)                         | 14.20    | 158904m   | 0.66371   | ng     |
| 6) C14(52)                         | 15.84    | 178095m   | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | 66900     | BelowCal  | ng     |
| 8) C14(66)                         | 18.60    | 174573m   | 0.29995   | ng     |
| 9) C15(101)                        | 19.72    | 187571    | 1.45274   | ng     |
| 12) C15(118)                       | 22.39    | 238087m   | 1.25228   | ng     |
| 13) C16(153)                       | 23.42    | 255278m   | 3.48414   | ng     |
| 14) C15(105)                       | 23.45    | 89811m    | BelowCal  | ng     |
| 15) C16(138)                       | 24.53    | 270131m   | 1.48801   | ng     |
| 16) C17(187)                       | 25.29    | 49880     | BelowCal  | ng     |
| 17) C16(128)                       | 25.62    | 48903m    | 0.04082   | ng     |
| 18) C17(180)                       | 27.15    | 31826m    | BelowCal  | ng     |
| 19) C17(170)                       | 27.96    | 29857m    | BelowCal  | ng     |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng     |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng     |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng     |
| 25) C12(8) #2                      | 13.10    | 73202m    | BelowCal  | ng     |
| 26) C13(18) #2                     | 15.00    | 145757m   | BelowCal  | ng     |
| 28) C13(28) #2                     | 17.76    | 605421m   | 0.62923   | ng     |
| 29) C14(52) #2                     | 19.15    | 564327m   | 1.56318   | ng     |
| 30) C14(44) #2                     | 19.96    | 271567m   | BelowCal  | ng     |
| 31) C14(66) #2                     | 22.35    | 587602m   | 0.25667   | ng     |
| 32) C15(101) #2                    | 23.23    | 785589m   | 1.39915   | ng     |
| 35) C15(118) #2                    | 26.33    | 1186174m  | 1.51199   | ng     |
| 36) C16(153) #2                    | 26.93    | 1224240m  | 1.08242   | ng     |
| 37) C15(105) #2                    | 27.20    | 387648    | BelowCal  | ng     |
| 38) C16(138) #2                    | 27.77    | 644004m   | 1.75393   | ng     |
| 39) C17(187) #2                    | 28.14    | 208377    | BelowCal  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7382.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0420\M7382.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:10 am Operator: RR  
 Sample : M8365-P(2) Inst : INST. M  
 Misc : NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:11 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 366867m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 181046m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 107026m  | BelowCal | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7383.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0420\M7383.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:55 am Operator: RR  
 Sample : M8365MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:29:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:29:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 3843951   | 100.00000 | ng     |
| 10) I C16(161)              | 23.21    | 7749962   | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.51    | 15872934m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.79    | 36512169m | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 9395616   | 350.38971 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 87.60% |
| 11) s C16(152)              | 20.48    | 13130231  | 360.37697 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 89.74% |
| 27) s C13(34) #2            | 16.48    | 44383273m | 364.08084 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 91.02% |
| 34) s C16(152) #2           | 23.62    | 54821750m | 285.07988 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 70.99% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 1117576   | 48.12097  | ng     |
| 3) C13(18)                  | 12.13    | 1405312   | 48.57573  | ng     |
| 5) C13(28)                  | 14.21    | 2689875   | 52.63508  | ng     |
| 6) C14(52)                  | 15.83    | 1973144   | 51.18314  | ng     |
| 7) C14(44)                  | 16.70    | 2608508m  | 50.70648  | ng     |
| 8) C14(66)                  | 18.60    | 2949758   | 50.59167  | ng     |
| 9) C15(101)                 | 19.74    | 2966553m  | 51.36566  | ng     |
| 12) C15(118)                | 22.39    | 3232848   | 58.66037  | ng     |
| 13) C16(153)                | 23.44 TW | 2823771m  | 52.94520  | ng     |
| 14) C15(105)                | 23.45 TW | 3669447m  | 54.21086  | ng     |
| 15) C16(138)                | 24.54    | 3949867   | 58.28208  | ng     |
| 16) C17(187)                | 25.29    | 3336262   | 56.19958  | ng     |
| 17) C16(128)                | 25.63    | 2862391m  | 42.78192  | ng     |
| 18) C17(180)                | 27.16    | 3937858m  | 56.07583  | ng     |
| 19) C17(170)                | 27.96    | 4326154m  | 54.28796  | ng     |
| 20) C18(195)                | 29.04    | 4231892m  | 56.66672  | ng     |
| 21) C19(206)                | 30.31    | 3908048m  | 54.15566  | ng     |
| 22) C110(209)               | 30.90    | 3264167m  | 55.59541  | ng     |
| 25) C12(8) #2               | 13.11    | 5344282m  | 51.53695  | ng     |
| 26) C13(18) #2              | 14.99    | 6334731m  | 53.24280  | ng     |
| 28) C13(28) #2              | 17.76    | 12393105m | 55.56508  | ng     |
| 29) C14(52) #2              | 19.14    | 7514722m  | 56.96496  | ng     |
| 30) C14(44) #2              | 19.96    | 14718256m | 65.20151  | ng     |
| 31) C14(66) #2              | 22.36    | 13985999m | 55.36961  | ng     |
| 32) C15(101) #2             | 23.24    | 7729118m  | 54.01071  | ng     |
| 35) C15(118) #2             | 26.35    | 12584669m | 55.28201  | ng     |
| 36) C16(153) #2             | 26.94    | 13389938  | 55.96826  | ng     |
| 37) C15(105) #2             | 27.20    | 18288324m | 55.99929  | ng     |
| 38) C16(138) #2             | 27.78    | 12351729m | 55.46810  | ng     |
| 39) C17(187) #2             | 28.14    | 14128913  | 57.85464  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7383.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0420\M7383.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:55 am Operator: RR  
 Sample : M8365MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:29:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:29:26 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 19515547m | 56.78799 | ng    |
| 41) | C17(180) #2  | 29.58 | 17478725m | 56.78039 | ng    |
| 42) | C17(170) #2  | 30.22 | 18631628m | 55.48149 | ng    |
| 43) | C18(195) #2  | 31.09 | 17250129m | 55.95649 | ng    |
| 44) | C19(206) #2  | 32.18 | 14727478m | 52.96422 | ng    |
| 45) | C110(209) #2 | 32.62 | 11874304m | 54.91812 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7384.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0420\M7384.D\ECD2B.CH  
 Acq On : 11-1-2014 01:39:39 AM Operator: RR  
 Sample : M8365MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0234 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:30:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:30:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3569199   | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 6782213   | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.52    | 16200820m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 36953227  | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8327399   | 326.13609 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 81.53% |
| 11) s C16(152)                     | 20.48    | 11593800  | 364.38328 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 90.73% |
| 27) s C13(34) #2                   | 16.48    | 43376672m | 342.15549 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 85.54% |
| 34) s C16(152) #2                  | 23.62    | 60607017m | 307.99179 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 76.69% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 977507    | 44.94333  | ng     |
| 3) C13(18)                         | 12.13    | 1246425   | 46.04843  | ng     |
| 5) C13(28)                         | 14.21    | 2306221   | 48.24155  | ng     |
| 6) C14(52)                         | 15.83    | 1712298   | 47.25455  | ng     |
| 7) C14(44)                         | 16.70    | 2261182m  | 46.98155  | ng     |
| 8) C14(66)                         | 18.60    | 2505431   | 45.87149  | ng     |
| 9) C15(101)                        | 19.73    | 2787835m  | 52.02972  | ng     |
| 12) C15(118)                       | 22.39    | 2754307   | 56.97197  | ng     |
| 13) C16(153)                       | 23.44 TW | 2559039m  | 54.91456  | ng     |
| 14) C15(105)                       | 23.45 TW | 3235235m  | 54.65529  | ng     |
| 15) C16(138)                       | 24.54    | 3301847   | 55.50209  | ng     |
| 16) C17(187)                       | 25.29    | 2788618   | 53.50955  | ng     |
| 17) C16(128)                       | 25.63    | 2593639m  | 44.35601  | ng     |
| 18) C17(180)                       | 27.16    | 3160537m  | 51.20277  | ng     |
| 19) C17(170)                       | 27.96    | 3478484m  | 49.68509  | ng     |
| 20) C18(195)                       | 29.04    | 3349686m  | 51.04006  | ng     |
| 21) C19(206)                       | 30.31    | 3010130m  | 47.42632  | ng     |
| 22) C110(209)                      | 30.90    | 2530539m  | 48.96103  | ng     |
| 25) C12(8) #2                      | 13.11    | 5083973m  | 47.69357  | ng     |
| 26) C13(18) #2                     | 14.99    | 5895438m  | 47.84308  | ng     |
| 28) C13(28) #2                     | 17.76    | 11755388m | 51.34948  | ng     |
| 29) C14(52) #2                     | 19.14    | 7218531m  | 53.28922  | ng     |
| 30) C14(44) #2                     | 19.96    | 14022188m | 60.53399  | ng     |
| 31) C14(66) #2                     | 22.36    | 13243452m | 51.09294  | ng     |
| 32) C15(101) #2                    | 23.24    | 7731741m  | 52.87892  | ng     |
| 35) C15(118) #2                    | 26.35    | 11989427m | 51.79561  | ng     |
| 36) C16(153) #2                    | 26.94    | 12800579  | 52.65197  | ng     |
| 37) C15(105) #2                    | 27.20    | 17536467  | 52.99993  | ng     |
| 38) C16(138) #2                    | 27.78    | 13407479m | 59.44322  | ng     |
| 39) C17(187) #2                    | 28.14    | 13561283  | 54.76386  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7384.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0420\M7384.D\ECD2B.CH  
 Acq On : 11-1-2014 01:39:39 AM Operator: RR  
 Sample : M8365MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0234 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:30:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:30:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 18775144  | 53.92114 | ng    |
| 41) | C17(180) #2  | 29.59 | 17198457  | 55.18110 | ng    |
| 42) | C17(170) #2  | 30.22 | 18234568m | 53.63482 | ng    |
| 43) | C18(195) #2  | 31.09 | 17140292m | 54.93361 | ng    |
| 44) | C19(206) #2  | 32.18 | 15182643m | 53.95218 | ng    |
| 45) | C110(209) #2 | 32.62 | 12339522m | 56.40727 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7385.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0420\M7385.D\ECD2B.CH  
 Acq On : 11-1-2014 02:24:06 AM Operator: RR  
 Sample : M8371-P(2) Inst : INST. M  
 Misc : NBH14-0257 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:56 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3353200m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 6656149m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14777351m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 32303495m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8355076m  | 343.25351 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 90.36% |
| 11) s C16(152)                     | 20.48    | 10437380  | 311.48693 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 81.67% |
| 27) s C13(34) #2                   | 16.48    | 43838325m | 377.84946 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 99.47% |
| 34) s C16(152) #2                  | 23.63    | 54362090  | 299.21347 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 78.45% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 541074m   | 23.03314  | ng     |
| 3) C13(18)                         | 12.13    | 1136630m  | 42.24975  | ng     |
| 5) C13(28)                         | 14.20    | 6177463m  | 147.31453 | ng     |
| 6) C14(52)                         | 15.84    | 3991350   | 130.20758 | ng     |
| 7) C14(44)                         | 16.70    | 1762892   | 36.25516  | ng     |
| 8) C14(66)                         | 18.61    | 2938772m  | 55.61088  | ng     |
| 9) C15(101)                        | 19.72    | 3997192   | 77.73585  | ng     |
| 12) C15(118)                       | 22.39    | 5300857m  | 112.86559 | ng     |
| 13) C16(153)                       | 23.43    | 4971555m  | 107.02562 | ng     |
| 14) C15(105)                       | 23.46    | 1562781m  | 23.72115  | ng     |
| 15) C16(138)                       | 24.53    | 5058063m  | 84.69954  | ng     |
| 16) C17(187)                       | 25.29    | 794010m   | 12.85691  | ng     |
| 17) C16(128)                       | 25.63    | 1168526m  | 18.75664  | ng     |
| 18) C17(180)                       | 27.16    | 941152m   | 13.30543  | ng     |
| 19) C17(170)                       | 27.96    | 656362m   | 7.66137   | ng     |
| 20) C18(195)                       | 29.04    | 152855m   | 0.77063   | ng     |
| 21) C19(206)                       | 30.30    | 129216m   | 0.69685   | ng     |
| 22) C110(209)                      | 30.90    | 51557m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 2470363m  | 22.46514  | ng     |
| 26) C13(18) #2                     | 14.99    | 5614626m  | 47.78465  | ng     |
| 28) C13(28) #2                     | 17.76    | 32946247m | 167.56709 | ng     |
| 29) C14(52) #2                     | 19.15    | 20107943m | 180.16249 | ng     |
| 30) C14(44) #2                     | 19.96    | 8649585m  | 37.75557  | ng     |
| 31) C14(66) #2                     | 22.36    | 12962325m | 52.34865  | ng     |
| 32) C15(101) #2                    | 23.23    | 10339469m | 74.59231  | ng     |
| 35) C15(118) #2                    | 26.34    | 27553035  | 136.73603 | ng     |
| 36) C16(153) #2                    | 26.94    | 23138822m | 107.04763 | ng     |
| 37) C15(105) #2                    | 27.20    | 9123540m  | 29.39325  | ng     |
| 38) C16(138) #2                    | 27.78    | 15463514m | 74.10697  | ng     |
| 39) C17(187) #2                    | 28.14    | 3758310m  | 14.80868  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7385.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0420\M7385.D\ECD2B.CH  
 Acq On : 11-1-2014 02:24:06 AM Operator: RR  
 Sample : M8371-P(2) Inst : INST. M  
 Misc : NBH14-0257 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:23:56 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 7220675m | 21.58892 | ng    |
| 41) | C17(180) #2  | 29.59 | 5128745m | 16.90521 | ng    |
| 42) | C17(170) #2  | 30.22 | 3608327m | 10.55626 | ng    |
| 43) | C18(195) #2  | 31.09 | 590697m  | 0.81453  | ng    |
| 44) | C19(206) #2  | 32.18 | 475337m  | 0.75824  | ng    |
| 45) | C110(209) #2 | 32.63 | 244791m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7386.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0420\M7386.D\ECD2B.CH  
 Acq On : 11-1-2014 03:08:37 AM Operator: RR  
 Sample : M8372-P(2) Inst : INST. M  
 Misc : NBH14-0261 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:02 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.40    | 3992391     | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 8711899m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 15350953    | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 31924071m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 9531146     | 320.85530 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 84.47% |
| 11) s C16(152)                     | 20.48    | 12096268    | 269.47682 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 70.66% |
| 27) s C13(34) #2                   | 16.48    | 43529227m   | 353.04314 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 92.94% |
| 34) s C16(152) #2                  | 23.63    | 53478338    | 298.02687 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 78.14% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1153128m    | 45.37294  | ng     |
| 3) C13(18)                         | 12.13    | 2347116     | 80.11915  | ng     |
| 5) C13(28)                         | 14.20    | e 11727579m | 263.70196 | ng     |
| 6) C14(52)                         | 15.84    | e 9353340   | 319.52083 | ng     |
| 7) C14(44)                         | 16.70    | 4044663m    | 75.13388  | ng     |
| 8) C14(66)                         | 18.61    | 6100217m    | 102.88317 | ng     |
| 9) C15(101)                        | 19.72    | 8356900m    | 143.99141 | ng     |
| 12) C15(118)                       | 22.39    | 10229711m   | 174.34141 | ng     |
| 13) C16(153)                       | 23.43    | 10306017m   | 175.94527 | ng     |
| 14) C15(105)                       | 23.46    | 3349051m    | 40.97682  | ng     |
| 15) C16(138)                       | 24.53    | 10332075    | 136.33136 | ng     |
| 16) C17(187)                       | 25.30    | 1739079m    | 23.19438  | ng     |
| 17) C16(128)                       | 25.63    | 2099735m    | 26.09300  | ng     |
| 18) C17(180)                       | 27.16    | 2070246m    | 23.71848  | ng     |
| 19) C17(170)                       | 27.97    | 1568194m    | 15.37122  | ng     |
| 20) C18(195)                       | 29.04    | 327960m     | 2.24372   | ng     |
| 21) C19(206)                       | 30.31    | 388964m     | 3.30872   | ng     |
| 22) C110(209)                      | 30.91    | 108034m     | 0.05352   | ng     |
| 25) C12(8) #2                      | 13.11    | 5093850m    | 48.18172  | ng     |
| 26) C13(18) #2                     | 15.00    | 10403310m   | 92.99294  | ng     |
| 28) C13(28) #2                     | 17.77    | e 63820910  | 369.48148 | ng     |
| 29) C14(52) #2                     | 19.15    | e 43098950  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 19137275    | 85.39644  | ng     |
| 31) C14(66) #2                     | 22.35    | 24025212m   | 97.58497  | ng     |
| 32) C15(101) #2                    | 23.23    | 20190217m   | 138.86008 | ng     |
| 35) C15(118) #2                    | 26.34    | 45520149m   | 234.01928 | ng     |
| 36) C16(153) #2                    | 26.94    | 40937195    | 193.10009 | ng     |
| 37) C15(105) #2                    | 27.21    | 12686884    | 41.96877  | ng     |
| 38) C16(138) #2                    | 27.78    | 23917319    | 114.06744 | ng     |
| 39) C17(187) #2                    | 28.14    | 8109579m    | 35.34132  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7386.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0420\M7386.D\ECD2B.CH  
 Acq On : 11-1-2014 03:08:37 AM Operator: RR  
 Sample : M8372-P(2) Inst : INST. M  
 Misc : NBH14-0261 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:02 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:23:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 10616731m | 33.01037 | ng    |
| 41) | C17(180) #2  | 29.59 | 8885065m  | 30.86403 | ng    |
| 42) | C17(170) #2  | 30.22 | 6615555m  | 20.77843 | ng    |
| 43) | C18(195) #2  | 31.09 | 1137171m  | 2.85516  | ng    |
| 44) | C19(206) #2  | 32.18 | 1185696m  | 3.67008  | ng    |
| 45) | C110(209) #2 | 32.62 | 336089m   | 0.27598  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7387.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0420\M7387.D\ECD2B.CH  
 Acq On : 11-1-2014 03:53:03 AM Operator: RR  
 Sample : M8373-P(2) Inst : INST. M  
 Misc : NBH14-0265 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:00 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 2863330m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 4784807m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 12254187m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 26009159    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.41    | 7611463m    | 383.10559  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 100.85% |
| 11) s C16(152)                     | 20.49    | 8621661     | 369.71246  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 96.94%  |
| 27) s C13(34) #2                   | 16.48    | 35149855m   | 359.10270  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 94.53%  |
| 34) s C16(152) #2                  | 23.63    | 36389415    | 254.45092  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 66.72%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | 3335261     | 245.74343  | ng      |
| 3) C13(18)                         | 12.13    | e 8441700   | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 75233077  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 30642851  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | e 14131432  | BelowCal   | ng      |
| 8) C14(66)                         | 18.63    | e 17981285m | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 27897391  | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 33851042  | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 40229946  | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | 6361282m    | 165.20708  | ng      |
| 15) C16(138)                       | 24.55    | E 29998748m | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 4056851     | 109.95975  | ng      |
| 17) C16(128)                       | 25.64    | 6253775     | 154.84799  | ng      |
| 18) C17(180)                       | 27.17    | 5959847     | 136.14114  | ng      |
| 19) C17(170)                       | 27.97    | 4682112m    | 92.56769   | ng      |
| 20) C18(195)                       | 29.05    | 847172      | 16.27816   | ng      |
| 21) C19(206)                       | 30.31    | 900750m     | 18.23315   | ng      |
| 22) C110(209)                      | 30.91    | 249532m     | 5.10336    | ng      |
| 25) C12(8) #2                      | 13.11    | 14246291m   | 203.01441  | ng      |
| 26) C13(18) #2                     | 15.00    | e 38834522  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 194057707 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 134408805 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | e 61267441  | 522.15543  | ng      |
| 31) C14(66) #2                     | 22.36    | E 132308328 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 146792482 | 912.15720  | ng      |
| 35) C15(118) #2                    | 26.34    | E 143773283 | 1026.67800 | ng      |
| 36) C16(153) #2                    | 26.94    | e 110936188 | 624.82576  | ng      |
| 37) C15(105) #2                    | 27.21    | 42225369    | 170.19418  | ng      |
| 38) C16(138) #2                    | 27.79    | e 74698339  | 384.75692  | ng      |
| 39) C17(187) #2                    | 28.14    | 59822746    | 318.21124  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7387.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0420\M7387.D\ECD2B.CH  
 Acq On : 11-1-2014 03:53:03 AM Operator: RR  
 Sample : M8373-P(2) Inst : INST. M  
 Misc : NBH14-0265 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:07 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:00 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 32834761  | 127.26629 | ng    |
| 41) | C17(180) #2  | 29.59 | 29611142m | 127.30684 | ng    |
| 42) | C17(170) #2  | 30.22 | 19066978  | 75.71786  | ng    |
| 43) | C18(195) #2  | 31.09 | 3464572m  | 14.27713  | ng    |
| 44) | C19(206) #2  | 32.19 | 3052692m  | 14.03318  | ng    |
| 45) | C110(209) #2 | 32.62 | 783134m   | 3.55038   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7389.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0420\M7389.D\ECD2B.CH  
 Acq On : 11-1-2014 05:22:01 AM Operator: RR  
 Sample : M8383-P(2) Inst : INST. M  
 Misc : NBH14-0314 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 3793854m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 5941149m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 11199480m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.82    | 19518591m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.41    | 8853524m    | 309.93349  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 81.59%  |
| 11) s C16(152)                     | 20.50    | 9295277m    | 310.64198  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 81.45%  |
| 27) s C13(34) #2                   | 16.48    | 35360357m   | 417.33515  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 109.86% |
| 34) s C16(152) #2                  | 23.63    | 36993302    | 331.51041  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 86.92%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 5608506   | 377.26275  | ng      |
| 3) C13(18)                         | 12.13    | E 12372241  | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 128659537 | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 52619138  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 28773735  | BelowCal   | ng      |
| 8) C14(66)                         | 18.63    | E 79453465  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 61988347  | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 80657932m | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 110567283 | BelowCal   | ng      |
| 14) C15(105)                       | 23.49    | e 22803461m | BelowCal   | ng      |
| 15) C16(138)                       | 24.56    | E 88204361  | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 8678601m    | 198.39623  | ng      |
| 17) C16(128)                       | 25.65    | e 19253857m | 467.13232  | ng      |
| 18) C17(180)                       | 27.17    | e 15954196m | 309.12403  | ng      |
| 19) C17(170)                       | 27.98    | 12324264m   | 203.58106  | ng      |
| 20) C18(195)                       | 29.05    | 1982085     | 32.13950   | ng      |
| 21) C19(206)                       | 30.32    | 2248541m    | 38.16358   | ng      |
| 22) C110(209)                      | 30.92    | 658907m     | 12.59857   | ng      |
| 25) C12(8) #2                      | 13.11    | 22932168    | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | e 48157373  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 300922029 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 201423815 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | e 108734835 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 230869238 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.24    | E 285322029 | 1557.26331 | ng      |
| 35) C15(118) #2                    | 26.34    | E 306909098 | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.95    | E 225787963 | 1562.69258 | ng      |
| 37) C15(105) #2                    | 27.21    | e 120699916 | 578.84630  | ng      |
| 38) C16(138) #2                    | 27.79    | E 211198196 | 1092.94641 | ng      |
| 39) C17(187) #2                    | 28.15    | 30627791m   | 221.48996  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7389.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0420\M7389.D\ECD2B.CH  
 Acq On : 11-1-2014 05:22:01 AM Operator: RR  
 Sample : M8383-P(2) Inst : INST. M  
 Misc : NBH14-0314 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 77828849  | 377.18370 | ng    |
| 41) | C17(180) #2  | 29.59 | 65177890  | 348.72761 | ng    |
| 42) | C17(170) #2  | 30.22 | 43120687m | 219.55162 | ng    |
| 43) | C18(195) #2  | 31.09 | 6191578m  | 35.52174  | ng    |
| 44) | C19(206) #2  | 32.19 | 5648278m  | 35.97591  | ng    |
| 45) | C110(209) #2 | 32.63 | 2062177m  | 16.12487  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7390.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0420\M7390.D\ECD2B.CH  
 Acq On : 11-1-2014 06:06:32 AM Operator: RR  
 Sample : M8384-P(2) Inst : INST. M  
 Misc : NBH14-0318 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc Units    |
|------------------------------------|----------|-------------|---------------|
| <b>Internal Standards</b>          |          |             |               |
| 1) I C15(96)                       | 17.40    | 3341359m    | 95.00000 ng   |
| 10) I C16(161)                     | 23.21    | 5676223m    | 95.00000 ng   |
| 24) I C15(96) #2                   | 20.52    | 12907681    | 95.00000 ng   |
| 33) I C16(161) #2                  | 26.80    | 22544902m   | 95.00000 ng   |
| <b>System Monitoring Compounds</b> |          |             |               |
| 4) s C13(34)                       | 13.41    | 8993276m    | 391.83961 ng  |
| Spiked Amount                      | 379.8670 | Recovery    | = 103.15%     |
| 11) s C16(152)                     | 20.49    | 10203235    | 368.58952 ng  |
| Spiked Amount                      | 381.3865 | Recovery    | = 96.64%      |
| 27) s C13(34) #2                   | 16.48    | 41885875    | 437.20186 ng  |
| Spiked Amount                      | 379.8670 | Recovery    | = 115.09%     |
| 34) s C16(152) #2                  | 23.63    | 44114143    | 340.67257 ng  |
| Spiked Amount                      | 381.3865 | Recovery    | = 89.32%      |
| <b>Target Compounds</b>            |          |             |               |
| 2) C12(8)                          | 10.21    | e 4291438   | 286.57849 ng  |
| 3) C13(18)                         | 12.13    | E 9285640   | BelowCal ng   |
| 5) C13(28)                         | 14.20    | E 83756554  | BelowCal ng   |
| 6) C14(52)                         | 15.84    | E 37293466  | BelowCal ng   |
| 7) C14(44)                         | 16.71    | E 20428072  | BelowCal ng   |
| 8) C14(66)                         | 18.64    | E 49068795  | BelowCal ng   |
| 9) C15(101)                        | 19.73    | E 37014935  | BelowCal ng   |
| 12) C15(118)                       | 22.41    | E 74644782  | BelowCal ng   |
| 13) C16(153)                       | 23.45    | E 63269677  | BelowCal ng   |
| 14) C15(105)                       | 23.48    | 11418331m   | 283.10555 ng  |
| 15) C16(138)                       | 24.55    | E 50773303  | BelowCal ng   |
| 16) C17(187)                       | 25.31    | 5099254     | 116.99048 ng  |
| 17) C16(128)                       | 25.64    | 11924925    | 265.96649 ng  |
| 18) C17(180)                       | 27.17    | 9095825m    | 177.54351 ng  |
| 19) C17(170)                       | 27.97    | 7267141m    | 122.51714 ng  |
| 20) C18(195)                       | 29.05    | 1196625     | 19.68923 ng   |
| 21) C19(206)                       | 30.31    | 1114181m    | 19.07149 ng   |
| 22) C110(209)                      | 30.91    | 467658m     | 8.95612 ng    |
| 25) C12(8) #2                      | 13.11    | 20421955    | 312.00604 ng  |
| 26) C13(18) #2                     | 15.00    | e 41671150  | BelowCal ng   |
| 28) C13(28) #2                     | 17.77    | E 212118511 | BelowCal ng   |
| 29) C14(52) #2                     | 19.15    | E 164268287 | BelowCal ng   |
| 30) C14(44) #2                     | 19.96    | e 88674432  | BelowCal ng   |
| 31) C14(66) #2                     | 22.36    | E 158523124 | BelowCal ng   |
| 32) C15(101) #2                    | 23.23    | E 200465409 | 1102.73169 ng |
| 35) C15(118) #2                    | 26.34    | E 207777284 | 2010.69011 ng |
| 36) C16(153) #2                    | 26.94    | E 151171997 | 954.70113 ng  |
| 37) C15(105) #2                    | 27.21    | 82057210m   | 361.95976 ng  |
| 38) C16(138) #2                    | 27.79    | E 147726262 | 751.22982 ng  |
| 39) C17(187) #2                    | 28.14    | 20168160m   | 128.13915 ng  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7390.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0420\M7390.D\ECD2B.CH  
 Acq On : 11-1-2014 06:06:32 AM Operator: RR  
 Sample : M8384-P(2) Inst : INST. M  
 Misc : NBH14-0318 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 54709384m | 238.31001 | ng    |
| 41) | C17(180) #2  | 29.59 | 40794566m | 198.26354 | ng    |
| 42) | C17(170) #2  | 30.22 | 29671165m | 134.21713 | ng    |
| 43) | C18(195) #2  | 31.09 | 4330017m  | 21.11335  | ng    |
| 44) | C19(206) #2  | 32.19 | 3679262m  | 19.91550  | ng    |
| 45) | C110(209) #2 | 32.63 | 1641739m  | 10.67100  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7391.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0420\M7391.D\ECD2B.CH  
 Acq On : 11-1-2014 06:50:57 AM Operator: RR  
 Sample : M8385-P(2) Inst : INST. M  
 Misc : NBH14-0322 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.40    | 3888502m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 6079238m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 13172187m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 30967424m   | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 9075753     | 310.00311 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 81.61%  |
| 11) s C16(152)                     | 20.49    | 10643671    | 356.61515 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 93.50%  |
| 27) s C13(34) #2                   | 16.48    | 39703534m   | 387.29383 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 101.96% |
| 34) s C16(152) #2                  | 23.63    | 43526348    | 255.49103 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 66.99%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 2351561     | 106.02289 | ng      |
| 3) C13(18)                         | 12.13    | e 5082314m  | 217.17426 | ng      |
| 5) C13(28)                         | 14.20    | E 46011622  | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | E 20509309  | BelowCal  | ng      |
| 7) C14(44)                         | 16.71    | e 11250105  | 261.57302 | ng      |
| 8) C14(66)                         | 18.62    | e 10697970m | 204.96072 | ng      |
| 9) C15(101)                        | 19.72    | e 19584567  | 434.08671 | ng      |
| 12) C15(118)                       | 22.40    | E 24696982  | BelowCal  | ng      |
| 13) C16(153)                       | 23.44    | E 30125548  | BelowCal  | ng      |
| 14) C15(105)                       | 23.47    | 6579581m    | 129.59469 | ng      |
| 15) C16(138)                       | 24.54    | e 23412642  | 534.15846 | ng      |
| 16) C17(187)                       | 25.30    | 2905780     | 59.69466  | ng      |
| 17) C16(128)                       | 25.63    | 5392190     | 101.82069 | ng      |
| 18) C17(180)                       | 27.16    | 4517533m    | 79.30436  | ng      |
| 19) C17(170)                       | 27.97    | 3635649m    | 55.42292  | ng      |
| 20) C18(195)                       | 29.04    | 580215m     | 8.05212   | ng      |
| 21) C19(206)                       | 30.31    | 497945m     | 7.17128   | ng      |
| 22) C110(209)                      | 30.91    | 208419m     | 2.83144   | ng      |
| 25) C12(8) #2                      | 13.11    | 9812309m    | 118.80724 | ng      |
| 26) C13(18) #2                     | 15.00    | 24742257    | 345.03840 | ng      |
| 28) C13(28) #2                     | 17.77    | E 115355988 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 90057357  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 46286597    | 288.94193 | ng      |
| 31) C14(66) #2                     | 22.36    | e 87224130  | 606.42914 | ng      |
| 32) C15(101) #2                    | 23.23    | E 102837941 | 657.77265 | ng      |
| 35) C15(118) #2                    | 26.34    | e 96419171  | 537.12491 | ng      |
| 36) C16(153) #2                    | 26.94    | e 72569835  | 350.67749 | ng      |
| 37) C15(105) #2                    | 27.21    | 33520418    | 114.86631 | ng      |
| 38) C16(138) #2                    | 27.78    | 58793454    | 268.53589 | ng      |
| 39) C17(187) #2                    | 28.14    | 19983646m   | 92.54047  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7391.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0420\M7391.D\ECD2B.CH  
 Acq On : 11-1-2014 06:50:57 AM Operator: RR  
 Sample : M8385-P(2) Inst : INST. M  
 Misc : NBH14-0322 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 23824760  | 77.96287 | ng    |
| 41) | C17(180) #2  | 29.59 | 18495030m | 67.40972 | ng    |
| 42) | C17(170) #2  | 30.22 | 13458403  | 44.80292 | ng    |
| 43) | C18(195) #2  | 31.09 | 2144816m  | 6.80499  | ng    |
| 44) | C19(206) #2  | 32.18 | 1847474m  | 6.58710  | ng    |
| 45) | C110(209) #2 | 32.62 | 726748m   | 2.44048  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7392.D\ECD1A.CH Vial: 29  
 Signal #2 : I:\M\DATA\SM0420\M7392.D\ECD2B.CH  
 Acq On : 11-1-2014 07:35:29 AM Operator: RR  
 Sample : M8386-P(2) Inst : INST. M  
 Misc : NBH14-0326 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.39    | 3459587m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 5276256m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 12144629m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.80    | 21914347    | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 8787697m    | 354.25519  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 93.26%  |
| 11) s C16(152)                     | 20.49    | 9284830     | 358.88567  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 94.10%  |
| 27) s C13(34) #2                   | 16.48    | 38313329m   | 416.77212  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 109.72% |
| 34) s C16(152) #2                  | 23.63    | 39914513    | 320.38603  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 84.01%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 5757420   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 13482088  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 120620445 | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 54597211  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 26919113  | BelowCal   | ng      |
| 8) C14(66)                         | 18.64    | E 66445586  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 48191222  | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 59061242  | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 72501395  | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | 11321727m   | 311.75653  | ng      |
| 15) C16(138)                       | 24.54    | E 54488587  | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 7289489     | 186.56514  | ng      |
| 17) C16(128)                       | 25.64    | 10998503    | 263.50379  | ng      |
| 18) C17(180)                       | 27.17    | 11246145    | 240.64008  | ng      |
| 19) C17(170)                       | 27.97    | 8460403m    | 155.10551  | ng      |
| 20) C18(195)                       | 29.05    | 1457710     | 26.31785   | ng      |
| 21) C19(206)                       | 30.31    | 1532631m    | 28.92081   | ng      |
| 22) C110(209)                      | 30.91    | 480563m     | 10.06534   | ng      |
| 25) C12(8) #2                      | 13.11    | e 27424983  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 59641957  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 300286160 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 232914284 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 115359866 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 219328874 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 244971476 | 1326.67599 | ng      |
| 35) C15(118) #2                    | 26.34    | E 250393761 | 3052.12254 | ng      |
| 36) C16(153) #2                    | 26.94    | E 202447725 | 1278.75880 | ng      |
| 37) C15(105) #2                    | 27.21    | 71465806m   | 327.48747  | ng      |
| 38) C16(138) #2                    | 27.78    | E 133705395 | 710.82830  | ng      |
| 39) C17(187) #2                    | 28.14    | 34119896m   | 219.83897  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7392.D\ECD1A.CH Vial: 29  
 Signal #2 : I:\M\DATA\SM0420\M7392.D\ECD2B.CH  
 Acq On : 11-1-2014 07:35:29 AM Operator: RR  
 Sample : M8386-P(2) Inst : INST. M  
 Misc : NBH14-0326 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 52795576  | 236.69122 | ng    |
| 41) | C17(180) #2  | 29.59 | 50183673m | 247.09157 | ng    |
| 42) | C17(170) #2  | 30.22 | 35954344  | 165.79393 | ng    |
| 43) | C18(195) #2  | 31.09 | 5833841m  | 29.67068  | ng    |
| 44) | C19(206) #2  | 32.19 | 5148566m  | 29.07117  | ng    |
| 45) | C110(209) #2 | 32.63 | 1966579m  | 13.48360  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7393.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0420\M7393.D\ECD2B.CH  
 Acq On : 11-1-2014 08:19:54 AM Operator: RR  
 Sample : M8403-P(2) Inst : INST. M  
 Misc : NBH14-0165 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:40 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3790051   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7630537   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 15553799m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 36851139  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 9468772   | 344.73969 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 90.75% |
| 11) s C16(152)                     | 20.48    | 12826401m | 339.04519 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 88.90% |
| 27) s C13(34) #2                   | 16.48    | 45613637m | 371.26033 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 97.73% |
| 34) s C16(152) #2                  | 23.63    | 60318374  | 292.08107 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 76.58% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 351029    | 11.40070  | ng     |
| 3) C13(18)                         | 12.13    | 970981    | 30.34078  | ng     |
| 5) C13(28)                         | 14.19    | 3992526m  | 78.31135  | ng     |
| 6) C14(52)                         | 15.84    | 3522938   | 97.20400  | ng     |
| 7) C14(44)                         | 16.70    | 1703433   | 30.39697  | ng     |
| 8) C14(66)                         | 18.62    | 1629600m  | 25.27822  | ng     |
| 9) C15(101)                        | 19.72    | 2306846   | 37.85985  | ng     |
| 12) C15(118)                       | 22.39    | 2389547   | 40.73472  | ng     |
| 13) C16(153)                       | 23.43    | 2272120m  | 40.73468  | ng     |
| 14) C15(105)                       | 23.46    | 694520m   | 7.60836   | ng     |
| 15) C16(138)                       | 24.53    | 2414410   | 33.17987  | ng     |
| 16) C17(187)                       | 25.29    | 460936    | 5.33293   | ng     |
| 17) C16(128)                       | 25.63    | 498739m   | 6.53408   | ng     |
| 18) C17(180)                       | 27.16    | 508532m   | 5.25348   | ng     |
| 19) C17(170)                       | 27.96    | 391600m   | 3.19502   | ng     |
| 20) C18(195)                       | 29.04    | 79899     | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 70367m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.91    | 23825m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 1536405m  | 12.11807  | ng     |
| 26) C13(18) #2                     | 15.00    | 4450414m  | 34.27823  | ng     |
| 28) C13(28) #2                     | 17.76    | 17757957m | 79.57119  | ng     |
| 29) C14(52) #2                     | 19.15    | 16577360m | 134.48296 | ng     |
| 30) C14(44) #2                     | 19.96    | 8172028m  | 33.60773  | ng     |
| 31) C14(66) #2                     | 22.35    | 7197085m  | 26.25748  | ng     |
| 32) C15(101) #2                    | 23.23    | 5397811m  | 35.66540  | ng     |
| 35) C15(118) #2                    | 26.33    | 11529153  | 47.30863  | ng     |
| 36) C16(153) #2                    | 26.94    | 10272798m | 39.52186  | ng     |
| 37) C15(105) #2                    | 27.20    | 3047727   | 7.29863   | ng     |
| 38) C16(138) #2                    | 27.78    | 5841912   | 24.54496  | ng     |
| 39) C17(187) #2                    | 28.14    | 2595409   | 7.91248   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7393.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0420\M7393.D\ECD2B.CH  
 Acq On : 11-1-2014 08:19:54 AM Operator: RR  
 Sample : M8403-P(2) Inst : INST. M  
 Misc : NBH14-0165 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:40 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 2686969m | 5.67494  | ng    |
| 41) | C17(180) #2  | 29.59 | 2406764m | 5.89003  | ng    |
| 42) | C17(170) #2  | 30.22 | 1587006m | 3.16323  | ng    |
| 43) | C18(195) #2  | 31.09 | 394020   | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 257520m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 80213m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7394.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0420\M7394.D\ECD2B.CH  
 Acq On : 11-1-2014 09:04:28 AM Operator: RR  
 Sample : M8156-P-D(4) Inst : INST. M  
 Misc : NBH14-0017 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 3466074   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 7838020m  | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 16633640m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 41256166  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 398076m   | 15.13266  | ng    |
| 3) C13(18)                         | 12.13   | 1005902m  | 35.19805  | ng    |
| 5) C13(28)                         | 14.19   | 3924880m  | 84.82878  | ng    |
| 6) C14(52)                         | 15.84   | 3448121   | 105.26011 | ng    |
| 7) C14(44)                         | 16.70   | 1694298   | 33.41352  | ng    |
| 8) C14(66)                         | 18.62   | 1562946m  | 26.66929  | ng    |
| 9) C15(101)                        | 19.72   | 2392199   | 43.30738  | ng    |
| 12) C15(118)                       | 22.39   | 2490859   | 41.39747  | ng    |
| 13) C16(153)                       | 23.43   | 2349683m  | 41.02255  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 2270320   | 30.13788  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 1832076m  | 13.82434  | ng    |
| 26) C13(18) #2                     | 15.00   | 4844134m  | 35.00352  | ng    |
| 28) C13(28) #2                     | 17.77   | 20943764  | 88.51383  | ng    |
| 29) C14(52) #2                     | 19.15   | 17383409m | 131.43850 | ng    |
| 30) C14(44) #2                     | 19.96   | 8547944m  | 32.81405  | ng    |
| 31) C14(66) #2                     | 22.35   | 6479783m  | 21.73451  | ng    |
| 32) C15(101) #2                    | 23.23   | 7033859m  | 44.17954  | ng    |
| 35) C15(118) #2                    | 26.33   | 12432910m | 45.42752  | ng    |
| 36) C16(153) #2                    | 26.94   | 10932104  | 37.37983  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 5980500   | 22.38503  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7394.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0420\M7394.D\ECD2B.CH  
 Acq On : 11-1-2014 09:04:28 AM Operator: RR  
 Sample : M8156-P-D(4) Inst : INST. M  
 Misc : NBH14-0017 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7395.D\ECD1A.CH Vial: 32  
 Signal #2 : I:\M\DATA\SM0420\M7395.D\ECD2B.CH  
 Acq On : 11-1-2014 09:48:55 AM Operator: RR  
 Sample : M8158-P-D(4) Inst : INST. M  
 Misc : NBH14-0025 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response | Conc     | Units |
|------------------------------------|---------|----------|----------|-------|
| <b>Internal Standards</b>          |         |          |          |       |
| 1) I C15(96)                       | 17.40   | 3279599  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7615896m | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 16468943 | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 40837680 | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |          |          |       |
| 4) s C13(34)                       | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery | =        | 0.00% |
| <b>Target Compounds</b>            |         |          |          |       |
| 2) C12(8)                          | 0.00    | 0d       | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d       | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 732322m  | 13.89483 | ng    |
| 6) C14(52)                         | 15.84   | 786438m  | 18.91476 | ng    |
| 7) C14(44)                         | 0.00    | 0d       | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d       | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d       | N.D.     | ng    |
| 12) C15(118)                       | 0.00    | 0d       | N.D.     | ng    |
| 13) C16(153)                       | 0.00    | 0d       | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d       | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d       | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d       | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d       | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d       | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d       | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d       | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d       | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d       | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d       | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 4321524  | 16.00448 | ng    |
| 29) C14(52) #2                     | 19.15   | 3995840m | 25.83040 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 35) C15(118) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 36) C16(153) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d       | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7395.D\ECD1A.CH Vial: 32  
 Signal #2 : I:\M\DATA\SM0420\M7395.D\ECD2B.CH  
 Acq On : 11-1-2014 09:48:55 AM Operator: RR  
 Sample : M8158-P-D(4) Inst : INST. M  
 Misc : NBH14-0025 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7396.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0420\M7396.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:33 am Operator: RR  
 Sample : M8163-P-D(4) Inst : INST. M  
 Misc : NBH14-0045 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:56 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 3302286   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 7591863m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15692876m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 38261325  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 10.21   | 250121    | 8.58608  | ng    |
| 3) C13(18)                         | 12.13   | 705295    | 24.32753 | ng    |
| 5) C13(28)                         | 14.20   | 2421837m  | 52.63494 | ng    |
| 6) C14(52)                         | 15.83   | 2259941m  | 68.04891 | ng    |
| 7) C14(44)                         | 16.70   | 1101779   | 21.61129 | ng    |
| 8) C14(66)                         | 18.62   | 943560m   | 15.78763 | ng    |
| 9) C15(101)                        | 19.72   | 1466852   | 26.98415 | ng    |
| 12) C15(118)                       | 22.39   | 1358078m  | 21.76090 | ng    |
| 13) C16(153)                       | 23.43   | 1296720m  | 22.73780 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1300329m  | 16.76726 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 13.10   | 1147980m  | 8.28814  | ng    |
| 26) C13(18) #2                     | 14.99   | 3427738m  | 24.72569 | ng    |
| 28) C13(28) #2                     | 17.76   | 12587574m | 54.34292 | ng    |
| 29) C14(52) #2                     | 19.15   | 11120358m | 84.52920 | ng    |
| 30) C14(44) #2                     | 19.96   | 5338062m  | 20.94600 | ng    |
| 31) C14(66) #2                     | 22.35   | 4382459m  | 14.96104 | ng    |
| 32) C15(101) #2                    | 23.23   | 4147181m  | 26.27694 | ng    |
| 35) C15(118) #2                    | 26.33   | 6961040m  | 25.94501 | ng    |
| 36) C16(153) #2                    | 26.94   | 6252193   | 21.56665 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 3349531   | 13.18666 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7396.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0420\M7396.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:33 am Operator: RR  
 Sample : M8163-P-D(4) Inst : INST. M  
 Misc : NBH14-0045 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:24:56 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7397.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0420\M7397.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:17 am Operator: RR  
 Sample : M8164-P-D(4) Inst : INST. M  
 Misc : NBH14-0049 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 3315341   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 7656844   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15673249m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 38959030  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 627918    | 27.85802  | ng    |
| 3) C13(18)                         | 12.13   | 1626606   | 64.92447  | ng    |
| 5) C13(28)                         | 14.20   | 5899526m  | 141.46927 | ng    |
| 6) C14(52)                         | 15.84   | 5201763   | 182.77725 | ng    |
| 7) C14(44)                         | 16.70   | 2699986   | 58.96395  | ng    |
| 8) C14(66)                         | 18.62   | 2287357m  | 42.75706  | ng    |
| 9) C15(101)                        | 19.72   | 3454811   | 67.28026  | ng    |
| 12) C15(118)                       | 22.39   | 3281293   | 57.38750  | ng    |
| 13) C16(153)                       | 23.43   | 3415255m  | 62.14870  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3077837m  | 42.95520  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 2868830m  | 24.89270  | ng    |
| 26) C13(18) #2                     | 14.99   | 7948817m  | 66.63682  | ng    |
| 28) C13(28) #2                     | 17.76   | 32085098  | 151.92479 | ng    |
| 29) C14(52) #2                     | 19.15   | 25304781m | 223.86231 | ng    |
| 30) C14(44) #2                     | 19.96   | 14459829  | 61.60457  | ng    |
| 31) C14(66) #2                     | 22.35   | 10668561m | 39.87734  | ng    |
| 32) C15(101) #2                    | 23.23   | 9181474m  | 62.20421  | ng    |
| 35) C15(118) #2                    | 26.33   | 16762894m | 66.57009  | ng    |
| 36) C16(153) #2                    | 26.94   | 15386983  | 57.54182  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 7831657   | 31.27748  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7397.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0420\M7397.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:17 am Operator: RR  
 Sample : M8164-P-D(4) Inst : INST. M  
 Misc : NBH14-0049 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7398.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0420\M7398.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:02 pm Operator: RR  
 Sample : M8165-P-D(4) Inst : INST. M  
 Misc : NBH14-0053 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:06 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3372956   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7799583   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 16231611m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 39829654  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 12.13   | 627226    | 20.47077 | ng    |
| 5) C13(28)                         | 14.19   | 1959601m  | 40.79607 | ng    |
| 6) C14(52)                         | 15.84   | 1832482   | 51.97819 | ng    |
| 7) C14(44)                         | 16.70   | 749532    | 13.27599 | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.72   | 1126308   | 19.77586 | ng    |
| 12) C15(118)                       | 22.39   | 1136033   | 17.12867 | ng    |
| 13) C16(153)                       | 23.43   | 1200874m  | 20.37373 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 15.00   | 3107973m  | 20.96655 | ng    |
| 28) C13(28) #2                     | 17.76   | 10760467m | 44.25939 | ng    |
| 29) C14(52) #2                     | 19.15   | 9034621m  | 64.67538 | ng    |
| 30) C14(44) #2                     | 19.96   | 3874070m  | 14.10895 | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 3207697m  | 18.64266 | ng    |
| 35) C15(118) #2                    | 26.33   | 5893227m  | 20.42083 | ng    |
| 36) C16(153) #2                    | 26.94   | 5620340   | 18.08853 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7398.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0420\M7398.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:02 pm Operator: RR  
 Sample : M8165-P-D(4) Inst : INST. M  
 Misc : NBH14-0053 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:06 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:24:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7400.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0420\M7400.D\ECD2B.CH  
 Acq On : 11-1-2014 01:31:35 PM Operator: RR  
 Sample : M8166-P-D(4) Inst : INST. M  
 Misc : NBH14-0061 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3157509   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6862045   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 17039075m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 41980364  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 12.13   | 332158m   | 9.36953  | ng    |
| 5) C13(28)                         | 14.20   | 1015803m  | 21.17943 | ng    |
| 6) C14(52)                         | 15.84   | 1154519   | 32.39023 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 0.00    | 0d        | N.D.     | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 15.00   | 1808240m  | 9.21674  | ng    |
| 28) C13(28) #2                     | 17.77   | 7514607   | 28.47015 | ng    |
| 29) C14(52) #2                     | 19.15   | 6238375m  | 40.78801 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7400.D\ECD1A.CH Vial: 37  
 Signal #2 : I:\M\DATA\SM0420\M7400.D\ECD2B.CH  
 Acq On : 11-1-2014 01:31:35 PM Operator: RR  
 Sample : M8166-P-D(4) Inst : INST. M  
 Misc : NBH14-0061 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7401.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0420\M7401.D\ECD2B.CH  
 Acq On : 11-1-2014 02:16:00 PM Operator: RR  
 Sample : M8166DUP-P-D(4) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0061 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3336950   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7597941   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15884478m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 38768920  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 910655m   | 17.55581 | ng    |
| 6) C14(52)                         | 15.84   | 1097501   | 28.42220 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 0.00    | 0d        | N.D.     | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 5803633m  | 23.16434 | ng    |
| 29) C14(52) #2                     | 19.15   | 5344163m  | 37.15669 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7401.D\ECD1A.CH Vial: 38  
 Signal #2 : I:\M\DATA\SM0420\M7401.D\ECD2B.CH  
 Acq On : 11-1-2014 02:16:00 PM Operator: RR  
 Sample : M8166DUP-P-D(4) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0061 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7402.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0420\M7402.D\ECD2B.CH  
 Acq On : 11-1-2014 03:00:31 PM Operator: RR  
 Sample : M8347-P-D(4) Inst : INST. M  
 Misc : NBH14-0057 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:27 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3090849   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6842783   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15749820m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 38290841  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 12.13   | 355346    | 10.69909 | ng    |
| 5) C13(28)                         | 14.20   | 1127623m  | 24.39816 | ng    |
| 6) C14(52)                         | 15.84   | 1098154   | 31.26981 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 0.00    | 0d        | N.D.     | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 14.99   | 1866459m  | 10.90711 | ng    |
| 28) C13(28) #2                     | 17.77   | 6247087   | 25.35335 | ng    |
| 29) C14(52) #2                     | 19.15   | 5722471m  | 40.44616 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7402.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0420\M7402.D\ECD2B.CH  
 Acq On : 11-1-2014 03:00:31 PM Operator: RR  
 Sample : M8347-P-D(4) Inst : INST. M  
 Misc : NBH14-0057 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:27 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7404.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0420\M7404.D\ECD2B.CH  
 Acq On : 11-1-2014 04:29:29 PM Operator: RR  
 Sample : M8355-P-D(4) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response    | Conc      | Units |
|------------------------------------|---------|-------------|-----------|-------|
| <b>Internal Standards</b>          |         |             |           |       |
| 1) I C15(96)                       | 17.39   | 3379773m    | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 8172873m    | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15727574m   | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 37236443    | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |             |           |       |
| 4) s C13(34)                       | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery    | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d          | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery    | =         | 0.00% |
| <b>Target Compounds</b>            |         |             |           |       |
| 2) C12(8)                          | 10.21   | E 11906489  | BelowCal  | ng    |
| 3) C13(18)                         | 12.13   | E 29461279  | BelowCal  | ng    |
| 5) C13(28)                         | 14.20   | E 99429842  | BelowCal  | ng    |
| 6) C14(52)                         | 15.84   | E 51980677  | BelowCal  | ng    |
| 7) C14(44)                         | 16.70   | e 11037997  | 311.16127 | ng    |
| 8) C14(66)                         | 18.65   | 5591594m    | 112.53944 | ng    |
| 9) C15(101)                        | 19.72   | 6552761     | 132.18182 | ng    |
| 12) C15(118)                       | 22.36   | 4807117m    | 80.99402  | ng    |
| 13) C16(153)                       | 23.42   | 7010057m    | 124.07569 | ng    |
| 14) C15(105)                       | 0.00    | 0d          | N.D.      | ng    |
| 15) C16(138)                       | 24.52   | 6031966m    | 82.10912  | ng    |
| 16) C17(187)                       | 25.29   | 2365909     | 34.86025  | ng    |
| 17) C16(128)                       | 25.63   | 709408      | 8.89986   | ng    |
| 18) C17(180)                       | 27.16   | 1639823     | 19.70965  | ng    |
| 19) C17(170)                       | 27.97   | 1194004m    | 12.15559  | ng    |
| 20) C18(195)                       | 0.00    | 0d          | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d          | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d          | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | E 62809269  | BelowCal  | ng    |
| 26) C13(18) #2                     | 15.00   | E 136891176 | BelowCal  | ng    |
| 28) C13(28) #2                     | 17.77   | E 281492387 | BelowCal  | ng    |
| 29) C14(52) #2                     | 19.15   | E 253176866 | BelowCal  | ng    |
| 30) C14(44) #2                     | 19.96   | 56680277    | 299.15326 | ng    |
| 31) C14(66) #2                     | 22.32   | 27697915m   | 110.96748 | ng    |
| 32) C15(101) #2                    | 23.23   | 20752281m   | 139.28841 | ng    |
| 35) C15(118) #2                    | 26.34   | 19842602    | 83.48407  | ng    |
| 36) C16(153) #2                    | 26.94   | 38281443    | 154.62306 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d          | N.D.      | ng    |
| 38) C16(138) #2                    | 27.83   | 21688062m   | 89.62694  | ng    |
| 39) C17(187) #2                    | 28.14   | 11239179    | 42.41987  | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7404.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0420\M7404.D\ECD2B.CH  
 Acq On : 11-1-2014 04:29:29 PM Operator: RR  
 Sample : M8355-P-D(4) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3718677m | 8.53469  | ng    |
| 41) | C17(180) #2  | 29.59 | 8401441m | 24.72940 | ng    |
| 42) | C17(170) #2  | 30.22 | 4838769m | 12.51478 | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7405.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0420\M7405.D\ECD2B.CH  
 Acq On : 11-1-2014 05:13:56 PM Operator: RR  
 Sample : M8358-P-D(4) Inst : INST. M  
 Misc : NBH14-0215 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:44 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 3343615   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 7623060   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 16269025m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 40534216  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 422686    | 17.08558  | ng    |
| 3) C13(18)                         | 12.13   | 1055795   | 38.87997  | ng    |
| 5) C13(28)                         | 14.20   | 4466208m  | 101.98350 | ng    |
| 6) C14(52)                         | 15.84   | 4422946   | 147.90132 | ng    |
| 7) C14(44)                         | 16.70   | 2078074   | 43.69229  | ng    |
| 8) C14(66)                         | 18.63   | 1658071m  | 29.66413  | ng    |
| 9) C15(101)                        | 19.71   | 2223326   | 41.61731  | ng    |
| 12) C15(118)                       | 22.39   | 1927106   | 32.15353  | ng    |
| 13) C16(153)                       | 23.42   | 2676579m  | 48.38914  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.52   | 2500786m  | 34.50551  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.10   | 2047974m  | 16.19608  | ng    |
| 26) C13(18) #2                     | 14.99   | 5289882m  | 39.85672  | ng    |
| 28) C13(28) #2                     | 17.76   | 23422341m | 102.50426 | ng    |
| 29) C14(52) #2                     | 19.15   | 23291726m | 191.90736 | ng    |
| 30) C14(44) #2                     | 19.96   | 10787539m | 43.17623  | ng    |
| 31) C14(66) #2                     | 22.33   | 7946695m  | 27.85408  | ng    |
| 32) C15(101) #2                    | 23.23   | 6078439m  | 38.65908  | ng    |
| 35) C15(118) #2                    | 26.34   | 11381075m | 42.06277  | ng    |
| 36) C16(153) #2                    | 26.94   | 12642817  | 44.66823  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 5981782   | 22.80151  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7405.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0420\M7405.D\ECD2B.CH  
 Acq On : 11-1-2014 05:13:56 PM Operator: RR  
 Sample : M8358-P-D(4) Inst : INST. M  
 Misc : NBH14-0215 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:44 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7406.D\ECD1A.CH Vial: 43  
 Signal #2 : I:\M\DATA\SM0420\M7406.D\ECD2B.CH  
 Acq On : 11-1-2014 05:58:26 PM Operator: RR  
 Sample : M8359-P-D(4) Inst : INST. M  
 Misc : NBH14-0219 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 3679872   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 8593347m  | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15794122m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 38752350  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 465500m   | 17.09962  | ng    |
| 3) C13(18)                         | 12.13   | 1116395   | 37.09147  | ng    |
| 5) C13(28)                         | 14.20   | 4898998m  | 101.60258 | ng    |
| 6) C14(52)                         | 15.84   | 4692357   | 141.45732 | ng    |
| 7) C14(44)                         | 16.70   | 2155724   | 40.90982  | ng    |
| 8) C14(66)                         | 18.63   | 1960767m  | 32.13561  | ng    |
| 9) C15(101)                        | 19.72   | 2491707   | 42.43219  | ng    |
| 12) C15(118)                       | 22.39   | 2295318   | 34.17947  | ng    |
| 13) C16(153)                       | 23.43   | 2996268m  | 48.03738  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 2778852m  | 33.97207  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 2060995m  | 16.89254  | ng    |
| 26) C13(18) #2                     | 14.99   | 5151056m  | 39.99853  | ng    |
| 28) C13(28) #2                     | 17.76   | 22792933m | 102.77354 | ng    |
| 29) C14(52) #2                     | 19.15   | 21591196m | 181.19444 | ng    |
| 30) C14(44) #2                     | 19.96   | 9982571m  | 41.00743  | ng    |
| 31) C14(66) #2                     | 22.33   | 7198079m  | 25.82507  | ng    |
| 32) C15(101) #2                    | 23.23   | 6919102m  | 45.87771  | ng    |
| 35) C15(118) #2                    | 26.33   | 11257723m | 43.65263  | ng    |
| 36) C16(153) #2                    | 26.94   | 12254149  | 45.33748  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 5624136   | 22.41213  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7406.D\ECD1A.CH Vial: 43  
 Signal #2 : I:\M\DATA\SM0420\M7406.D\ECD2B.CH  
 Acq On : 11-1-2014 05:58:26 PM Operator: RR  
 Sample : M8359-P-D(4) Inst : INST. M  
 Misc : NBH14-0219 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:25:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7409.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0420\M7409.D\ECD2B.CH  
 Acq On : 11-1-2014 08:11:45 PM Operator: RR  
 Sample : M8372-P-D(4) Inst : INST. M  
 Misc : NBH14-0261 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 3236758   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 7104180m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 16613388m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 39567262m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 926981m   | 18.55528 | ng    |
| 6) C14(52)                         | 15.84   | 658453    | 15.07860 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 0.00    | 0d        | N.D.     | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 4653287m  | 17.22960 | ng    |
| 29) C14(52) #2                     | 19.15   | 4051933   | 25.98187 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7409.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0420\M7409.D\ECD2B.CH  
 Acq On : 11-1-2014 08:11:45 PM Operator: RR  
 Sample : M8372-P-D(4) Inst : INST. M  
 Misc : NBH14-0261 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:25:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7411.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0420\M7411.D\ECD2B.CH  
 Acq On : 11-1-2014 09:40:38 PM Operator: RR  
 Sample : M8373-P-D(4) Inst : INST. M  
 Misc : NBH14-0265 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:16 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3271043   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7327054   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15708846m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 39087783  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 12.12   | 710964    | 24.85686 | ng    |
| 5) C13(28)                         | 14.20   | 2880332m  | 64.29938 | ng    |
| 6) C14(52)                         | 15.83   | 2223015m  | 67.49962 | ng    |
| 7) C14(44)                         | 16.70   | 1061301m  | 20.91966 | ng    |
| 8) C14(66)                         | 18.62   | 1508732m  | 27.35484 | ng    |
| 9) C15(101)                        | 19.72   | 2160939   | 41.32830 | ng    |
| 12) C15(118)                       | 22.39   | 2260999   | 40.08144 | ng    |
| 13) C16(153)                       | 23.43   | 2297304m  | 42.99160 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 2198401m  | 31.31748 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 14.99   | 3335072m  | 23.86976 | ng    |
| 28) C13(28) #2                     | 17.76   | 15023084m | 65.68676 | ng    |
| 29) C14(52) #2                     | 19.15   | 11508536m | 87.73238 | ng    |
| 30) C14(44) #2                     | 19.96   | 5475156m  | 21.51375 | ng    |
| 31) C14(66) #2                     | 22.35   | 7046606m  | 25.38107 | ng    |
| 32) C15(101) #2                    | 23.23   | 6969326m  | 46.49931 | ng    |
| 35) C15(118) #2                    | 26.34   | 11660968m | 44.93180 | ng    |
| 36) C16(153) #2                    | 26.94   | 9430390m  | 33.69162 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 6321706m  | 25.05425 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7411.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0420\M7411.D\ECD2B.CH  
 Acq On : 11-1-2014 09:40:38 PM Operator: RR  
 Sample : M8373-P-D(4) Inst : INST. M  
 Misc : NBH14-0265 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:16 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7412.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0420\M7412.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:25 pm Operator: RR  
 Sample : M8383-P-D(4) Inst : INST. M  
 Misc : NBH14-0314 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 3422873   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 8205035   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15858214m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 36778575m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 443662    | 17.62736  | ng    |
| 3) C13(18)                         | 12.13   | 969628    | 34.20382  | ng    |
| 5) C13(28)                         | 14.20   | 5125006m  | 116.01200 | ng    |
| 6) C14(52)                         | 15.84   | 3659468   | 114.59031 | ng    |
| 7) C14(44)                         | 16.70   | 2052801   | 41.99313  | ng    |
| 8) C14(66)                         | 18.61   | 3065997m  | 56.95915  | ng    |
| 9) C15(101)                        | 19.72   | 4294659   | 82.14695  | ng    |
| 12) C15(118)                       | 22.40   | 5511759   | 93.63321  | ng    |
| 13) C16(153)                       | 23.43   | 4675037m  | 80.36475  | ng    |
| 14) C15(105)                       | 23.45   | 2301465m  | 28.93749  | ng    |
| 15) C16(138)                       | 24.54   | 5622490   | 75.87535  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 25.63   | 1401226   | 18.22325  | ng    |
| 18) C17(180)                       | 27.16   | 1036749m  | 11.68278  | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 1934686m  | 15.61006  | ng    |
| 26) C13(18) #2                     | 14.99   | 4554716m  | 34.43256  | ng    |
| 28) C13(28) #2                     | 17.76   | 24120557m | 108.90336 | ng    |
| 29) C14(52) #2                     | 19.15   | 18067929m | 145.44477 | ng    |
| 30) C14(44) #2                     | 19.96   | 9934585m  | 40.61813  | ng    |
| 31) C14(66) #2                     | 22.36   | 14645466m | 55.31823  | ng    |
| 32) C15(101) #2                    | 23.23   | 12373774m | 83.25956  | ng    |
| 35) C15(118) #2                    | 26.34   | 25286993  | 109.12280 | ng    |
| 36) C16(153) #2                    | 26.94   | 19267610  | 77.46263  | ng    |
| 37) C15(105) #2                    | 27.20   | 9546537   | 26.88015  | ng    |
| 38) C16(138) #2                    | 27.78   | 17162307  | 72.28715  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7412.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0420\M7412.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:25 pm Operator: RR  
 Sample : M8383-P-D(4) Inst : INST. M  
 Misc : NBH14-0314 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 6535983  | 16.76512 | ng    |
| 41) | C17(180) #2  | 29.59 | 4892941m | 13.88176 | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7413.D\ECD1A.CH Vial: 50  
 Signal #2 : I:\M\DATA\SM0420\M7413.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:09 pm Operator: RR  
 Sample : M8384-P-D(4) Inst : INST. M  
 Misc : NBH14-0318 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 3468014   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 8027854   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15852208m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 36940889m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 358007    | 13.17879  | ng    |
| 3) C13(18)                         | 12.13   | 790530    | 26.34678  | ng    |
| 5) C13(28)                         | 14.20   | 3132595m  | 66.12195  | ng    |
| 6) C14(52)                         | 15.84   | 2792946   | 82.23071  | ng    |
| 7) C14(44)                         | 16.70   | 1569036   | 30.62491  | ng    |
| 8) C14(66)                         | 18.63   | 1914689m  | 33.42824  | ng    |
| 9) C15(101)                        | 19.72   | 2846068   | 52.10867  | ng    |
| 12) C15(118)                       | 22.39   | 3486602   | 58.22892  | ng    |
| 13) C16(153)                       | 23.43   | 2940486m  | 50.57585  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.54   | 3565866m  | 47.80638  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 1565654m  | 12.11592  | ng    |
| 26) C13(18) #2                     | 14.99   | 3657037m  | 26.44517  | ng    |
| 28) C13(28) #2                     | 17.76   | 16162530m | 70.39149  | ng    |
| 29) C14(52) #2                     | 19.15   | 13551378m | 104.37413 | ng    |
| 30) C14(44) #2                     | 19.96   | 7521219m  | 30.10162  | ng    |
| 31) C14(66) #2                     | 22.35   | 8996506m  | 32.77870  | ng    |
| 32) C15(101) #2                    | 23.23   | 8034408m  | 53.51297  | ng    |
| 35) C15(118) #2                    | 26.34   | 15581565m | 65.17689  | ng    |
| 36) C16(153) #2                    | 26.94   | 12098894  | 47.09137  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 11206722  | 47.29266  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7413.D\ECD1A.CH Vial: 50  
 Signal #2 : I:\M\DATA\SM0420\M7413.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:09 pm Operator: RR  
 Sample : M8384-P-D(4) Inst : INST. M  
 Misc : NBH14-0318 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7414.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0420\M7414.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:54 pm Operator: RR  
 Sample : M8385-P-D(4) Inst : INST. M  
 Misc : NBH14-0322 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 3195384   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7156403   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 16476175m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 41396974  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 12.13   | 399112m   | 12.05478 | ng    |
| 5) C13(28)                         | 14.20   | 1599982m  | 34.65526 | ng    |
| 6) C14(52)                         | 15.83   | 1381321m  | 39.65817 | ng    |
| 7) C14(44)                         | 16.70   | 813732    | 15.69115 | ng    |
| 8) C14(66)                         | 18.62   | 1013662m  | 17.84795 | ng    |
| 9) C15(101)                        | 19.72   | 1421218   | 27.02218 | ng    |
| 12) C15(118)                       | 22.39   | 1635687   | 28.73181 | ng    |
| 13) C16(153)                       | 23.43   | 1281079m  | 23.89210 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1521031m  | 21.41203 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 14.99   | 2052779m  | 11.73936 | ng    |
| 28) C13(28) #2                     | 17.76   | 9021089m  | 36.00490 | ng    |
| 29) C14(52) #2                     | 19.15   | 7620903m  | 52.74943 | ng    |
| 30) C14(44) #2                     | 19.96   | 4199278m  | 15.19544 | ng    |
| 31) C14(66) #2                     | 22.35   | 4763811m  | 15.56495 | ng    |
| 32) C15(101) #2                    | 23.23   | 4032199m  | 24.04547 | ng    |
| 35) C15(118) #2                    | 26.34   | 8850341   | 31.13248 | ng    |
| 36) C16(153) #2                    | 26.94   | 6698919m  | 21.31932 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 5274843m  | 19.58510 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0420\M7414.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0420\M7414.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:54 pm Operator: RR  
 Sample : M8385-P-D(4) Inst : INST. M  
 Misc : NBH14-0322 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7415.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0420\M7415.D\ECD2B.CH  
 Acq On : 02 Nov 2014 12:38 am Operator: RR  
 Sample : M8386-P-D(4) Inst : INST. M  
 Misc : NBH14-0326 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 3347894   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22   | 7813756   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15973481m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 40415026  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 444462    | 18.15977  | ng    |
| 3) C13(18)                         | 12.13   | 1029273   | 37.67700  | ng    |
| 5) C13(28)                         | 14.20   | 4009465m  | 90.27303  | ng    |
| 6) C14(52)                         | 15.84   | 3575715   | 114.45431 | ng    |
| 7) C14(44)                         | 16.70   | 1829151   | 37.84890  | ng    |
| 8) C14(66)                         | 18.62   | 2279305m  | 42.13580  | ng    |
| 9) C15(101)                        | 19.72   | 3300286   | 63.39404  | ng    |
| 12) C15(118)                       | 22.39   | 3697502   | 63.92344  | ng    |
| 13) C16(153)                       | 23.43   | 3533072m  | 63.04224  | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 24.53   | 3560766   | 49.13327  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 1969583m  | 15.80685  | ng    |
| 26) C13(18) #2                     | 14.99   | 4932574m  | 37.51220  | ng    |
| 28) C13(28) #2                     | 17.76   | 21752519m | 96.43243  | ng    |
| 29) C14(52) #2                     | 19.15   | 18084921m | 144.36621 | ng    |
| 30) C14(44) #2                     | 19.96   | 9239396m  | 37.27620  | ng    |
| 31) C14(66) #2                     | 22.35   | 12054619m | 44.55082  | ng    |
| 32) C15(101) #2                    | 23.23   | 9905602m  | 65.95567  | ng    |
| 35) C15(118) #2                    | 26.34   | 18729846  | 72.02905  | ng    |
| 36) C16(153) #2                    | 26.94   | 15596112m | 56.13991  | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 27.78   | 10015500  | 38.63416  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7415.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0420\M7415.D\ECD2B.CH  
 Acq On : 02 Nov 2014 12:38 am Operator: RR  
 Sample : M8386-P-D(4) Inst : INST. M  
 Misc : NBH14-0326 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:26:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:26:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7427.D\ECD1A.CH Vial: 64  
 Signal #2 : I:\M\DATA\SM0420\M7427.D\ECD2B.CH  
 Acq On : 11-2-2014 09:36:30 AM Operator: RR  
 Sample : M8355-P-D(5) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:27:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:27:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc      | Units |
|------------------------------------|--------|-----------|-----------|-------|
| <b>Internal Standards</b>          |        |           |           |       |
| 1) I C15(96)                       | 17.40  | 3438092   | 100.00000 | ng    |
| 10) I C16(161)                     | 23.22  | 8008160   | 100.00000 | ng    |
| 24) I C15(96) #2                   | 20.52  | 16120840m | 100.00000 | ng    |
| 33) I C16(161) #2                  | 26.79  | 39272119  | 100.00000 | ng    |
| <b>System Monitoring Compounds</b> |        |           |           |       |
| 4) s C13(34)                       | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0000 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00   | 0d        | N.D.      | ng    |
| Spiked Amount                      | 1.0040 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |        |           |           |       |
| 2) C12(8)                          | 10.21  | 874922    | 41.31398  | ng    |
| 3) C13(18)                         | 12.13  | 2207584   | 93.50797  | ng    |
| 5) C13(28)                         | 14.20  | 4027245m  | 92.71168  | ng    |
| 6) C14(52)                         | 15.84  | 3634994   | 119.04223 | ng    |
| 7) C14(44)                         | 16.70  | 787535    | 14.51020  | ng    |
| 8) C14(66)                         | 0.00   | 0d        | N.D.      | ng    |
| 9) C15(101)                        | 0.00   | 0d        | N.D.      | ng    |
| 12) C15(118)                       | 0.00   | 0d        | N.D.      | ng    |
| 13) C16(153)                       | 0.00   | 0d        | N.D.      | ng    |
| 14) C15(105)                       | 0.00   | 0d        | N.D.      | ng    |
| 15) C16(138)                       | 0.00   | 0d        | N.D.      | ng    |
| 16) C17(187)                       | 0.00   | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00   | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00   | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00   | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00   | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00   | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00   | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11  | 4454237m  | 41.44860  | ng    |
| 26) C13(18) #2                     | 15.00  | 10876536m | 97.38531  | ng    |
| 28) C13(28) #2                     | 17.77  | 20132744  | 92.34515  | ng    |
| 29) C14(52) #2                     | 19.15  | 18241394m | 151.86258 | ng    |
| 30) C14(44) #2                     | 19.96  | 4075771m  | 15.85080  | ng    |
| 31) C14(66) #2                     | 0.00   | 0d        | N.D.      | ng    |
| 32) C15(101) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 35) C15(118) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 36) C16(153) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 37) C15(105) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 38) C16(138) #2                    | 0.00   | 0d        | N.D.      | ng    |
| 39) C17(187) #2                    | 0.00   | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7427.D\ECD1A.CH Vial: 64  
 Signal #2 : I:\M\DATA\SM0420\M7427.D\ECD2B.CH  
 Acq On : 11-2-2014 09:36:30 AM Operator: RR  
 Sample : M8355-P-D(5) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 18 13:27:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Nov 18 13:27:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7367.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0420\M7367.D\ECD2B.CH  
 Acq On : 10-31-2014 01:03:20 PM Operator: RR  
 Sample : CD582PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:38:30 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc      | Units |
|--------------------|-------|----------|-----------|-------|
| Internal Standards |       |          |           |       |
| 1) I C15(96)       | 17.39 | 3044845  | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15557332 | 100.00000 | ng    |
| Target Compounds   |       |          |           |       |
| 2) C15(101)        | 0.00  | 0d       | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d       | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7367.D MM0417F.M Mon Dec 08 07:53:46 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7368.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0420\M7368.D\ECD2B.CH  
 Acq On : 10-31-2014 01:47:51 PM Operator: RR  
 Sample : CD583LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:38:35 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.38 | 3356394   | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.51 | 15516830m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.74 | 1380957m  | 25.56791  | ng    | 68% |
| 5) C15(101) #2     | 23.22 | 9633669m  | 29.34977  | ng    | 78% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7370.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0420\M7370.D\ECD2B.CH  
 Acq On : 10-31-2014 03:17:03 PM Operator: RR  
 Sample : M8158-P(2) Inst : INST. M  
 Misc : NBH14-0025 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:38:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3457950   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14427513m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 7819979   | 147.94970 | ng    |
| 5) C15(101) #2     | 23.23 | 43449104m | 157.71129 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7370.D MM0417F.M Mon Dec 08 07:53:50 2014 046776CFS



Signal #1 : I:\M\DATA\SM0420\M7374.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0420\M7374.D\ECD2B.CH  
 Acq On : 10-31-2014 06:14:54 PM Operator: RR  
 Sample : M8166-P(2) Inst : INST. M  
 Misc : NBH14-0061 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:38:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3896128m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 16399895  | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 9644912   | 163.08209 | ng    |
| 5) C15(101) #2     | 23.23 | 48269830m | 153.06496 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7374.D MM0417F.M Mon Dec 08 07:53:52 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7375.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0420\M7375.D\ECD2B.CH  
 Acq On : 10-31-2014 06:59:18 PM Operator: RR  
 Sample : M8166DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0061 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:38:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3789903   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14849979m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 7977933   | 137.01187 | ng    |
| 5) C15(101) #2     | 23.23 | 42410195m | 147.23863 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7375.D MM0417F.M Mon Dec 08 07:53:54 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7376.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0420\M7376.D\ECD2B.CH  
 Acq On : 10-31-2014 07:43:57 PM Operator: RR  
 Sample : M8347-P(2) Inst : INST. M  
 Misc : NBH14-0057 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:00 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:38:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3939877   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 15439767m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.71 | 8673814   | 143.74863 | ng    |
| 5) C15(101) #2     | 23.23 | 47365452m | 161.60586 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7376.D MM0417F.M Mon Dec 08 07:53:56 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7378.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0420\M7378.D\ECD2B.CH  
 Acq On : 10-31-2014 09:12:51 PM Operator: RR  
 Sample : M8348-P(2) Inst : INST. M  
 Misc : NBH14-0069 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:08 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3751008   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16498668m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 2764796   | 45.21315 | ng    |
| 5) C15(101) #2     | 23.23 | 14710335m | 40.23924 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7378.D MM0417F.M Mon Dec 08 07:54:00 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7382.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0420\M7382.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:10 am Operator: RR  
 Sample : M8365-P(2) Inst : INST. M  
 Misc : NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:20 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3821195   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16031325m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 187571    | 1.38540  | ng    |
| 5) C15(101) #2     | 23.23 | 828058m   | 3.15073  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7382.D MM0417F.M Mon Dec 08 07:54:02 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7383.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0420\M7383.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:55 am Operator: RR  
 Sample : M8365MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0234 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:23 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3843951   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15924736m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 2929459m  | 49.29919  | ng    |
| 5) C15(101) #2     | 23.21 | 17031694m | 51.15126  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7383.D MM0417F.M Mon Dec 08 07:54:03 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7384.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0420\M7384.D\ECD2B.CH  
 Acq On : 11-1-2014 01:39:39 AM Operator: RR  
 Sample : M8365MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0234 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:26 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3569199   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16152323m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 2693515m  | 48.79143  | ng    |
| 5) C15(101) #2     | 23.22 | 16221325m | 47.90240  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7384.D MM0417F.M Mon Dec 08 07:54:05 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7385.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0420\M7385.D\ECD2B.CH  
 Acq On : 11-1-2014 02:24:06 AM Operator: RR  
 Sample : M8371-P(2) Inst : INST. M  
 Misc : NBH14-0257 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:29 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3449023   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14448956m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3997192   | 72.82414 | ng    |
| 5) C15(101) #2     | 23.23 | 21368630m | 68.61300 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7385.D MM0417F.M Mon Dec 08 07:54:07 2014 046776CFS



Signal #1 : I:\M\DATA\SM0420\M7386.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0420\M7386.D\ECD2B.CH  
 Acq On : 11-1-2014 03:08:37 AM Operator: RR  
 Sample : M8372-P(2) Inst : INST. M  
 Misc : NBH14-0261 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:31 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3992391   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14437474m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 8398292   | 136.90919 | ng    |
| 5) C15(101) #2     | 23.23 | 39016034m | 137.31541 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7386.D MM0417F.M Mon Dec 08 07:54:09 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7393.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0420\M7393.D\ECD2B.CH  
 Acq On : 11-1-2014 08:19:54 AM Operator: RR  
 Sample : M8403-P(2) Inst : INST. M  
 Misc : NBH14-0165 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3790051   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15506717m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2306846   | 36.92203 | ng    |
| 5) C15(101) #2     | 23.23 | 12129163m | 35.19532 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7393.D MM0417F.M Mon Dec 08 07:54:13 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7394.D\ECD1A.CH Vial: 31  
 Signal #2 : I:\M\DATA\SM0420\M7394.D\ECD2B.CH  
 Acq On : 11-1-2014 09:04:28 AM Operator: RR  
 Sample : M8156-P-D(4) Inst : INST. M  
 Misc : NBH14-0017 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:39:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3466074   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16621213m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2392199   | 42.17884 | ng    |
| 5) C15(101) #2     | 23.23 | 12009794m | 32.47556 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7396.D\ECD1A.CH Vial: 33  
 Signal #2 : I:\M\DATA\SM0420\M7396.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:33 am Operator: RR  
 Sample : M8163-P-D(4) Inst : INST. M  
 Misc : NBH14-0045 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:03 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:39:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3302286   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15622191m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1466852   | 26.37915 | ng    |
| 5) C15(101) #2     | 23.23 | 7064744m  | 20.38838 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7396.D MM0417F.M Mon Dec 08 07:54:17 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7397.D\ECD1A.CH Vial: 34  
 Signal #2 : I:\M\DATA\SM0420\M7397.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:17 am Operator: RR  
 Sample : M8164-P-D(4) Inst : INST. M  
 Misc : NBH14-0049 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:05 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3315341   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15602009m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3454811   | 65.11611 | ng    |
| 5) C15(101) #2     | 23.23 | 17272678m | 50.38331 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7397.D MM0417F.M Mon Dec 08 07:54:19 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7398.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0420\M7398.D\ECD2B.CH  
 Acq On : 01 Nov 2014 12:02 pm Operator: RR  
 Sample : M8165-P-D(4) Inst : INST. M  
 Misc : NBH14-0053 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:09 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3372956   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16177406m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1126308   | 19.35682 | ng    |
| 5) C15(101) #2     | 23.23 | 5957318m  | 16.71081 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7398.D MM0417F.M Mon Dec 08 07:54:21 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7404.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0420\M7404.D\ECD2B.CH  
 Acq On : 11-1-2014 04:29:29 PM Operator: RR  
 Sample : M8355-P-D(4) Inst : INST. M  
 Misc : NBH14-0203 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:29 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3477013m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 16006335m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 6552761   | 121.75830 | ng    |
| 5) C15(101) #2     | 23.23 | 34730048m | 105.44420 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7405.D\ECD1A.CH Vial: 42  
 Signal #2 : I:\M\DATA\SM0420\M7405.D\ECD2B.CH  
 Acq On : 11-1-2014 05:13:56 PM Operator: RR  
 Sample : M8358-P-D(4) Inst : INST. M  
 Misc : NBH14-0215 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:32 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3343615   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16181889m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 2223326   | 40.54967 | ng    |
| 5) C15(101) #2     | 23.23 | 11928443m | 33.13915 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7405.D MM0417F.M Mon Dec 08 07:54:26 2014 046776CFS



Signal #1 : I:\M\DATA\SM0420\M7406.D\ECD1A.CH Vial: 43  
 Signal #2 : I:\M\DATA\SM0420\M7406.D\ECD2B.CH  
 Acq On : 11-1-2014 05:58:26 PM Operator: RR  
 Sample : M8359-P-D(4) Inst : INST. M  
 Misc : NBH14-0219 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:35 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3679872   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15729907m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2491707   | 41.33538 | ng    |
| 5) C15(101) #2     | 23.23 | 12120156m | 34.66141 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0420\M7411.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0420\M7411.D\ECD2B.CH  
 Acq On : 11-1-2014 09:40:38 PM Operator: RR  
 Sample : M8373-P-D(4) Inst : INST. M  
 Misc : NBH14-0265 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3271043   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15691204m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2160939   | 40.27092 | ng    |
| 5) C15(101) #2     | 23.23 | 11040176m | 31.61459 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7411.D MM0417F.M Mon Dec 08 07:54:32 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7412.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0420\M7412.D\ECD2B.CH  
 Acq On : 01 Nov 2014 10:25 pm Operator: RR  
 Sample : M8383-P-D(4) Inst : INST. M  
 Misc : NBH14-0314 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:53 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3422873   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15625537m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 4294659   | 79.17458 | ng    |
| 5) C15(101) #2     | 23.23 | 20607775m | 60.64667 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7412.D MM0417F.M Mon Dec 08 07:54:34 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7413.D\ECD1A.CH Vial: 50  
 Signal #2 : I:\M\DATA\SM0420\M7413.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:09 pm Operator: RR  
 Sample : M8384-P-D(4) Inst : INST. M  
 Misc : NBH14-0318 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:40:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3468014   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15873942m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2846068   | 50.63747 | ng    |
| 5) C15(101) #2     | 23.23 | 14123174m | 40.15109 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7413.D MM0417F.M Mon Dec 08 07:54:37 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7414.D\ECD1A.CH Vial: 51  
 Signal #2 : I:\M\DATA\SM0420\M7414.D\ECD2B.CH  
 Acq On : 01 Nov 2014 11:54 pm Operator: RR  
 Sample : M8385-P-D(4) Inst : INST. M  
 Misc : NBH14-0322 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:41:00 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3195384   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16417848m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1421218   | 26.41613 | ng    |
| 5) C15(101) #2     | 23.23 | 7682799m  | 21.08116 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7414.D MM0417F.M Mon Dec 08 07:54:38 2014 046776CFS

Signal #1 : I:\M\DATA\SM0420\M7415.D\ECD1A.CH Vial: 52  
 Signal #2 : I:\M\DATA\SM0420\M7415.D\ECD2B.CH  
 Acq On : 02 Nov 2014 12:38 am Operator: RR  
 Sample : M8386-P-D(4) Inst : INST. M  
 Misc : NBH14-0326 5-128 14-0494 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 16:41:03 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 16:40:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3347894   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15959738m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3300286   | 61.41990 | ng    |
| 5) C15(101) #2     | 23.23 | 17205203m | 48.99905 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7415.D MM0417F.M Mon Dec 08 07:54:40 2014 046776CFS

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0495*  
*Package DP-14-0677*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061


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**USACE/NAE - New Bedford Harbor LTM Study**  
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USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA


Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061

Analyst Approval:  Rich Restucci  
2014.11.21 11:39:57 -05'00'

---

QC Chemist Approval:  Carla Devine  
2014.12.10 11:02:10 -05'00'

---






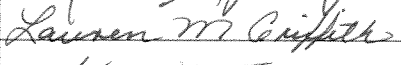




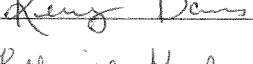
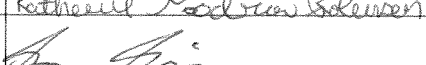

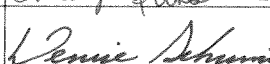












Project Manager Approval:  Carole McCarthy  
2014.12.11 07:39:53 -05'00'

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## 2014 Signature Page

| Name (print)               | Name (signature)   | Initials  |
|----------------------------|--|---|
| Matt Schumitz              |             | MNS   |
| Ellyn M Webb               |             | EMW   |
| Carla Devine               |             | CRD   |
| Roxanne M. Brackett        |            | RMB   |
| Robert Lizotte, Jr.        |             | BL  |
| Lauren M Griffith          |             | LMG   |
| Kevin M. McInerney         |            | KMC   |
| <del>Michael McGee</del>   | <del></del> |   |
| Rich Restucci              |             | RR  |
| Stephanie Hart             |             | SAH   |
| Kerry Davis                |            | KPD   |
| Katherine Goodrow Robinson |          | KGR   |
| Sam Guimaraes              |           | SAG   |
| Emily Fraser               |           | EF  |
| Denise Schumitz            |           | DAS   |
| Jonathan Thorn             |           | JRT   |
| Christie Usher             |           | CU  |
| Caitlyn Farragher          |           | CNF   |
| Mart J. Benotti            |           |  |
| William H Brown            |           | WB  |
| Dawn Trapp                 |           | DBT   |
| Carolee S. Lynn McLain     |           | CSM   |
| Weidong Li                 |           | W.L   |
| Jeannine Seyfert           |           | JS  |
| FRANCO PALA                |           | FP  |

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0495*  
*Package DP-14-0677*

|          |   |     |
|----------|---|-----|
| <b>1</b> | <b><i>Work Plan</i></b><br>Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.  | 1   |
| <b>2</b> | <b><i>Tables</i></b><br>Analytical Data Tables, Qualifier Definitions.  | 23  |
| <b>3</b> | <b><i>Miscellaneous Documentation</i></b><br>Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.                      | 34  |
| <b>4</b> | <b><i>Sample Preparation Records</i></b><br>Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.  | 51  |
| <b>5</b> | <b><i>Analytical Calibrations</i></b><br>Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check. | 82  |
| <b>6</b> | <b><i>Analytical Data</i></b><br>Raw Data Quantification Reports.   | 147 |
| <b>7</b> | <b><i>Chromatograms</i></b><br>Sample And Standard Chromatograms.   | N/A |
| <b>8</b> | <b><i>Unused Data</i></b>   | N/A |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** USACE-NAE New Bedford Harbor LTM MDL Study  
**Project Number:** 100053747  
**Client:** USACE/NAE  
696 Virginia Road  
Concord, MA 01742  
USA  
**Client Contact Information:** Peter Hugh  
Engineering Technical Lead  
(978) 318-8452(V)  
NA  
NA  
**Effective Date of QAPP:** 10/9/2014  
**Version Number:** 100053747(S)-02  
**Project Manager:** Peven-McCarthy, Carole  
**Laboratory Task Manager:** Peven-McCarthy, Carole  
**Deliverable Due Date:** 11/3/2014

### 2.0 SCOPE OF WORK

**Overview:** A project-specific MDL study is required for this project.  
**Matrix:** Soil/Sediment

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store frozen.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** NA  
**Archiving:** NA  
**Disposal:** NA

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

NA

| Samples Expected: | Samples Per Batch: | Batches Expected: |
|-------------------|--------------------|-------------------|
|                   | 20                 |                   |

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

| Type: | Description:                      | Count:      | Rgt: | Reference:  | Comment: |
|-------|-----------------------------------|-------------|------|---|----------|
| PB    | Laboratory control reagent blank. | 1 per batch | --   | NA  |          |
| LCS   | Laboratory Control Sample         | 1 per batch | No   | NA  |          |
| MDL   | Method Detection Limits           | 8 per batch | Yes  | 140304-02: Mud Dump<br>Reference N4415<br>Lot:N4415 |          |

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

|                           |  |
|---------------------------|--|
| SOP No.-Rev:              | <b>5-192-14</b>  |
| SOP Title:                | <i>Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis</i> |
| Sample Size:              | 10 g   |
| SIS and LCS/MS Compounds: | Defined in Table 2.  |
| Deviations:               | NA   |
| Comments:                 | NA   |

**Table 2: SIS and LCS/MS Spiking Level**

| Standard Type       | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment     |
|---------------------|-------------------|-------------------|-------------|-------------|
| PCB Surrogate       | ID59 SIS          | ~ 100 ng          | 100 uL      | NA          |
| ECD LCS/MS Solution | HX10 LCS/MS       | ~ 38 - 150 ng     | 75 uL       | LCS         |
| PDL spike ECD       | ID73 LCS/MS       | ~ 7.5 - 30.0 ng   | 150 uL      | MDL samples |

#### 2.1.3.2 Cleanup

## WORK/QUALITY ASSURANCE PROJECT PLAN

- |    |              |   |
|----|--------------|---|
| 1) | SOP No.-Rev: | <b>5-328-04</b>   |
|    | SOP Title:   | <i>Removal (cleanup) of Sulfur from Environmental Sample Extracts</i> |
|    | Deviations:  | NA  |
|    | Comments:    | NA  |
| 2) | SOP No.-Rev: | <b>5-327-04</b>   |
|    | SOP Title:   | <i>Florisil Cleanup of Environmental Sample Extracts</i>              |
|    | Deviations:  | Elute with Hexane only  |
|    | Comments:    | NA  |

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

| Standard Type | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment |
|---------------|-------------------|-------------------|-------------|---------|
| PCB IS        | IE11 RIS          | ~ 100 ng          | 100 uL      | NA      |

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- |    |             |   |
|----|-------------|---|
| 1) | SOP_No-Rev: | <b>5-128-13</b>   |
|    | SOP_Title:  | <i>Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection</i> |
|    | Deviations: | NA  |
|    | Comments:   | Report SIS corrected data   |

### 2.2. DELIVERABLES

|                          |            |
|--------------------------|------------|
| <b>Deliverables Due:</b> | 11/3/2014  |
| <b>LIMS Reports:</b>     | <i>Yes</i> |
| <b>Histograms:</b>       | <i>No</i>  |
| <b>Excel Tables:</b>     | <i>Yes</i> |
| <b>EICs:</b>             | <i>No</i>  |
| <b>Chromatograms:</b>    | <i>No</i>  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

**EDDs:** *Yes*

**Comments:**

Required 30 day TAT.

EDD required.

Full data package (pdf) required for external validation.

Detailed quant reports are not required.

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

| Staff Member             | Role                    | Comment |
|--------------------------|-------------------------|---------|
| Carole S. Peven-McCarthy | Project Manager         | NA      |
| Samuel A. Guimaraes      | Sample Preparation      | NA      |
| Richard P. Restucci Jr   | GC/ECD Analysis         | NA      |
| Matt D. Schumitz         | Sample Custody          | NA      |
| Carla R. Devine          | Quality Control Officer | NA      |

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

| Activity:           | Start Date: | End Date:  | TAT (days): | Comment: |
|---------------------|-------------|------------|-------------|----------|
| Sample Receipt      | 10/03/2014  | NA         | 0           | NA       |
| Sample Preparation  | 10/06/2014  | 10/09/2014 | 3           | NA       |
| Instrument Analysis | 10/09/2014  | 10/24/2014 | 15          | NA       |

## WORK/QUALITY ASSURANCE PROJECT PLAN

| Activity:              | Start Date: | End Date:  | TAT<br>(days): | Comment: |
|------------------------|-------------|------------|----------------|----------|
| Quality Control Review | 10/27/2014  | 10/29/2014 | 2              | NA       |
| Final Data Reporting   | 10/29/2014  | 10/31/2014 | 2              | NA       |

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

| Labor Activity:        | Hours/<br>Batch: | Batches: | Total<br>Hours: | Comment: |
|------------------------|------------------|----------|-----------------|----------|
| Sample Receipt         | 1                | 1        | 1               | NA       |
| Sample Preparation     | 24               | 1        | 24              | NA       |
| <i>Extraction</i>      | 20               |          |                 |          |
| <i>glassware</i>       | 4                |          |                 |          |
| Instrument Analysis    | 16               | 1        | 16              | NA       |
| <i>GC/ECD</i>          | 16               |          |                 |          |
| Quality Control Review | 3                | 1        | 3               | NA       |
| Final Data Reporting   | 1                | 1        | 1               | NA       |

### 7.0 STAFF DEVELOPMENT

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**WORK/QUALITY ASSURANCE PROJECT PLAN**

**Attachment 1: Target Samples**



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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

|                                |  |
|--------------------------------|--|
| <b>Project Test Code Name:</b> | Master_128   |
| <b>SOP Reference:</b>          | 5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection |
| <b>Description:</b>            | Pesticide / PCB by GC/ECD  |
| <b>Matrix:</b>                 | S - Solid Samples, like soil or sediment, prepared and analyzed under the same class of detection limits.  |
| <b>Detection Limit Study:</b>  | 5-128-2013-ssMDL-SF  |
| <b>Instrument:</b>             | ECD  |
| <b>MQO Criteria</b>            | USACE/NBH LTMP   |
| <b>Standard Report:</b>        | Standard Result Report   |

| Method Specific Reporting    |            | Holding Times (days)        |                    | Data Flags                           |
|------------------------------|------------|-----------------------------|--------------------|--------------------------------------|
| <b>Result Units:</b>         | ng/g       | <b>Unit Conversion:</b>     | (none)             | <b>Sample:</b> 14 <b>DL_Flag:</b> U  |
| <b>Weight Basis:</b>         | DRY        | <b>Result Format:</b>       | Significant Figure | <b>Frozen:</b> 365 <b>RL_Flag:</b> J |
| <b>Standard Basis:</b>       | SIS        | <b># of Figures/Digits:</b> | 3                  | <b>Extract:</b> 40 <b>PB_Flag:</b> B |
| <b>Oil Weight Basis:</b>     | No         | <b>Oil Weight Source:</b>   | Oil Weight         | <b>DIL_Flag:</b> D                   |
| <b>U-Value Substitution:</b> | U-Flag=NED | <b>Histograms:</b>          | No                 | <b>HT_Flag:</b> T                    |
| <b>ECD_Reporting:</b>        | Yes        |                             |                    |                                      |
| <b>ECD_Result:</b>           | Higher     | <b>ECD_Flag</b>             | p                  |                                      |
| <b>RPD_Limit (&lt;%):</b>    | 40         | <b>ECD_Manual_Flag:</b>     | m                  |                                      |

| No: | Analyte: | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|----------|--------------|------|----------|----------|---------|--------|
| 1   | Cl2(8)   | Cl2(8)       | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 2   | Cl3(18)  | Cl3(18)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 3   | Cl3(28)  | Cl3(28)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 4   | Cl4(44)  | Cl4(44)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 5   | Cl4(52)  | Cl4(52)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 6   | Cl4(66)  | Cl4(66)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 7   | Cl5(101) | Cl5(101)     | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 8   | Cl5(105) | Cl5(105)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 9   | Cl5(118) | Cl5(118)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 10  | Cl6(128) | Cl6(128)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 11  | Cl6(138) | Cl6(138)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 12  | Cl6(153) | Cl6(153)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 13  | Cl7(170) | Cl7(170)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 14  | Cl7(180) | Cl7(180)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 15  | Cl7(187) | Cl7(187)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 16  | Cl8(195) | Cl8(195)     | T    | Cl6(161) | Cl6(152) | No      | No     |

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

| No: | Analyte:  | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|-----------|--------------|------|----------|----------|---------|--------|
| 17  | CI9(206)  | CI9(206)     | T    | CI6(161) | CI6(152) | No      | No     |
| 18  | CI10(209) | CI10(209)    | T    | CI6(161) | CI6(152) | No      | No     |
| 1   | CI3(34)   | CI3(34)      | SIS  | CI5(96)  |          | No      | No     |
| 2   | CI6(152)  | CI6(152)     | SIS  | CI6(161) |          | No      | No     |

**Total Analytes:** 20

**Subtract Peaks:**

None

**Sum Peaks:**

None

# Battelle

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

**ICAL Acceptance Criteria:**

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

**Continuing Calibration Verification Criteria:**

**CCV Name:** 5-128

| Frequency Hrs: | Mean PD(%): | Individual PD(%): | RIS/SIS RT Window (min): | Area Limit Low(%): | Area Limit High(%): | Comment: |
|----------------|-------------|-------------------|--------------------------|--------------------|---------------------|----------|
| 24 (N)         | 15 (N)      | 20 (N)            | 0.25 (N)                 | -50                | 100 (N)             | NA       |

**Independent Calibration Verification:**

**ICC Name:** 5-128

| Mean PD Limit(%): | Ind. PD Limit(%): | RIS/SIS Window Limit (Secs): | Area Limit High(%): | Area Limit Low(%): | Comment: |
|-------------------|-------------------|------------------------------|---------------------|--------------------|----------|
| 20 (N)            | 20 (N)            | 0.25 (N)                     | -50                 | 100 (N)            | NA       |

**Mass Discrimination Criteria:**

None

**Degradation Check Criteria:**

**Degradation Check Name:** 5-128

| DDT Breakdown Limit (%): | Endrin Breakdown Limit(%): | Total Breakdown Limit(%): | Comment: |
|--------------------------|----------------------------|---------------------------|----------|
| 20 (N)                   | 20 (N)                     | 20 (N)                    |          |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 | <b>USACE/NBH LTMP</b>  |              |  |
|--|--|--------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>   | <b>Qual:</b> | <b>Corrective Action:</b>  |
| Procedural Blank                       | Samples must be greater than five times the blank concentration (>5xPB).   | B            | Review with Project Manager; re-analyze or justify results in project records.               |
| PB Measurement Quality Objective       | Organic results in the Procedural Blank are less than the ssRL (<ssRL)   | N            |  |
| Laboratory Control Sample              | Recovery values 70-130%.   | N            | Review with project manager; re-analyze or justify reporting the results in project records. |
| Matrix Spike Recovery                  | Organics 70-130%. Analyte concentration in MS must be >5 times reported background concentration.<br>Organics Results in the Target is less than 5 times the Original  | N<br>n       | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Matrix Spike/Spike Duplicate Precision | Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration.<br>Organics Results in the Target is less than 5 times the Original  | N<br>n       | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Standard Reference Material Accuracy   | Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL).<br>Organics Results in the Target is less than 5 times the MDL | N<br>n       | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Analytical Duplicate Precision         | Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL.<br>Organics Results in the Original is less than 10 times the MDL  | N<br>n       | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Analytical Triplicate Precision        | Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL.<br>Organics Results in the Original is less than 10 times the MDL  | N<br>n       | Review with Project Manager; re-analyze or justify reporting results in the project records. |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Surrogate Compound Recovery            | Recovery results between 40% and 120%.  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records.   |
| Control Oil                            | RPD < 30% for at least 90% of analytes  | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Instrument Calibration                 | 5-128-13: R-squared greater than or equal to 0.995<br>Mean RSD less than or equal to 15%,<br>Individual RSD less than or equal to 25% | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Independent Calibration Check Solution | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 20%.                              | N                     | Review with Project Manager; re-analyze or justify in project records.   |
| Continuing Calibration Verification    | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 15%.                              | N                     |  |

## Sample Receipt Form

Approved:  Authorized: 

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_  
 Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM  
 No. of Shipping Containers: 1

### SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
 COC Forms:  Shipped with samples  No Forms

### Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler |              | None | Intact         | Intact              | 1.0    | 23   |

### Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
 Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0117 (NA) BDO IDs Assigned: M8152 - M8174

Samples logged in by: Schumitz, Matt Date/Time: 09/26/2014 12:00 AM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8152   | NBH14-0001        | 09/22/14 15:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8153   | NBH14-0005        | 09/22/14 14:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8154   | NBH14-0009        | 09/22/14 11:16   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8155   | NBH14-0013        | 09/22/14 12:08   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8156   | NBH14-0017        | 09/22/14 8:13    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8157   | NBH14-0021        | 09/22/14 11:38   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8158   | NBH14-0025        | 09/22/14 9:37    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8159   | NBH14-0029        | 09/22/14 10:40   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8160   | NBH14-0033        | 09/22/14 15:25   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8161   | NBH14-0037        | 09/22/14 14:03   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8162   | NBH14-0041        | 09/22/14 13:06   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8163   | NBH14-0045        | 09/23/14 15:43   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8164   | NBH14-0049        | 09/23/14 14:57   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8165   | NBH14-0053        | 09/23/14 13:53   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8166   | NBH14-0061        | 09/23/14 10:12   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8167   | NBH14-0065        | 09/23/14 9:09    | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8168   | NBH14-0073        | 09/23/14 14:27   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8169   | NBH14-0077        | 09/23/14 13:39   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8170   | NBH14-0081        | 09/23/14 12:26   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8171   | NBH14-0085        | 09/23/14 11:29   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8172   | NBH14-0089        | 09/23/14 10:32   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8173   | NBH14-0093        | 09/23/14 9:53    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8174   | NBH14-0097        | 09/23/14 8:57    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |

Total Samples: 23



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-587

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*J M Joz* 9/26/14 9:15

Received By(name/date/time):

*MW* 9/26/14 9:15





The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532


Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061


Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-588

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):  
 9/26/14 9:15

Received By(name/date/time):  
 9/26/14

# Sample Receipt Form

Approved:  Authorized

Project Number: 100043429 Client: USACE  
Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM  
No. of Shipping Containers: 1

## SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
COC Forms:  Shipped with samples  No Forms

## Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal          | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|---------------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler | NA           | Custody Seals | Intact         | Intact              | 1.2    | 60   |

## Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.2 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0113 (NA) BDO IDs Assigned: M8347 - M8406

Samples logged in by: Schumitz, Matt Date/Time: 10/01/2014 12:00 AM

Approved By: Devine, Carla Approved On: 12/5/2014 9:32:00 AM

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8347   | NBH14-0057        | 09/30/14 10:09   | 10/02/14 10:08 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8348   | NBH14-0069        | 09/30/14 10:25   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8349   | NBH14-0181        | 09/26/14 8:36    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8350   | NBH14-0185        | 09/26/14 9:50    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8351   | NBH14-0189        | 09/26/14 11:00   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8352   | NBH14-0193        | 09/26/14 12:49   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8353   | NBH14-0197        | 09/26/14 13:38   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8354   | NBH14-0199        | 09/26/14 14:24   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8355   | NBH14-0203        | 09/26/14 15:17   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8356   | NBH14-0207        | 09/26/14 14:32   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8357   | NBH14-0211        | 09/26/14 13:36   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8358   | NBH14-0215        | 09/26/14 8:21    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8359   | NBH14-0219        | 09/26/14 8:50    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8360   | NBH14-0220        | 09/26/14 9:24    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8361   | NBH14-0224        | 09/26/14 10:54   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8362   | NBH14-0228        | 09/26/14 11:50   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8363   | NBH14-0232        | 09/25/14 14:16   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8364   | NBH14-0233        | 09/26/14 8:56    | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8365   | NBH14-0234        | 09/24/14 14:40   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8366   | NBH14-0237        | 09/29/14 15:14   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8367   | NBH14-0241        | 09/29/14 15:54   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8368   | NBH14-0245        | 09/29/14 8:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8369   | NBH14-0249        | 09/29/14 9:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8370   | NBH14-0253        | 09/29/14 10:01   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8371   | NBH14-0257        | 09/29/14 12:47   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8372   | NBH14-0261        | 09/29/14 14:39   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8373   | NBH14-0265        | 09/29/14 15:26   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8374   | NBH14-0269        | 09/29/14 8:13    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8375   | NBH14-0273        | 09/29/14 9:08    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8376   | NBH14-0277        | 09/29/14 9:52    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8377   | NBH14-0281        | 09/29/14 10:45   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8378   | NBH14-0285        | 09/29/14 11:15   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8379   | NBH14-0289        | 09/29/14 12:27   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8380   | NBH14-0302        | 09/30/14 8:00    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8381   | NBH14-0306        | 09/30/14 9:02    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8382   | NBH14-0310        | 09/30/14 9:59    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8383   | NBH14-0314        | 09/30/14 11:47   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8384   | NBH14-0318        | 09/30/14 12:41   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8385   | NBH14-0322        | 09/30/14 13:44   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8386   | NBH14-0326        | 09/30/14 14:36   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8387   | NBH14-0101        | 09/24/14 10:17   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8388   | NBH14-0105        | 09/24/14 9:18    | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8389   | NBH14-0109        | 09/24/14 10:56   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8390   | NBH14-0113        | 09/24/14 12:10   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8391   | NBH14-0117        | 09/24/14 13:15   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8392   | NBH14-0121        | 09/24/14 14:24   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8393   | NBH14-0125        | 09/25/14 8:15    | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8394   | NBH14-0129        | 09/25/14 9:49    | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8395   | NBH14-0133        | 09/25/14 11:00   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8396   | NBH14-0137        | 09/25/14 11:32   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8397   | NBH14-0141        | 09/25/14 12:58   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8398   | NBH14-0145        | 09/25/14 14:03   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8399   | NBH14-0149        | 09/25/14 14:56   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8400   | NBH14-0153        | 09/25/14 8:19    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8401   | NBH14-0157        | 09/25/14 9:06    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8402   | NBH14-0161        | 09/25/14 9:55    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8403   | NBH14-0165        | 09/25/14 12:58   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8404   | NBH14-0169        | 09/25/14 14:11   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8405   | NBH14-0173        | 09/25/14 15:14   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8406   | NBH14-0177        | 09/26/14 7:39    | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

Total Samples: 60



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | M0347     | SED    | 151-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | " " 48    | SED    | 155-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 49        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 50        | SED    | 241-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 51        | SED    | 237-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 52        | SED    | 236-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 53        | SED    | 231-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 54        | SED    | 230-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 55        | SED    | 117-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 56        | SED    | 114-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 57        | SED    | 111-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 58        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 59        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 60        | SED    | 138-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 61        | SED    | 126-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 62        | SED    | 108-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 63        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 64        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 65        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:14 | NBH14-0237 | 66        | SED    | 222-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



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# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 | M8367     | SED    | 224-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | 68        | SED    | 128-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | 69        | SED    | 123-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | 70        | SED    | 121-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | 71        | SED    | 218-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | 72        | SED    | 208-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | 73        | SED    | 207-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | 74        | SED    | 332-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | 75        | SED    | 338-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | 76        | SED    | 331-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | 77        | SED    | 323-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | 78        | SED    | 324-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | 79        | SED    | 325-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | 80        | SED    | 225-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2104 | 9:02  | NBH14-0306 | 81        | SED    | 226-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | 82        | SED    | 227-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | 83        | SED    | 217-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | 84        | SED    | 212-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | 85        | SED    | 211-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 14:36 | NBH14-0326 | 86        | SED    | 204-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



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# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | M8387     | SED    | 349-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | " " 88    | SED    | 352-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 89        | SED    | 345-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 90        | SED    | 318-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 91        | SED    | 311-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 92        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 93        | SED    | 221-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 94        | SED    | 249-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 95        | SED    | 317-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 96        | SED    | 309-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 97        | SED    | 310-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 98        | SED    | 304-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 99        | SED    | 250-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | M8400     | SED    | 105-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | " " 01    | SED    | 109-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 02        | SED    | 115-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 03        | SED    | 154-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 04        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 05        | SED    | 131-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 06        | SED    | 247-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** Procedural Blank

**Battelle ID** CD584PB-P  
**Sample Type** PB  
**Collection Date** 10/28/2014  
**Extraction Date** 10/28/2014  
**Analysis Date** 11/04/2014  
**Analytical Instrument** ECD  
**% Moisture** 7.07  
**% Lipid** NA  
**Matrix** SEDIMENT  
**Sample Size** 9.38  
**Size Unit-Basis** G\_DRY  
**Units** NG/G\_DRY

---

|           |         |
|-----------|---------|
| Cl2(8)    | 0.256 U |
| Cl3(18)   | 0.257 U |
| Cl3(28)   | 0.257 U |
| Cl4(44)   | 0.257 U |
| Cl4(52)   | 0.256 U |
| Cl4(66)   | 0.256 U |
| Cl5(101)  | 0.256 U |
| Cl5(105)  | 0.257 U |
| Cl5(118)  | 0.257 U |
| Cl6(128)  | 0.257 U |
| Cl6(138)  | 0.257 U |
| Cl6(153)  | 0.257 U |
| Cl7(170)  | 0.257 U |
| Cl7(180)  | 0.257 U |
| Cl7(187)  | 0.257 U |
| Cl8(195)  | 0.257 U |
| Cl9(206)  | 0.256 U |
| Cl10(209) | 0.257 U |

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**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| Cl3(34)  | 96 |
| Cl6(152) | 92 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

|                              |                              |
|------------------------------|------------------------------|
| <b>Client ID</b>             | Laboratory Control<br>Sample |
| <b>Battelle ID</b>           | CD585LCS-P                   |
| <b>Sample Type</b>           | LCS                          |
| <b>Collection Date</b>       | 10/28/2014                   |
| <b>Extraction Date</b>       | 10/28/2014                   |
| <b>Analysis Date</b>         | 11/04/2014                   |
| <b>Analytical Instrument</b> | ECD                          |
| <b>% Moisture</b>            | 7.07                         |
| <b>% Lipid</b>               | NA                           |
| <b>Matrix</b>                | SEDIMENT                     |
| <b>Sample Size</b>           | 9.27                         |
| <b>Size Unit-Basis</b>       | G_DRY                        |
| <b>Units</b>                 | NG/G_DRY                     |

|           |      | Target | % REC | Qual |
|-----------|------|--------|-------|------|
| Cl2(8)    | 3.09 | 4.05   | 76    |      |
| Cl3(18)   | 3.11 | 4.05   | 77    |      |
| Cl3(28)   | 3.42 | 4.05   | 84    |      |
| Cl4(44)   | 3.98 | 4.05   | 98    |      |
| Cl4(52)   | 3.59 | 4.05   | 89    |      |
| Cl4(66)   | 3.52 | 4.05   | 87    |      |
| Cl5(101)  | 3.06 | 4.05   | 76    |      |
| Cl5(105)  | 3.63 | 4.05   | 90    |      |
| Cl5(118)  | 3.84 | 4.05   | 95    |      |
| Cl6(128)  | 4.49 | 4.05   | 111   |      |
| Cl6(138)  | 3.79 | 4.05   | 94    |      |
| Cl6(153)  | 3.69 | 4.05   | 91    |      |
| Cl7(170)  | 3.71 | 4.05   | 92    |      |
| Cl7(180)  | 3.80 | 4.05   | 94    |      |
| Cl7(187)  | 3.94 | 4.05   | 97    |      |
| Cl8(195)  | 3.81 | 4.05   | 94    |      |
| Cl9(206)  | 3.74 | 4.05   | 92    |      |
| Cl10(209) | 3.95 | 4.05   | 98    |      |

### Surrogate Recoveries (%)

|          |    |
|----------|----|
| Cl3(34)  | 95 |
| Cl6(152) | 99 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0029 | NBH14-0033 | NBH14-0037 | NBH14-0041 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8159-P    | M8160-P    | M8161-P    | M8162-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/22/2014 | 09/22/2014 | 09/22/2014 | 09/22/2014 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 | 10/28/2014 | 10/28/2014 |
| <b>Analysis Date</b>         | 11/04/2014 | 11/04/2014 | 11/04/2014 | 11/04/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 2.43       | 40.65      | 3.92       | 1.96       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.42       | 1.45       | 2.40       | 2.46       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |        |        |        |
|-----------|-------|--------|--------|--------|
| Cl2(8)    | 59.0  | 28.4   | 190 D  | 31.5   |
| Cl3(18)   | 121   | 52.3   | 373 D  | 53.5   |
| Cl3(28)   | 281 D | 148    | 676 D  | 157    |
| Cl4(44)   | 116   | 51.1   | 400 D  | 57.4   |
| Cl4(52)   | 468 D | 183    | 1360 D | 192    |
| Cl4(66)   | 109   | 64.4   | 302 D  | 63.3   |
| Cl5(101)  | 262 D | 77.4   | 484 D  | 82.5   |
| Cl5(105)  | 89.3  | 57.7   | 280 D  | 49.5   |
| Cl5(118)  | 400 D | 200    | 825 D  | 165    |
| Cl6(128)  | 57.0  | 33.2   | 192 D  | 26.3   |
| Cl6(138)  | 312 D | 127    | 734 D  | 105    |
| Cl6(153)  | 342 D | 130    | 584 D  | 104    |
| Cl7(170)  | 35.5  | 16.2   | 95.0   | 12.5   |
| Cl7(180)  | 56.4  | 23.5   | 143    | 18.7   |
| Cl7(187)  | 41.8  | 16.2   | 87.0   | 12.1   |
| Cl8(195)  | 6.27  | 1.86   | 15.2   | 1.10   |
| Cl9(206)  | 6.58  | 1.95   | 14.3   | 1.10   |
| Cl10(209) | 2.36  | 1.54 J | 6.73   | 1.03 U |

### Surrogate Recoveries (%)

|          |    |     |     |    |
|----------|----|-----|-----|----|
| Cl3(34)  | 96 | 109 | 117 | 63 |
| Cl6(152) | 77 | 82  | 95  | 56 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0181 | NBH14-0185 | NBH14-0189 | NBH14-0193 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8349-P    | M8350-P    | M8351-P    | M8352-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/26/2014 | 09/26/2014 | 09/26/2014 | 09/26/2014 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 | 10/28/2014 | 10/28/2014 |
| <b>Analysis Date</b>         | 11/04/2014 | 11/04/2014 | 11/04/2014 | 11/04/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 1.48       | 2.12       | 1.05       | 2.08       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.42       | 2.39       | 2.43       | 2.51       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |        |         |       |
|-----------|--------|--------|---------|-------|
| Cl2(8)    | 40.2   | 45.8   | 28.0    | 114   |
| Cl3(18)   | 47.8   | 52.1   | 39.5    | 175   |
| Cl3(28)   | 136    | 121    | 120     | 399 D |
| Cl4(44)   | 46.8   | 46.9   | 40.1    | 181   |
| Cl4(52)   | 155    | 149    | 133     | 512 D |
| Cl4(66)   | 62.2   | 53.2   | 55.1    | 217 D |
| Cl5(101)  | 89.2   | 63.8   | 72.4    | 341 D |
| Cl5(105)  | 55.2   | 47.8   | 41.0    | 155   |
| Cl5(118)  | 172    | 152    | 139     | 470 D |
| Cl6(128)  | 29.2   | 24.7   | 22.0    | 79.1  |
| Cl6(138)  | 114    | 97.8   | 89.4    | 386 D |
| Cl6(153)  | 117    | 95.9   | 90.6    | 366 D |
| Cl7(170)  | 13.3   | 11.6   | 10.8    | 36.4  |
| Cl7(180)  | 22.8   | 16.5   | 17.5    | 56.8  |
| Cl7(187)  | 13.6   | 12.4   | 13.0    | 34.6  |
| Cl8(195)  | 1.61   | 1.10   | 1.19    | 5.34  |
| Cl9(206)  | 1.09   | 1.13   | 0.919 J | 3.64  |
| Cl10(209) | 1.05 U | 1.06 U | 1.04 U  | 1.32  |

### Surrogate Recoveries (%)

|          |    |    |    |    |
|----------|----|----|----|----|
| Cl3(34)  | 74 | 78 | 60 | 64 |
| Cl6(152) | 72 | 62 | 55 | 59 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0197 | NBH14-0199 | NBH14-0233 | NBH14-0237 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8353-P    | M8354-P    | M8364-P    | M8366-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/26/2014 | 09/26/2014 | 09/26/2014 | 09/29/2014 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 | 10/28/2014 | 10/28/2014 |
| <b>Analysis Date</b>         | 11/04/2014 | 11/04/2014 | 11/04/2014 | 11/04/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 31.91      | 1.64       | 0.91       | 5.26       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 1.69       | 2.54       | 2.45       | 2.41       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |        |        |       |
|-----------|--------|--------|--------|-------|
| Cl2(8)    | 36.9   | 148 D  | 33.8   | 118   |
| Cl3(18)   | 65.8   | 324 D  | 42.7   | 219 D |
| Cl3(28)   | 202    | 646 D  | 145 D  | 629 D |
| Cl4(44)   | 63.9   | 391 D  | 40.9   | 230 D |
| Cl4(52)   | 265 D  | 943 D  | 153    | 955 D |
| Cl4(66)   | 75.9   | 491 D  | 58.7   | 294 D |
| Cl5(101)  | 107    | 838 D  | 84.1   | 530 D |
| Cl5(105)  | 67.7   | 498 D  | 55.9   | 207 D |
| Cl5(118)  | 236 D  | 1460 D | 181 D  | 881 D |
| Cl6(128)  | 40.7   | 306 D  | 29.5   | 150   |
| Cl6(138)  | 155    | 1230 D | 116    | 678 D |
| Cl6(153)  | 167    | 872 D  | 113    | 676 D |
| Cl7(170)  | 20.2   | 131 D  | 14.7   | 85.0  |
| Cl7(180)  | 31.8   | 219 D  | 21.4   | 130   |
| Cl7(187)  | 22.4   | 142    | 14.2   | 82.6  |
| Cl8(195)  | 2.76   | 28.6   | 1.72   | 14.0  |
| Cl9(206)  | 2.39   | 23.8   | 1.08   | 12.6  |
| Cl10(209) | 1.50 U | 10.7   | 1.04 U | 5.27  |

### Surrogate Recoveries (%)

|          |    |     |    |     |
|----------|----|-----|----|-----|
| Cl3(34)  | 95 | 117 | 83 | 101 |
| Cl6(152) | 76 | 94  | 74 | 81  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0241 | NBH14-0302 | NBH14-0306 | NBH14-0310 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8367-P    | M8380-P    | M8381-P    | M8382-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/29/2014 | 09/30/2014 | 09/30/2014 | 09/30/2014 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 | 10/28/2014 | 10/28/2014 |
| <b>Analysis Date</b>         | 11/05/2014 | 11/05/2014 | 11/05/2014 | 11/05/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 24.87      | 3.48       | 3.33       | 7.36       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 1.90       | 2.49       | 2.38       | 2.26       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |         |        |       |
|-----------|-------|---------|--------|-------|
| Cl2(8)    | 85.5  | 43.4    | 131 D  | 40.1  |
| Cl3(18)   | 157   | 85.6    | 180 D  | 74.0  |
| Cl3(28)   | 570 D | 231 D   | 672 D  | 273 D |
| Cl4(44)   | 151   | 90.1    | 196 D  | 71.8  |
| Cl4(52)   | 771 D | 324 D   | 738 D  | 307 D |
| Cl4(66)   | 242   | 96.8    | 372 D  | 116   |
| Cl5(101)  | 488 D | 196 D   | 464 D  | 203 D |
| Cl5(105)  | 110   | 74.8    | 253 D  | 70.4  |
| Cl5(118)  | 424 D | 283 D   | 1020 D | 269 D |
| Cl6(128)  | 92.3  | 53.2    | 153    | 50.5  |
| Cl6(138)  | 308 D | 219 D   | 675 D  | 204 D |
| Cl6(153)  | 382 D | 235 D   | 725 D  | 198 D |
| Cl7(170)  | 49.2  | 25.1    | 86.7   | 24.3  |
| Cl7(180)  | 73.3  | 35.9    | 134    | 37.8  |
| Cl7(187)  | 61.6  | 24.5    | 94.1   | 27.0  |
| Cl8(195)  | 8.10  | 3.82    | 15.2   | 4.51  |
| Cl9(206)  | 8.56  | 3.53    | 14.1   | 3.89  |
| Cl10(209) | 4.06  | 0.926 J | 5.65   | 1.65  |

### Surrogate Recoveries (%)

|          |    |     |     |    |
|----------|----|-----|-----|----|
| Cl3(34)  | 52 | 108 | 108 | 95 |
| Cl6(152) | 72 | 99  | 76  | 97 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0121 | NBH14-0125 | NBH14-0129 | NBH14-0177 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8392-P    | M8393-P    | M8394-P    | M8406-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/24/2014 | 09/25/2014 | 09/25/2014 | 09/26/2014 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 | 10/28/2014 | 10/28/2014 |
| <b>Analysis Date</b>         | 11/05/2014 | 11/05/2014 | 11/05/2014 | 11/05/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 0.38       | 2.23       | 1.25       | 3.11       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 9.95       | 2.47       | 2.49       | 2.39       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |   |       |      |       |
|-----------|--------|---|-------|------|-------|
| Cl2(8)    | 0.254  | U | 39.0  | 24.6 | 59.0  |
| Cl3(18)   | 0.255  | U | 56.5  | 36.4 | 64.5  |
| Cl3(28)   | 0.0634 | J | 241   | 127  | 219   |
| Cl4(44)   | 0.255  | U | 46.7  | 34.7 | 50.8  |
| Cl4(52)   | 0.267  | p | 227   | 134  | 219   |
| Cl4(66)   | 0.0607 | J | 86.7  | 49.4 | 73.9  |
| Cl5(101)  | 0.474  | p | 156   | 71.0 | 133   |
| Cl5(105)  | 0.255  | U | 45.4  | 41.8 | 95.2  |
| Cl5(118)  | 0.234  | J | 215   | 147  | 291   |
| Cl6(128)  | 0.255  | U | 32.2  | 23.1 | 38.6  |
| Cl6(138)  | 0.311  |   | 156   | 101  | 189   |
| Cl6(153)  | 0.291  |   | 144   | 91.4 | 222   |
| Cl7(170)  | 0.255  | U | 17.9  | 11.5 | 20.0  |
| Cl7(180)  | 0.255  | U | 25.1  | 16.5 | 33.8  |
| Cl7(187)  | 0.255  | U | 23.6  | 11.4 | 26.3  |
| Cl8(195)  | 0.255  | U | 2.92  | 1.34 | 3.62  |
| Cl9(206)  | 0.254  | U | 2.42  | 1.20 | 4.29  |
| Cl10(209) | 0.255  | U | 0.763 | 1.02 | 0.933 |

**Surrogate Recoveries (%)**

|          |    |    |     |     |
|----------|----|----|-----|-----|
| Cl3(34)  | 74 | 84 | 103 | 114 |
| Cl6(152) | 77 | 84 | 90  | 82  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0037 | NBH14-0037 |                 |
|------------------------------|------------|------------|-----------------|
| <b>Battelle ID</b>           | M8161-P    | M8161DUP-P |                 |
| <b>Sample Type</b>           | SA         | QADU       |                 |
| <b>Collection Date</b>       | 09/22/2014 | 09/22/2014 |                 |
| <b>Extraction Date</b>       | 10/28/2014 | 10/28/2014 |                 |
| <b>Analysis Date</b>         | 11/04/2014 | 11/04/2014 |                 |
| <b>Analytical Instrument</b> | ECD        | ECD        |                 |
| <b>% Moisture</b>            | 3.92       | 5.03       |                 |
| <b>% Lipid</b>               | NA         | NA         |                 |
| <b>Matrix</b>                | SED        | SED        |                 |
| <b>Sample Size</b>           | 2.40       | 2.43       |                 |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      |                 |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | <b>RPD Qual</b> |

|           |        |        |      |
|-----------|--------|--------|------|
| CI2(8)    | 190 D  | 209 D  | 9.5  |
| CI3(18)   | 373 D  | 360 D  | 3.5  |
| CI3(28)   | 676 D  | 666 D  | 1.5  |
| CI4(44)   | 400 D  | 393 D  | 1.8  |
| CI4(52)   | 1360 D | 1240 D | 9.2  |
| CI4(66)   | 302 D  | 330 D  | 8.9  |
| CI5(101)  | 484 D  | 466 D  | 3.8  |
| CI5(105)  | 280 D  | 313 D  | 11.1 |
| CI5(118)  | 825 D  | 789 D  | 4.5  |
| CI6(128)  | 192 D  | 216 D  | 11.8 |
| CI6(138)  | 734 D  | 782 D  | 6.3  |
| CI6(153)  | 584 D  | 561 D  | 4.0  |
| CI7(170)  | 95.0   | 102    | 7.1  |
| CI7(180)  | 143    | 144    | 0.7  |
| CI7(187)  | 87.0   | 84.8   | 2.6  |
| CI8(195)  | 15.2   | 14.0   | 8.2  |
| CI9(206)  | 14.3   | 12.9   | 10.3 |
| CI10(209) | 6.73   | 6.15   | 9.0  |

### Surrogate Recoveries (%)

|          |     |     |  |
|----------|-----|-----|--|
| CI3(34)  | 117 | 102 |  |
| CI6(152) | 95  | 71  |  |



# Battelle

The Business of Innovation

Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

| Client ID                | NBH14-0121 | NBH14-0121 |        |       |      |
|--------------------------|------------|------------|--------|-------|------|
| Battelle ID              | M8392-P    | M8392MS-P  |        |       |      |
| Sample Type              | SA         | MS         |        |       |      |
| Collection Date          | 09/24/2014 | 09/24/2014 |        |       |      |
| Extraction Date          | 10/28/2014 | 10/28/2014 |        |       |      |
| Analysis Date            | 11/05/2014 | 11/05/2014 |        |       |      |
| Analytical Instrument    | ECD        | ECD        |        |       |      |
| % Moisture               | 0.38       | 0.00       |        |       |      |
| % Lipid                  | NA         | NA         |        |       |      |
| Matrix                   | SED        | SED        |        |       |      |
| Sample Size              | 9.95       | 5.05       |        |       |      |
| Size Unit-Basis          | G_DRY      | G_DRY      |        |       |      |
| Units                    | NG/G_DRY   | NG/G_DRY   | Target | % REC | Qual |
| Cl2(8)                   | 0.254 U    | 11.5       | 12.38  | 93    |      |
| Cl3(18)                  | 0.255 U    | 11.1       | 12.38  | 90    |      |
| Cl3(28)                  | 0.0634 J   | 12.3       | 12.38  | 99    |      |
| Cl4(44)                  | 0.255 U    | 14.3       | 12.38  | 116   |      |
| Cl4(52)                  | 0.267 p    | 12.3       | 12.38  | 97    |      |
| Cl4(66)                  | 0.0607 J   | 12.4       | 12.38  | 100   |      |
| Cl5(101)                 | 0.474 p    | 11.2       | 12.38  | 87    |      |
| Cl5(105)                 | 0.255 U    | 11.1       | 12.38  | 90    |      |
| Cl5(118)                 | 0.234 J    | 12.0       | 12.38  | 95    |      |
| Cl6(128)                 | 0.255 U    | 11.3       | 12.38  | 91    |      |
| Cl6(138)                 | 0.311      | 12.7       | 12.38  | 100   |      |
| Cl6(153)                 | 0.291      | 11.0       | 12.38  | 87    |      |
| Cl7(170)                 | 0.255 U    | 11.1       | 12.38  | 90    |      |
| Cl7(180)                 | 0.255 U    | 11.3       | 12.38  | 91    |      |
| Cl7(187)                 | 0.255 U    | 11.3       | 12.38  | 91    |      |
| Cl8(195)                 | 0.255 U    | 11.2       | 12.38  | 90    |      |
| Cl9(206)                 | 0.254 U    | 11.2       | 12.38  | 90    |      |
| Cl10(209)                | 0.255 U    | 11.8       | 12.38  | 95    |      |
| Surrogate Recoveries (%) |            |            |        |       |      |
| Cl3(34)                  | 74         | 74         |        |       |      |
| Cl6(152)                 | 77         | 82         |        |       |      |

# Battelle

The Business of Innovation

Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

Client ID NBH14-0121

Battelle ID M8392MSD-P

Sample Type MSD

Collection Date 09/24/2014

Extraction Date 10/28/2014

Analysis Date 11/05/2014

Analytical Instrument ECD

% Moisture 1.00

% Lipid NA

Matrix SED

Sample Size 4.89

Size Unit-Basis G\_DRY

Units NG/G\_DRY Target % REC Qual RPD Qual

|           |      | Target | % REC | Qual | RPD  | Qual |
|-----------|------|--------|-------|------|------|------|
| CI2(8)    | 10.5 | 12.78  | 82    |      | 12.6 |      |
| CI3(18)   | 11.7 | 12.78  | 92    |      | 2.2  |      |
| CI3(28)   | 11.6 | 12.78  | 90    |      | 9.5  |      |
| CI4(44)   | 14.0 | 12.78  | 110   |      | 5.3  |      |
| CI4(52)   | 12.2 | 12.78  | 93    |      | 4.2  |      |
| CI4(66)   | 12.2 | 12.78  | 95    |      | 5.1  |      |
| CI5(101)  | 11.5 | 12.78  | 86    |      | 1.2  |      |
| CI5(105)  | 12.2 | 12.78  | 95    |      | 5.4  |      |
| CI5(118)  | 12.7 | 12.78  | 98    |      | 3.1  |      |
| CI6(128)  | 12.4 | 12.78  | 97    |      | 6.4  |      |
| CI6(138)  | 13.4 | 12.78  | 102   |      | 2.0  |      |
| CI6(153)  | 12.0 | 12.78  | 92    |      | 5.6  |      |
| CI7(170)  | 12.3 | 12.78  | 96    |      | 6.5  |      |
| CI7(180)  | 12.5 | 12.78  | 98    |      | 7.4  |      |
| CI7(187)  | 12.3 | 12.78  | 96    |      | 5.3  |      |
| CI8(195)  | 12.5 | 12.78  | 98    |      | 8.5  |      |
| CI9(206)  | 12.2 | 12.78  | 95    |      | 5.4  |      |
| CI10(209) | 12.8 | 12.78  | 100   |      | 5.1  |      |

**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| CI3(34)  | 92 |
| CI6(152) | 96 |

## Glossary of Data Qualifiers

**Flag: Application:**

---

- B Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
- D Dilution Run. Initial run outside linear range of instrument.
- E Estimate, result is greater than the highest concentration level in the calibration.
- H Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
- J Analyte detected below the sample-specific Reporting Limit (RL).
- m Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
- ME Significant Matrix Interference - Estimated value.
- MI Significant Matrix Interference - value could not be determined or estimated.
- n Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
- N Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
- NA Not applicable
- p Dual column value exceeds RPD criteria, dual column quantitative analysis only.
- T Holding Time (HT) exceeded.
- U Analyte not detected at 3:1 signal:noise ratio.

**QA/QC Summary  
Batch 14-0495**

|                   |   |
|-------------------|---|
| Project:          | USACE/NAE – New Bedford Harbor Long Term Monitoring |
| Parameters:       | PCB Congeners (NOAA 18)                             |
| Laboratory:       | Battelle, Norwell, MA                               |
| Matrix:           | Sediment  |
| Data Set:         | DP-14-0677  |
| Analytical SOP:   | 5-128   |
| Method Reference: | EPA Method 8081B and 8082A (modified)               |

**Sample Custody**

| Collection Date | Receipt Date    | Temp (°C) |
|-----------------|-----------------|-----------|
| 9/22-30/2014    | 9/26, 10/1/2014 | 1.0, 1.2  |

|                    |   |
|--------------------|---|
| Corrective Actions | NA  |
| Sample Storage     | The sediment samples were stored frozen until extraction. |
| Related samples    | NA  |

**METHOD SUMMARIES**

|                    |  |
|--------------------|--|
| Sample Preparation | Prior to sediment extraction, an aliquot of approximately 30 g of wet sediment was placed on clean, labeled aluminum foil, covered and placed in a laboratory laminar flow hood to dry the sample to <50% moisture. Aliquots of these dried samples were weighed into sample extraction vessels for sample extraction. Approximately 2.5 to 10 g sediment was weighed out for extraction (sample weight based on historical analysis results). The sediments were spiked with surrogates, extracted three times with methylene chloride, and the extracts combined, dried over anhydrous sodium sulfate, and concentrated. The concentrated extracts were processed through Florisil to isolate the PCBs, followed by activated copper treatment to remove sulfur. The cleaned extract was concentrated and fortified with internal standard (IS) compounds prior to analysis by GC/ECD. |
| Prep Comments      | The following sample went to very low volume approximately >1 mL pre florisil columns: M8159, M8161, M8366, M8393. Samples were put onto columns and continued through prep.   |

|                   |   |
|-------------------|---|
| Analysis          | PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration. |
| Analysis Comments | <ul style="list-style-type: none"> <li>Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed</li> </ul>   |

**QA/QC Summary  
Batch 14-0495**

|  |   |
|--|---|
|  | <p>inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.</p> <ul style="list-style-type: none"> <li>• In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.</li> <li>• In cases where p qualifiers are present, integrations and data were reviewed.</li> <li>• Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak. Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.</li> </ul> |
|--|---|

| Holding Times | Extraction Date(s) | Analysis Date(s)  |
|---------------|--------------------|-------------------|
|               | 10/28-29/2014      | 11/4-5,20-21/2014 |

|                       |  |
|-----------------------|--|
| Procedural Blank (PB) | A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination. |
| Blank value <5x ssMDL | No exceedances noted.  |
| Samples >5X PB        | No comments.   |

|                          |   |
|--------------------------|---|
| Laboratory Control Spike | A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. |
| 70-130% recovery         | No exceedances noted.   |
|                          | No comments.  |

|  |   |
|--|---|
| Matrix Spike (MS)/Matrix Spike Duplicate (MSD) | A MS/MSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. |
| 70-130% recovery                               | No exceedances noted  |
| <30% RPD                                       | No comments.  |
| Spike must be >5x bkgd conc.                   |   |

**QA/QC Summary  
Batch 14-0495**

|  |   |
|--|---|
| Sample Duplicate (DUP)   | A laboratory duplicate of one sediment was prepared with the analytical batch. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. <b>NOTE: This QC sample was inadvertently included in the sample batch instead of the requested SRM.</b> |
| <30% RPD<br>Conc must be >10X MDL                              | No exceedances noted.<br>No comments.   |
| Surrogate Recovery   | Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency.   |
| 40-120% recovery   | No exceedances noted.<br>No comments.   |
| Initial Calibration (ICAL)                                     | The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF).  |
| $R^2 \geq 0.995$   | No exceedances noted.<br>No comments.   |
| Independent Calibration Check (ICC)                            | The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.   |
| $\leq 20\%$ difference individual and mean                     | No exceedances noted.<br>No comments.   |
| Continuing Calibration Verification (CCV)                      | Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid.   |
| $\leq 20\%$ difference individual; $\leq 15\%$ difference mean | Two exceedances noted.<br>PCBs 206 and 209 are higher than the acceptable criteria in CCV M7442. The LCS recoveries pass in the affected bracket, and PCBs 206 and 209 represent a negligible portion of the total PCB; therefore, the bracket was not re-run.                              |

## Report Project Data Set MOOs

**Project Title:** USACE/NAE - New Bedford Harbor LTM

**Data Set Number:** DP-14-0677

**Project Number:** 100053747

**Prep Batch Number:** 14-0495

**Test Code (Matrix Type):** Master\_128(S)

| QC_PARAMETER:                          | Exceed: | Contg.: | JUSTIFICATION:   |
|--|---------|---------|--|
| Procedural Blank                       | 0       | 0       | None   |
| PB Measurement Quality Objective       | 0       | 0       | None   |
| Laboratory Control Sample              | 0       | 0       | None   |
| Matrix Spike Recovery                  | 0       | 0       | None   |
| Matrix Spike/Spike Duplicate Precision | 0       | 0       | None   |
| Standard Reference Material Accuracy   | NA      | NA      | NA   |
| Analytical Duplicate Precision         | 0       | 0       | None   |
| Analytical Triplicate Precision        | NA      | NA      | NA   |
| Surrogate Compound Recovery            | 0       | 0       | None   |
| Control Oil                            | NA      | NA      | NA   |
| Instrument Calibration                 | 0       | 0       | None   |
| Independent Calibration Check Solution | 0       | 0       | None   |
| Continuing Calibration Verification    | 2       | 0       | PCBs 206 and 209 are higher than the acceptable criteria in CCV M7442. As LCS recoveries pass in the affected bracket, and PCBs 206 and 209 represent a negligible portion of the total PCB, the bracket was not re-run. |

RR 02/16/2015

## BATTELLE - DUXBURY OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** USACE/NAE - New Bedford Harbor LTM      **Data Set Number:** DP-14-0677  
**Project Number:** 100053747      **Prep Batch Number:** 14-0495  
**Entered By:** Richard Restucci Jr      **Entered On:** 11/21/2014  
**Test Code (Matrix Type):** Master\_128(S)

Integrations by Rich Restucci.  
RR 11/20/14

Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak.

Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.  
RR 12/8/14

Method MM0417C utilizes the quant sheets from MM0417B.  
RR 11/20/14

Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96,161, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.  
RR 11/21/14

In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.  
RR 11/21/14

In cases where p qualifiers are present, integrations and data were reviewed.  
RR 11/21/14

**Task Leader Approval:**  Kevin McInerney  
2014.12.08 14:07:47 -05'00'

**Supervisor Approval:**

**PM Approval:**  Carole McCarthy  
2014.12.09 07:44:34 -05'00'



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 2021371 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 2857033 |

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2225995  
4451990  
1112997

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 2508888 |       |
| SM0421.S  | M7442.D | IE07          | CCV   | CI5(96) | 2269787 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)  | PB    | CI5(96) | 2993064 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0) | LCS   | CI5(96) | 2968719 |       |
| SM0421.S  | M7445.D | M8159-P(2)    | SA    | CI5(96) | 3185597 |       |
| SM0421.S  | M7446.D | M8160-P(2)    | SA    | CI5(96) | 3290035 |       |
| SM0421.S  | M7447.D | M8161-P(2)    | SA    | CI5(96) | 2499625 |       |
| SM0421.S  | M7448.D | M8161DUP-P(2) | QADU  | CI5(96) | 2665543 |       |
| SM0421.S  | M7449.D | M8162-P(2)    | SA    | CI5(96) | 3141055 |       |
| SM0421.S  | M7450.D | M8349-P(2)    | SA    | CI5(96) | 3295682 |       |
| SM0421.S  | M7451.D | M8350-P(2)    | SA    | CI5(96) | 3483908 |       |
| SM0421.S  | M7452.D | M8351-P(2)    | SA    | CI5(96) | 3185828 |       |
| SM0421.S  | M7453.D | IE08          | CCV   | CI5(96) | 3341593 |       |
| SM0421.S  | M7454.D | M8352-P(2)    | SA    | CI5(96) | 3201354 |       |
| SM0421.S  | M7455.D | M8353-P(2)    | SA    | CI5(96) | 3328997 |       |
| SM0421.S  | M7456.D | M8354-P(2)    | SA    | CI5(96) | 2861519 |       |
| SM0421.S  | M7457.D | M8364-P(2)    | SA    | CI5(96) | 3704337 |       |
| SM0421.S  | M7458.D | M8366-P(2)    | SA    | CI5(96) | 2834857 |       |
| SM0421.S  | M7459.D | M8367-P(2)    | SA    | CI5(96) | 3094537 |       |
| SM0421.S  | M7460.D | M8380-P(2)    | SA    | CI5(96) | 3278270 |       |
| SM0421.S  | M7461.D | M8381-P(2)    | SA    | CI5(96) | 3056162 |       |
| SM0421.S  | M7462.D | M8382-P(2)    | SA    | CI5(96) | 3439824 |       |
| SM0421.S  | M7463.D | M8392-P(2)    | SA    | CI5(96) | 3308988 |       |
| SM0421.S  | M7464.D | IE07          | CCV   | CI5(96) | 3616079 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)  | MS    | CI5(96) | 3574207 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0) | MSD   | CI5(96) | 3485171 |       |
| SM0421.S  | M7467.D | M8393-P(2)    | SA    | CI5(96) | 3060362 |       |
| SM0421.S  | M7468.D | M8394-P(2)    | SA    | CI5(96) | 3473344 |       |
| SM0421.S  | M7469.D | M8406-P(2)    | SA    | CI5(96) | 3345950 |       |
| SM0421.S  | M7470.D | IE08          | CCV   | CI5(96) | 3715119 |       |
| SM0425.S  | M7644.D | IE07          | CCV   | CI5(96) | 2454734 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)  | SA    | CI5(96) | 2313055 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|-----------------|-------|---------|---------|-------|
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | CI5(96) | 2168056 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | CI5(96) | 2516683 |       |
| SM0425.S  | M7650.D | M8393-P-D(4)    | SA    | CI5(96) | 2746676 |       |
| SM0425.S  | M7651.D | M8394-P-D(4)    | SA    | CI5(96) | 2692233 |       |
| SM0425.S  | M7652.D | M8406-P-D(4)    | SA    | CI5(96) | 2642895 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | CI5(96) | 2817234 |       |
| SM0425.S  | M7654.D | M8353-P-D(4)    | SA    | CI5(96) | 2570630 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | CI5(96) | 3275004 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | CI5(96) | 2497935 |       |
| SM0425.S  | M7657.D | M8364-P-D(4)    | SA    | CI5(96) | 2831047 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | CI5(96) | 2943294 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | CI5(96) | 2759456 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | CI5(96) | 2986236 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | CI5(96) | 2818250 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | CI5(96) | 2889062 |       |
| SM0425.S  | M7666.D | IE07            | CCV   | CI5(96) | 3615358 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:    | AREA:   |
|-----------|---------|--------|-------|----------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161) | 4304957 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161) | 4562564 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161) | 4815577 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161) | 5366502 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161) | 5424577 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161) | 5785136 |

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9631155  
2407789

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|---------------|-------|----------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 5353469 |       |
| SM0421.S  | M7442.D | IE07          | CCV   | Cl6(161) | 5231475 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)  | PB    | Cl6(161) | 5884758 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0) | LCS   | Cl6(161) | 5326547 |       |
| SM0421.S  | M7445.D | M8159-P(2)    | SA    | Cl6(161) | 6340705 |       |
| SM0421.S  | M7446.D | M8160-P(2)    | SA    | Cl6(161) | 6897014 |       |
| SM0421.S  | M7447.D | M8161-P(2)    | SA    | Cl6(161) | 4985421 |       |
| SM0421.S  | M7448.D | M8161DUP-P(2) | QADU  | Cl6(161) | 5191740 |       |
| SM0421.S  | M7449.D | M8162-P(2)    | SA    | Cl6(161) | 6527371 |       |
| SM0421.S  | M7450.D | M8349-P(2)    | SA    | Cl6(161) | 7367513 |       |
| SM0421.S  | M7451.D | M8350-P(2)    | SA    | Cl6(161) | 7614196 |       |
| SM0421.S  | M7452.D | M8351-P(2)    | SA    | Cl6(161) | 7108818 |       |
| SM0421.S  | M7453.D | IE08          | CCV   | Cl6(161) | 7226750 |       |
| SM0421.S  | M7454.D | M8352-P(2)    | SA    | Cl6(161) | 6558467 |       |
| SM0421.S  | M7455.D | M8353-P(2)    | SA    | Cl6(161) | 7301659 |       |
| SM0421.S  | M7456.D | M8354-P(2)    | SA    | Cl6(161) | 5448341 |       |
| SM0421.S  | M7457.D | M8364-P(2)    | SA    | Cl6(161) | 8405026 |       |
| SM0421.S  | M7458.D | M8366-P(2)    | SA    | Cl6(161) | 5618364 |       |
| SM0421.S  | M7459.D | M8367-P(2)    | SA    | Cl6(161) | 3809975 |       |
| SM0421.S  | M7460.D | M8380-P(2)    | SA    | Cl6(161) | 5098002 |       |
| SM0421.S  | M7461.D | M8381-P(2)    | SA    | Cl6(161) | 6753049 |       |
| SM0421.S  | M7462.D | M8382-P(2)    | SA    | Cl6(161) | 5221302 |       |
| SM0421.S  | M7463.D | M8392-P(2)    | SA    | Cl6(161) | 6603478 |       |
| SM0421.S  | M7464.D | IE07          | CCV   | Cl6(161) | 8156325 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)  | MS    | Cl6(161) | 7201616 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0) | MSD   | Cl6(161) | 7104913 |       |
| SM0421.S  | M7467.D | M8393-P(2)    | SA    | Cl6(161) | 5292647 |       |
| SM0421.S  | M7468.D | M8394-P(2)    | SA    | Cl6(161) | 6195680 |       |
| SM0421.S  | M7469.D | M8406-P(2)    | SA    | Cl6(161) | 6287578 |       |
| SM0421.S  | M7470.D | IE08          | CCV   | Cl6(161) | 8337080 |       |
| SM0425.S  | M7644.D | IE07          | CCV   | Cl6(161) | 5632999 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)  | SA    | Cl6(161) | 5474608 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|-----------------|-------|----------|---------|-------|
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | Cl6(161) | 5402030 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | Cl6(161) | 6017147 |       |
| SM0425.S  | M7650.D | M8393-P-D(4)    | SA    | Cl6(161) | 6510245 |       |
| SM0425.S  | M7651.D | M8394-P-D(4)    | SA    | Cl6(161) | 6153614 |       |
| SM0425.S  | M7652.D | M8406-P-D(4)    | SA    | Cl6(161) | 6151539 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | Cl6(161) | 6921232 |       |
| SM0425.S  | M7654.D | M8353-P-D(4)    | SA    | Cl6(161) | 5952392 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | Cl6(161) | 7124865 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | Cl6(161) | 6183577 |       |
| SM0425.S  | M7657.D | M8364-P-D(4)    | SA    | Cl6(161) | 6507986 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | Cl6(161) | 6892389 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | Cl6(161) | 6301646 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | Cl6(161) | 6866828 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | Cl6(161) | 6434027 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | Cl6(161) | 6611448 |       |
| SM0425.S  | M7666.D | IE07            | CCV   | Cl6(161) | 7938143 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 12822282 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 12416297 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 13716870 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 14992953 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 15446142 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 15534608 |

L3 13716870  
 (+) 27433739  
 (-) 6858435

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13969685 |       |
| SM0421.S  | M7442.D | IE07          | CCV   | CI5(96) | 14152396 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)  | PB    | CI5(96) | 15551042 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0) | LCS   | CI5(96) | 15332474 |       |
| SM0421.S  | M7445.D | M8159-P(2)    | SA    | CI5(96) | 12991991 |       |
| SM0421.S  | M7446.D | M8160-P(2)    | SA    | CI5(96) | 13115245 |       |
| SM0421.S  | M7447.D | M8161-P(2)    | SA    | CI5(96) | 10327615 |       |
| SM0421.S  | M7448.D | M8161DUP-P(2) | QADU  | CI5(96) | 9909362  |       |
| SM0421.S  | M7449.D | M8162-P(2)    | SA    | CI5(96) | 13989067 |       |
| SM0421.S  | M7450.D | M8349-P(2)    | SA    | CI5(96) | 14555472 |       |
| SM0421.S  | M7451.D | M8350-P(2)    | SA    | CI5(96) | 14316221 |       |
| SM0421.S  | M7452.D | M8351-P(2)    | SA    | CI5(96) | 14538542 |       |
| SM0421.S  | M7453.D | IE08          | CCV   | CI5(96) | 18282122 |       |
| SM0421.S  | M7454.D | M8352-P(2)    | SA    | CI5(96) | 11988827 |       |
| SM0421.S  | M7455.D | M8353-P(2)    | SA    | CI5(96) | 13536567 |       |
| SM0421.S  | M7456.D | M8354-P(2)    | SA    | CI5(96) | 8845590  |       |
| SM0421.S  | M7457.D | M8364-P(2)    | SA    | CI5(96) | 14038107 |       |
| SM0421.S  | M7458.D | M8366-P(2)    | SA    | CI5(96) | 12338344 |       |
| SM0421.S  | M7459.D | M8367-P(2)    | SA    | CI5(96) | 11765464 |       |
| SM0421.S  | M7460.D | M8380-P(2)    | SA    | CI5(96) | 13050134 |       |
| SM0421.S  | M7461.D | M8381-P(2)    | SA    | CI5(96) | 10687678 |       |
| SM0421.S  | M7462.D | M8382-P(2)    | SA    | CI5(96) | 12234942 |       |
| SM0421.S  | M7463.D | M8392-P(2)    | SA    | CI5(96) | 16023186 |       |
| SM0421.S  | M7464.D | IE07          | CCV   | CI5(96) | 17638012 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)  | MS    | CI5(96) | 16039992 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0) | MSD   | CI5(96) | 16367493 |       |
| SM0421.S  | M7467.D | M8393-P(2)    | SA    | CI5(96) | 13893912 |       |
| SM0421.S  | M7468.D | M8394-P(2)    | SA    | CI5(96) | 13846314 |       |
| SM0421.S  | M7469.D | M8406-P(2)    | SA    | CI5(96) | 13417130 |       |
| SM0421.S  | M7470.D | IE08          | CCV   | CI5(96) | 18841562 |       |
| SM0425.S  | M7644.D | IE07          | CCV   | CI5(96) | 17049609 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)  | SA    | CI5(96) | 15575129 |       |

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**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|-----------------|-------|---------|----------|-------|
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | CI5(96) | 14491668 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | CI5(96) | 14784349 |       |
| SM0425.S  | M7650.D | M8393-P-D(4)    | SA    | CI5(96) | 15423925 |       |
| SM0425.S  | M7651.D | M8394-P-D(4)    | SA    | CI5(96) | 15718693 |       |
| SM0425.S  | M7652.D | M8406-P-D(4)    | SA    | CI5(96) | 15043268 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | CI5(96) | 14683120 |       |
| SM0425.S  | M7654.D | M8353-P-D(4)    | SA    | CI5(96) | 14819030 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | CI5(96) | 18267071 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | CI5(96) | 14599012 |       |
| SM0425.S  | M7657.D | M8364-P-D(4)    | SA    | CI5(96) | 15721114 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | CI5(96) | 15100282 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | CI5(96) | 15155810 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | CI5(96) | 14586460 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | CI5(96) | 15651763 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | CI5(96) | 15432279 |       |
| SM0425.S  | M7666.D | IE07            | CCV   | CI5(96) | 19848168 |       |

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**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:    | AREA:    |
|-----------|---------|--------|-------|----------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161) | 28199596 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161) | 27129752 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161) | 29503850 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161) | 34497986 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161) | 34872167 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161) | 28894537 |

L3 29503850  
 (+) 59007699  
 (-) 14751925

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|---------------|-------|----------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 30447371 |       |
| SM0421.S  | M7442.D | IE07          | CCV   | Cl6(161) | 34414950 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)  | PB    | Cl6(161) | 35595294 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0) | LCS   | Cl6(161) | 33734492 |       |
| SM0421.S  | M7445.D | M8159-P(2)    | SA    | Cl6(161) | 26845029 |       |
| SM0421.S  | M7446.D | M8160-P(2)    | SA    | Cl6(161) | 29050514 |       |
| SM0421.S  | M7447.D | M8161-P(2)    | SA    | Cl6(161) | 18134199 |       |
| SM0421.S  | M7448.D | M8161DUP-P(2) | QADU  | Cl6(161) | 21400555 |       |
| SM0421.S  | M7449.D | M8162-P(2)    | SA    | Cl6(161) | 31780139 |       |
| SM0421.S  | M7450.D | M8349-P(2)    | SA    | Cl6(161) | 29185275 |       |
| SM0421.S  | M7451.D | M8350-P(2)    | SA    | Cl6(161) | 32976949 |       |
| SM0421.S  | M7452.D | M8351-P(2)    | SA    | Cl6(161) | 32542506 |       |
| SM0421.S  | M7453.D | IE08          | CCV   | Cl6(161) | 42945742 |       |
| SM0421.S  | M7454.D | M8352-P(2)    | SA    | Cl6(161) | 25218761 |       |
| SM0421.S  | M7455.D | M8353-P(2)    | SA    | Cl6(161) | 28949874 |       |
| SM0421.S  | M7456.D | M8354-P(2)    | SA    | Cl6(161) | 16002002 |       |
| SM0421.S  | M7457.D | M8364-P(2)    | SA    | Cl6(161) | 28873982 |       |
| SM0421.S  | M7458.D | M8366-P(2)    | SA    | Cl6(161) | 22909356 |       |
| SM0421.S  | M7459.D | M8367-P(2)    | SA    | Cl6(161) | 22157415 |       |
| SM0421.S  | M7460.D | M8380-P(2)    | SA    | Cl6(161) | 29376293 |       |
| SM0421.S  | M7461.D | M8381-P(2)    | SA    | Cl6(161) | 21667901 |       |
| SM0421.S  | M7462.D | M8382-P(2)    | SA    | Cl6(161) | 27466020 |       |
| SM0421.S  | M7463.D | M8392-P(2)    | SA    | Cl6(161) | 37707599 |       |
| SM0421.S  | M7464.D | IE07          | CCV   | Cl6(161) | 42315276 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)  | MS    | Cl6(161) | 37822212 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0) | MSD   | Cl6(161) | 38590284 |       |
| SM0421.S  | M7467.D | M8393-P(2)    | SA    | Cl6(161) | 32098463 |       |
| SM0421.S  | M7468.D | M8394-P(2)    | SA    | Cl6(161) | 31921206 |       |
| SM0421.S  | M7469.D | M8406-P(2)    | SA    | Cl6(161) | 31195851 |       |
| SM0421.S  | M7470.D | IE08          | CCV   | Cl6(161) | 45787052 |       |
| SM0425.S  | M7644.D | IE07          | CCV   | Cl6(161) | 39504743 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)  | SA    | Cl6(161) | 37002683 |       |

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**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|-----------------|-------|----------|----------|-------|
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | Cl6(161) | 34633190 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | Cl6(161) | 39026184 |       |
| SM0425.S  | M7650.D | M8393-P-D(4)    | SA    | Cl6(161) | 35308658 |       |
| SM0425.S  | M7651.D | M8394-P-D(4)    | SA    | Cl6(161) | 37075496 |       |
| SM0425.S  | M7652.D | M8406-P-D(4)    | SA    | Cl6(161) | 35872645 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | Cl6(161) | 36858918 |       |
| SM0425.S  | M7654.D | M8353-P-D(4)    | SA    | Cl6(161) | 35557684 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | Cl6(161) | 41724750 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | Cl6(161) | 35229930 |       |
| SM0425.S  | M7657.D | M8364-P-D(4)    | SA    | Cl6(161) | 37602748 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | Cl6(161) | 35045531 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | Cl6(161) | 36447075 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | Cl6(161) | 33530640 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | Cl6(161) | 36533344 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | Cl6(161) | 37848966 |       |
| SM0425.S  | M7666.D | IE07            | CCV   | Cl6(161) | 46038868 |       |



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**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417F.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2038180 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2539311 |

L3 2225995  
 (+) 4451990  
 (-) 1112997

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|-----------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC        | ICC   | Cl5(96) | 2508888 |       |
| SM0421.S  | M7442.D | IE07            | CCV   | Cl5(96) | 2262683 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)    | PB    | Cl5(96) | 2993064 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0)   | LCS   | Cl5(96) | 2860108 |       |
| SM0421.S  | M7446.D | M8160-P(2)      | SA    | Cl5(96) | 3290035 |       |
| SM0421.S  | M7449.D | M8162-P(2)      | SA    | Cl5(96) | 3141055 |       |
| SM0421.S  | M7450.D | M8349-P(2)      | SA    | Cl5(96) | 3359037 |       |
| SM0421.S  | M7451.D | M8350-P(2)      | SA    | Cl5(96) | 3483908 |       |
| SM0421.S  | M7452.D | M8351-P(2)      | SA    | Cl5(96) | 3178909 |       |
| SM0421.S  | M7453.D | IE08            | CCV   | Cl5(96) | 3341593 |       |
| SM0421.S  | M7455.D | M8353-P(2)      | SA    | Cl5(96) | 3328997 |       |
| SM0421.S  | M7457.D | M8364-P(2)      | SA    | Cl5(96) | 3704337 |       |
| SM0421.S  | M7463.D | M8392-P(2)      | SA    | Cl5(96) | 3287575 |       |
| SM0421.S  | M7464.D | IE07            | CCV   | Cl5(96) | 3616079 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)    | MS    | Cl5(96) | 3574207 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0)   | MSD   | Cl5(96) | 3485171 |       |
| SM0421.S  | M7467.D | M8393-P(2)      | SA    | Cl5(96) | 3247963 |       |
| SM0421.S  | M7468.D | M8394-P(2)      | SA    | Cl5(96) | 3473344 |       |
| SM0421.S  | M7469.D | M8406-P(2)      | SA    | Cl5(96) | 3460648 |       |
| SM0421.S  | M7470.D | IE08            | CCV   | Cl5(96) | 3763261 |       |
| SM0425.S  | M7644.D | IE07            | CCV   | Cl5(96) | 2460463 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)    | SA    | Cl5(96) | 2313055 |       |
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | Cl5(96) | 2168056 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | Cl5(96) | 2470339 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | Cl5(96) | 2817234 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | Cl5(96) | 3356965 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | Cl5(96) | 2583983 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | Cl5(96) | 2943294 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | Cl5(96) | 2776271 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | Cl5(96) | 2918591 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | Cl5(96) | 2818250 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | Cl5(96) | 2889062 |       |

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**BATCH:** 14-0495

**METHOD:** MM0417F.M

**SIGNAL:** 1

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0425.S         | M7666.D      | IE07          | CCV          | CI5(96)      | 3616666      |              |

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**BATCH:** 14-0495

**METHOD:** MM0417F.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 12872032 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 13386960 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 13612237 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 14869473 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 15494530 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 15194166 |

L3 13612237  
 (+) 27224474  
 (-) 6806118

| SEQUENCE: | FILE:   | LEVEL:          | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|-----------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC        | ICC   | CI5(96) | 13936712 |       |
| SM0421.S  | M7442.D | IE07            | CCV   | CI5(96) | 14180470 |       |
| SM0421.S  | M7443.D | CD584PB-P(0)    | PB    | CI5(96) | 15614386 |       |
| SM0421.S  | M7444.D | CD585LCS-P(0)   | LCS   | CI5(96) | 15400691 |       |
| SM0421.S  | M7446.D | M8160-P(2)      | SA    | CI5(96) | 14295827 |       |
| SM0421.S  | M7449.D | M8162-P(2)      | SA    | CI5(96) | 14186019 |       |
| SM0421.S  | M7450.D | M8349-P(2)      | SA    | CI5(96) | 13764477 |       |
| SM0421.S  | M7451.D | M8350-P(2)      | SA    | CI5(96) | 14082362 |       |
| SM0421.S  | M7452.D | M8351-P(2)      | SA    | CI5(96) | 14270748 |       |
| SM0421.S  | M7453.D | IE08            | CCV   | CI5(96) | 17858178 |       |
| SM0421.S  | M7455.D | M8353-P(2)      | SA    | CI5(96) | 13452913 |       |
| SM0421.S  | M7457.D | M8364-P(2)      | SA    | CI5(96) | 14088093 |       |
| SM0421.S  | M7463.D | M8392-P(2)      | SA    | CI5(96) | 16318212 |       |
| SM0421.S  | M7464.D | IE07            | CCV   | CI5(96) | 17692800 |       |
| SM0421.S  | M7465.D | M8392MS-P(0)    | MS    | CI5(96) | 16182679 |       |
| SM0421.S  | M7466.D | M8392MSD-P(0)   | MSD   | CI5(96) | 16275277 |       |
| SM0421.S  | M7467.D | M8393-P(2)      | SA    | CI5(96) | 13849536 |       |
| SM0421.S  | M7468.D | M8394-P(2)      | SA    | CI5(96) | 14010319 |       |
| SM0421.S  | M7469.D | M8406-P(2)      | SA    | CI5(96) | 13704738 |       |
| SM0421.S  | M7470.D | IE08            | CCV   | CI5(96) | 18529766 |       |
| SM0425.S  | M7644.D | IE07            | CCV   | CI5(96) | 16965716 |       |
| SM0425.S  | M7645.D | M8159-P-D(4)    | SA    | CI5(96) | 15695069 |       |
| SM0425.S  | M7647.D | M8161-P-D(4)    | SA    | CI5(96) | 14544276 |       |
| SM0425.S  | M7648.D | M8161DUP-P-D(4) | QADU  | CI5(96) | 14607828 |       |
| SM0425.S  | M7653.D | M8352-P-D(4)    | SA    | CI5(96) | 14662486 |       |
| SM0425.S  | M7655.D | IE08            | CCV   | CI5(96) | 18240605 |       |
| SM0425.S  | M7656.D | M8354-P-D(4)    | SA    | CI5(96) | 14520763 |       |
| SM0425.S  | M7658.D | M8366-P-D(4)    | SA    | CI5(96) | 15076773 |       |
| SM0425.S  | M7659.D | M8367-P-D(4)    | SA    | CI5(96) | 15080107 |       |
| SM0425.S  | M7660.D | M8380-P-D(4)    | SA    | CI5(96) | 14570448 |       |
| SM0425.S  | M7661.D | M8381-P-D(4)    | SA    | CI5(96) | 15573877 |       |
| SM0425.S  | M7662.D | M8382-P-D(4)    | SA    | CI5(96) | 15488897 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0495

**METHOD:** MM0417F.M

**SIGNAL:** 2

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0425.S         | M7666.D      | IE07          | CCV          | CI5(96)      | 19606354     |              |

## BATTELLE - DUXBURY OPERATIONS SAMPLE PREPARATION RECORDS

|   |                              |
|---|------------------------------|
| <b><u>Project Title(s)</u></b>                | <b><u>Project No.(s)</u></b> |
| USACE/NAE - New Bedford Harbor LTM Study      | 100053747                    |
| <b>14-0495</b>                                |                              |
| <b>USACE-NAE New Bedford Harbor LTM Study</b> |                              |
| <b>SED</b>                                    |                              |
| SOP Numbers (see workplan for modifications)  |                              |
| ExtractionSOP No.                             | 5-192                        |
| CleanupSOP No.                                | 5-327                        |
| CleanupSOP No.                                | 5-328                        |

| This Batch Contains The Following Samples: |         |         |            |         |
|--|---------|---------|------------|---------|
| CD584PB-P                                  | M8162-P | M8354-P | M8382-P    | M8406-P |
| CD585LCS-P                                 | M8349-P | M8364-P | M8392-P    |         |
| M8159-P                                    | M8350-P | M8366-P | M8392MS-P  |         |
| M8160-P                                    | M8351-P | M8367-P | M8392MSD-P |         |
| M8161-P                                    | M8352-P | M8380-P | M8393-P    |         |
| M8161DUP-P                                 | M8353-P | M8381-P | M8394-P    |         |

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Samuel Guimaraes

| Approved By:     | Date       | Initials |
|------------------|------------|----------|
| Samuel Guimaraes | 10/31/2014 | SG       |



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BATTELLE - DUXBURY OPERATIONS  
SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                            |                    |                              |                    |
|----------------------------|--------------------|------------------------------|--------------------|
| <b>Requested On/By:</b>    | 10/18/2014 SG      | <b>Purpose:</b>              | Sample Preparation |
| <b>Relinquished On/By:</b> | 10/18/2014 SAH     | <b>Last Activity:</b>        | Return             |
| <b>Accepted On/By:</b>     | 10/18/2014 SG      | <b>Returned On/To:</b>       | 10/18/2014 MDS     |
| <b>Stored In Facility:</b> | Sample Preparation | <b>Returned To Facility:</b> | Custody: NA        |
| <b>Stored Until</b>        | 10/18/2014         | <b>Returned Comment:</b>     | NA                 |
| <b>Stored Comment:</b>     | NA                 |                              |                    |

| No.                  | BDO-ID: | Ctrs | *  | Condition:                 | Custody Comment: |
|----------------------|---------|------|----|----------------------------|------------------|
| 1                    | M8159   | 1    | -- | Intact                     | NA               |
| 2                    | M8160   | 1    | -- | Intact                     | NA               |
| 3                    | M8161   | 1    | -- | Intact                     | NA               |
| 4                    | M8162   | 1    | -- | Intact                     | NA               |
| 5                    | M8349   | 1    | -- | Intact                     | NA               |
| 6                    | M8350   | 1    | -- | Intact                     | NA               |
| 7                    | M8351   | 1    | -- | Intact                     | NA               |
| 8                    | M8352   | 1    | -- | Intact                     | NA               |
| 9                    | M8353   | 1    | -- | Intact                     | NA               |
| 10                   | M8354   | 1    | -- | Intact                     | NA               |
| 11                   | M8364   | 1    | -- | Intact                     | NA               |
| 12                   | M8366   | 1    | -- | Intact                     | NA               |
| 13                   | M8367   | 1    | -- | Intact                     | NA               |
| 14                   | M8380   | 1    | -- | Intact                     | NA               |
| 15                   | M8381   | 1    | -- | Intact                     | NA               |
| 16                   | M8382   | 1    | -- | Intact                     | NA               |
| 17                   | M8392   | 1    | -- | Intact                     | NA               |
| 18                   | M8393   | 1    | -- | Intact                     | NA               |
| 19                   | M8394   | 1    | -- | Intact                     | NA               |
| 20                   | M8406   | 1    | -- | Intact                     | NA               |
| <b>Total Samples</b> |         | 20   |    | * "C" = Consumed Container |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE IDENTIFICATION PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Description                 |
|------------|-----------------------------|
| CD584PB-P  | Procedural Blank            |
| CD585LCS-P | Laboratory Control Sample   |
| M8159-P    | NBH14-0029                  |
| M8160-P    | NBH14-0033                  |
| M8161-P    | NBH14-0037                  |
| M8161DUP-P | Lab Duplicate of NBH14-0037 |
| M8162-P    | NBH14-0041                  |
| M8349-P    | NBH14-0181                  |
| M8350-P    | NBH14-0185                  |
| M8351-P    | NBH14-0189                  |
| M8352-P    | NBH14-0193                  |
| M8353-P    | NBH14-0197                  |
| M8354-P    | NBH14-0199                  |
| M8364-P    | NBH14-0233                  |
| M8366-P    | NBH14-0237                  |
| M8367-P    | NBH14-0241                  |
| M8380-P    | NBH14-0302                  |
| M8381-P    | NBH14-0306                  |
| M8382-P    | NBH14-0310                  |
| M8392-P    | NBH14-0121                  |
| M8392MS-P  | Matrix Spike of NBH14-0121  |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

**BATTELLE - DUXBURY OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| <b>Sample ID</b> | <b>Description</b>                   |
|------------------|--------------------------------------|
| M8392MSD-P       | Matrix Spike Duplicate of NBH14-0121 |
| M8393-P          | NBH14-0125                           |
| M8394-P          | NBH14-0129                           |
| M8406-P          | NBH14-0177                           |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:



## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD584PB-P  | NA    | -- | NA           | NA              | NA          | 10.09              | 92.93     | 7.07       | 9.38               |
| CD585LCS-P | NA    | -- | NA           | NA              | NA          | 9.98               | 92.93     | 7.07       | 9.27               |
| M8159-P    | 1     | -- | 1.12         | 3.18            | 3.13        | 2.48               | 97.57     | 2.43       | 2.42               |
| M8160-P    | 1     | -- | 1.10         | 2.65            | 2.02        | 2.45               | 59.35     | 40.65      | 1.45               |
| M8161-P    | 1     | -- | 1.08         | 2.61            | 2.55        | 2.50               | 96.08     | 3.92       | 2.40               |
| M8161DUP-P | 1     | -- | 1.10         | 3.09            | 2.99        | 2.56               | 94.97     | 5.03       | 2.43               |
| M8162-P    | 1     | -- | 1.09         | 3.64            | 3.59        | 2.51               | 98.04     | 1.96       | 2.46               |
| M8349-P    | 1     | -- | 1.11         | 3.14            | 3.11        | 2.46               | 98.52     | 1.48       | 2.42               |
| M8350-P    | 1     | -- | 1.10         | 3.46            | 3.41        | 2.44               | 97.88     | 2.12       | 2.39               |
| M8351-P    | 1     | -- | 1.11         | 3.01            | 2.99        | 2.46               | 98.95     | 1.05       | 2.43               |
| M8352-P    | 1     | -- | 1.11         | 2.55            | 2.52        | 2.56               | 97.92     | 2.08       | 2.51               |
| M8353-P    | 1     | -- | 1.09         | 2.97            | 2.37        | 2.48               | 68.09     | 31.91      | 1.69               |
| M8354-P    | 1     | -- | 1.11         | 2.94            | 2.91        | 2.58               | 98.36     | 1.64       | 2.54               |
| M8364-P    | 1     | -- | 1.10         | 3.30            | 3.28        | 2.47               | 99.09     | 0.91       | 2.45               |
| M8366-P    | 1     | -- | 1.10         | 2.81            | 2.72        | 2.54               | 94.74     | 5.26       | 2.41               |
| M8367-P    | 1     | -- | 1.10         | 2.99            | 2.52        | 2.53               | 75.13     | 24.87      | 1.90               |
| M8380-P    | 1     | -- | 1.12         | 3.13            | 3.06        | 2.58               | 96.52     | 3.48       | 2.49               |
| M8381-P    | 1     | -- | 1.08         | 2.28            | 2.24        | 2.46               | 96.67     | 3.33       | 2.38               |
| M8382-P    | 1     | -- | 1.08         | 2.71            | 2.59        | 2.44               | 92.64     | 7.36       | 2.26               |
| M8392-P    | 1     | -- | 1.10         | 3.71            | 3.70        | 9.99               | 99.62     | 0.38       | 9.95               |
| M8392MS-P  | 1     | -- | 1.12         | 2.42            | 2.42        | 5.05               | 100.00    | 0.00       | 5.05               |
| M8392MSD-P | 1     | -- | 1.09         | 3.10            | 3.08        | 4.94               | 99.00     | 1.00       | 4.89               |
| M8393-P    | 1     | -- | 1.11         | 2.90            | 2.86        | 2.53               | 97.77     | 2.23       | 2.47               |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| M8394-P    | 1     | -- | 1.11         | 2.71            | 2.69        | 2.52               | 98.75     | 1.25       | 2.49               |
| M8406-P    | 1     | -- | 1.09         | 3.02            | 2.96        | 2.47               | 96.89     | 3.11       | 2.39               |

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>Validation of:</b><br>Wet Wt. | <b>Performed:</b><br>10/31/14 SG |
|----------------------------------|----------------------------------|

| Sample ID: | Comments:   | Reference: |
|------------|---|------------|
| CD584PB-P  | Average of percent dry weights from authentic samples in Batch No. 14-0495 USACE-NAE New Bedford Harbor LTM Study | NA         |
| CD585LCS-P | Average of percent dry weights from authentic samples in Batch No. 14-0495 USACE-NAE New Bedford Harbor LTM Study | NA         |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed



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BATTELLE - DUXBURY OPERATIONS  
SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| CD584PB-P  | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| CD585LCS-P | HX10        | LCS/MS | 8        | 75             | 10/28/14 SG               | KAW       | NA      |
| CD585LCS-P | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8159-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8160-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8161-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8161DUP-P | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8162-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8349-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8350-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8351-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8352-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8353-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8354-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8364-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8366-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8367-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8380-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8381-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8382-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8392-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8392MS-P  | HX10        | LCS/MS | 8        | 125            | 10/28/14 SG               | KAW       | NA      |
| M8392MS-P  | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8392MSD-P | HX10        | LCS/MS | 8        | 125            | 10/28/14 SG               | KAW       | NA      |
| M8392MSD-P | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8393-P    | ID59        | SIS    | 3        | 400            | 10/28/14 SG               | KAW       | NA      |

## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | Standard ID | Type | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|-----------|-------------|------|----------|----------------|---------------------------|-----------|---------|
| M8394-P   | ID59        | SIS  | 3        | 400            | 10/28/14 SG               | KAW       | NA      |
| M8406-P   | ID59        | SIS  | 3        | 400            | 10/28/14 SG               | KAW       | NA      |

Syringes/Pipettes Used:

| Std ID | Type    | Syr/Pip   |
|--------|---------|-----------|
| HX10   | Pipette | H0500262B |
| ID59   | Pipette | B1100330B |



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BATTELLE - DUXBURY OPERATIONS  
SAMPLE EXTRACTION FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0495

USACE-NAE New Bedford Harbor LTM Study

SED

| Sample ID  | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|------------|------------------|-------------------|------------------|----------|-----------|-------|---------|
| CD584PB-P  | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| CD585LCS-P | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8159-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8160-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8161-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8161DUP-P | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8162-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8349-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8350-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8351-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8352-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8353-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8354-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8364-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8366-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8367-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8380-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8381-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8382-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8392-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8392MS-P  | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8392MSD-P | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8393-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8394-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |
| M8406-P    | 10/28/14 KAW     | 10/29/14 KAW      | 10/29/14 KAW     | NA       | NA        | 65    | NA      |

## BATTELLE - DUXBURY OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|

**Reagents:**

| Name           | Expires  | Lot No     | Procedure  | Comments |
|----------------|----------|------------|--|----------|
| Sodium Sulfate | 11/04/14 | 0000081084 | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |

**Solvents:**

| Name            | Lot No     | Comments                               |
|-----------------|------------|--|
| DCM Cycletainer | 0000092595 |  |
| Hexane          | 0000078260 | Solvent exchanged during concentration |



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**BATTELLE - DUXBURY OPERATIONS  
EXTRACT CLEANUP FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| CD584PB-P(0)  | 10/31/14 | KAW   | NA       |
| CD585LCS-P(0) | 10/31/14 | KAW   | NA       |
| M8159-P(0)    | 10/31/14 | KAW   | NA       |
| M8160-P(0)    | 10/31/14 | KAW   | NA       |
| M8161-P(0)    | 10/31/14 | KAW   | NA       |
| M8161DUP-P(0) | 10/31/14 | KAW   | NA       |
| M8162-P(0)    | 10/31/14 | KAW   | NA       |
| M8349-P(0)    | 10/31/14 | KAW   | NA       |
| M8350-P(0)    | 10/31/14 | KAW   | NA       |
| M8351-P(0)    | 10/31/14 | KAW   | NA       |
| M8352-P(0)    | 10/31/14 | KAW   | NA       |
| M8353-P(0)    | 10/31/14 | KAW   | NA       |
| M8354-P(0)    | 10/31/14 | KAW   | NA       |
| M8364-P(0)    | 10/31/14 | KAW   | NA       |
| M8366-P(0)    | 10/31/14 | KAW   | NA       |
| M8367-P(0)    | 10/31/14 | KAW   | NA       |
| M8380-P(0)    | 10/31/14 | KAW   | NA       |
| M8381-P(0)    | 10/31/14 | KAW   | NA       |

## BATTELLE - DUXBURY OPERATIONS EXTRACT CLEANUP FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| M8382-P(0)    | 10/31/14 | KAW   | NA       |
| M8392-P(0)    | 10/31/14 | KAW   | NA       |
| M8392MS-P(0)  | 10/31/14 | KAW   | NA       |
| M8392MSD-P(0) | 10/31/14 | KAW   | NA       |
| M8393-P(0)    | 10/31/14 | KAW   | NA       |
| M8394-P(0)    | 10/31/14 | KAW   | NA       |
| M8406-P(0)    | 10/31/14 | KAW   | NA       |

**Cleanup:**

Copper Cleanup

**Reagents:**

| Name                         | Expires  | Lot No    | Procedure                                  |
|------------------------------|----------|-----------|--|
| Copper, granular, 10-40 mesh | 10/22/19 | MKBT0084V | NA   |
| Activated Copper             | 10/31/14 | MKBT0084V | Activated according to Cleanup SOP (5-328) |





The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
COLUMN FRACTIONATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| CD584PB-P(0)  | 10/30/14 | KAW   | NA                       |
| CD585LCS-P(0) | 10/30/14 | KAW   | NA                       |
| M8159-P(0)    | 10/30/14 | KAW   | NA                       |
| M8160-P(0)    | 10/30/14 | KAW   | NA                       |
| M8161-P(0)    | 10/30/14 | KAW   | NA                       |
| M8161DUP-P(0) | 10/30/14 | KAW   | NA                       |
| M8162-P(0)    | 10/30/14 | KAW   | NA                       |
| M8349-P(0)    | 10/30/14 | KAW   | NA                       |
| M8350-P(0)    | 10/30/14 | KAW   | NA                       |
| M8351-P(0)    | 10/30/14 | KAW   | NA                       |
| M8352-P(0)    | 10/30/14 | KAW   | NA                       |
| M8353-P(0)    | 10/30/14 | KAW   | NA                       |
| M8354-P(0)    | 10/30/14 | KAW   | NA                       |
| M8364-P(0)    | 10/30/14 | KAW   | NA                       |
| M8366-P(0)    | 10/30/14 | KAW   | NA                       |
| M8367-P(0)    | 10/30/14 | KAW   | NA                       |
| M8380-P(0)    | 10/30/14 | KAW   | NA                       |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| M8381-P(0)    | 10/30/14 | KAW   | NA                       |
| M8382-P(0)    | 10/30/14 | KAW   | NA                       |
| M8392-P(0)    | 10/30/14 | KAW   | NA                       |
| M8392MS-P(0)  | 10/30/14 | KAW   | NA                       |
| M8392MSD-P(0) | 10/30/14 | KAW   | NA                       |
| M8393-P(0)    | 10/30/14 | KAW   | NA                       |
| M8394-P(0)    | 10/30/14 | KAW   | NA                       |
| M8406-P(0)    | 10/30/14 | KAW   | NA                       |

**Column Diameter:** 13 mm **Procedure Comment:**

**Elution Volume:** 15 mL

**Solvents**

| Name   | Lot No     |
|--------|------------|
| Hexane | 0000078260 |

**Reagents**

| Weight g | Name     | Expires  | Lot No         | Procedure  |
|----------|----------|----------|----------------|--|
| 1.00     | Florisil | 10/31/14 | 801139-1991484 | Baked at 110 °C for more than 24 hours (SPE columns not baked) |

**Fractions**



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**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| CD584PB-P  | 0 | -- | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| CD585LCS-P | 0 | -- | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8159-P    | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8159-P    | 2 | -- | 10/31/2014 10:58:00 AM | M8159-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8159-P-D  | 3 | C  | 10/31/2014 10:58:00 AM | M8159-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8159-P-D  | 4 | -- | 10/31/2014 10:59:00 AM | M8159-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8159-P-D  | 5 | -- | 10/31/2014 10:59:00 AM | M8159-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8160-P    | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8160-P    | 2 | -- | 10/31/2014 10:58:00 AM | M8160-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8160-P-D  | 3 | C  | 10/31/2014 10:58:00 AM | M8160-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8160-P-D  | 4 | -- | 10/31/2014 10:59:00 AM | M8160-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8160-P-D  | 5 | -- | 10/31/2014 10:59:00 AM | M8160-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8161-P    | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8161-P    | 2 | -- | 10/31/2014 10:58:00 AM | M8161-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract      |   | *  | Extract Date           | Source       |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|--------------|---|----|------------------------|--------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name         | # |    |                        | Name         | # |                          |               |               |                |               |
| M8161-P-D    | 3 | C  | 10/31/2014 10:58:00 AM | M8161-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8161-P-D    | 4 | -- | 10/31/2014 10:59:00 AM | M8161-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8161-P-D    | 5 | -- | 10/31/2014 10:59:00 AM | M8161-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8161DUP-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8161DUP-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8161DUP-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8161DUP-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8161DUP-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8161DUP-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8161DUP-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8161DUP-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8161DUP-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8162-P      | 0 | C  | 10/28/2014 3:48:00 PM  | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8162-P      | 2 | -- | 10/31/2014 10:58:00 AM | M8162-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8162-P-D    | 3 | C  | 10/31/2014 10:58:00 AM | M8162-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8162-P-D    | 4 | -- | 10/31/2014 10:59:00 AM | M8162-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8162-P-D    | 5 | -- | 10/31/2014 10:59:00 AM | M8162-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8349-P      | 0 | C  | 10/28/2014 3:48:00 PM  | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8349-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8349-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8349-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8349-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8349-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8349-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8349-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8349-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8350-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8350-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8350-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8350-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8350-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8350-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8350-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8350-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8350-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8351-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8351-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8351-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8351-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8351-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8351-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8351-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8351-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8351-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8352-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8352-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8352-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8352-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8352-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8352-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8352-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8352-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8352-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8353-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8353-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8353-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8353-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8353-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8353-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8353-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8353-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8353-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8354-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8354-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8354-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8354-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8354-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8354-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8354-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



The Business of Innovation

# BATTELLE - DUXBURY OPERATIONS PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8354-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8354-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8364-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8364-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8364-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8364-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8364-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8364-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8364-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8364-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8364-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8366-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8366-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8366-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8366-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8366-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8366-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8366-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8366-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8366-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8367-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8367-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8367-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8367-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8367-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8367-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8367-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8367-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8367-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8380-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8380-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8380-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8380-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8380-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8380-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8380-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8380-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8380-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8381-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8381-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8381-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8381-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8381-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8381-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8381-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8381-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8381-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8382-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8382-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8382-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| M8382-P-D  | 3 | C  | 10/31/2014 10:58:00 AM | M8382-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8382-P-D  | 4 | -- | 10/31/2014 10:59:00 AM | M8382-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8382-P-D  | 5 | -- | 10/31/2014 10:59:00 AM | M8382-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8392-P    | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8392-P    | 2 | -- | 10/31/2014 10:58:00 AM | M8392-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8392-P-D  | 3 | C  | 10/31/2014 10:58:00 AM | M8392-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8392-P-D  | 4 | -- | 10/31/2014 10:59:00 AM | M8392-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8392-P-D  | 5 | -- | 10/31/2014 10:59:00 AM | M8392-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8392MS-P  | 0 | -- | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8392MSD-P | 0 | -- | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8393-P    | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8393-P    | 2 | -- | 10/31/2014 10:58:00 AM | M8393-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8393-P-D  | 3 | C  | 10/31/2014 10:58:00 AM | M8393-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8393-P-D  | 4 | -- | 10/31/2014 10:59:00 AM | M8393-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0495

USACE-NAE New Bedford Harbor LTM Study

SED

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8393-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8393-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8394-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8394-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8394-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8394-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8394-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8394-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8394-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8394-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8394-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |
| M8406-P   | 0 | C  | 10/28/2014 3:48:00 PM  | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/28/14 KAW  |
| M8406-P   | 2 | -- | 10/31/2014 10:58:00 AM | M8406-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 10/31/14 KAW  |
| M8406-P-D | 3 | C  | 10/31/2014 10:58:00 AM | M8406-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 10/31/14 KAW  |
| M8406-P-D | 4 | -- | 10/31/2014 10:59:00 AM | M8406-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 10/31/14 KAW  |
| M8406-P-D | 5 | -- | 10/31/2014 10:59:00 AM | M8406-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| CD584PB-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| CD585LCS-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8159-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8159-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |
| M8159-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 10/31/14 SG            | KAW       |
| M8160-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8160-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |
| M8160-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 10/31/14 SG            | KAW       |
| M8161-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8161-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |
| M8161-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 10/31/14 SG            | KAW       |
| M8161DUP-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8161DUP-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |
| M8161DUP-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 10/31/14 SG            | KAW       |
| M8162-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8162-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |
| M8162-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 10/31/14 SG            | KAW       |
| M8349-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 10/31/14 SG            | KAW       |
| M8349-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 10/31/14 SG            | KAW       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8349-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8350-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8350-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8350-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8351-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8351-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8351-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8352-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8352-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8352-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8353-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8353-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8353-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8354-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8354-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8354-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8364-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8364-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8364-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |

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^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8366-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8366-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8366-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8367-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8367-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8367-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8380-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8380-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8380-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8381-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8381-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8381-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8382-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8382-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8382-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8392-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8392-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8392-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8392MS-P(0) | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |

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^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8392MSD-P(0) | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8393-P(0)    | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8393-P-D(3)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8393-P-D(5)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8394-P(0)    | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8394-P-D(3)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8394-P-D(5)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |
| M8406-P(0)    | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 10/31/14 SG            | KAW       |
| M8406-P-D(3)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 10/31/14 SG            | KAW       |
| M8406-P-D(5)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 10/31/14 SG            | KAW       |

Syringes/Pipettes Used:

\* - Final Dilution is any HPLC, dilutions, or other manipulation

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## BATTELLE - DUXBURY OPERATIONS SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Comment:   | Date/Initials: |
|------------|--|----------------|
| CD584PB-P  | NA   | NA             |
| CD585LCS-P | NA   | NA             |
| M8159-P    | Sample went to very low volume approximately >1 mL pre florisil columns. Samples were put onto columns and continued through prep. | 10/30/14 SG    |
| M8160-P    | NA   | NA             |
| M8161-P    | Sample went to very low volume approximately >1 mL pre florisil columns. Samples were put onto columns and continued through prep. | 10/30/14 KAW   |
| M8161DUP-P | NA   | NA             |
| M8162-P    | NA   | NA             |
| M8349-P    | NA   | NA             |
| M8350-P    | NA   | NA             |
| M8351-P    | NA   | NA             |
| M8352-P    | NA   | NA             |
| M8353-P    | NA   | NA             |
| M8354-P    | NA   | NA             |
| M8364-P    | NA   | NA             |
| M8366-P    | Sample went to very low volume approximately >1 mL pre florisil columns. Samples were put onto columns and continued through prep. | 10/30/14 SG    |
| M8367-P    | NA   | NA             |
| M8380-P    | NA   | NA             |
| M8381-P    | NA   | NA             |
| M8382-P    | NA   | NA             |
| M8392-P    | NA   | NA             |
| M8392MS-P  | NA   | NA             |
| M8392MSD-P | NA   | NA             |
| M8393-P    | Sample went to very low volume approximately >1 mL pre florisil columns. Samples were put onto columns and continued through prep. | 10/30/14 SG    |
| M8394-P    | NA   | NA             |
| M8406-P    | NA   | NA             |



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                            |                        |                           |                       |
|----------------------------|------------------------|---------------------------|-----------------------|
| <b>Purpose:</b>            | GC/ECD TRANSFER        | <b>Last Activity:</b>     | Prep->Inst            |
| <b>Relinquished On/By:</b> | Oct 31 2014 3:51PM SG  | <b>Received On/By:</b>    | Oct 31 2014 3:51PM RR |
| <b>Relinquished From:</b>  | Sample Preparation: NA | <b>Received Location:</b> | GC Laboratory: NA     |
| <b>Relinquish Comment:</b> | NA                     | <b>Received Comment:</b>  | NA                    |

| No. | BDO-ID:         | PIV: | DF:    | Condition: | Custody Comment: |
|-----|-----------------|------|--------|------------|------------------|
| 1   | CD584PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 2   | CD585LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 3   | M8159-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 4   | M8159-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 5   | M8159-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 6   | M8160-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 7   | M8160-P-D(4)    | NA   | 21.053 | Intact     | NA               |
| 8   | M8160-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 9   | M8161-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 10  | M8161-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 11  | M8161-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 12  | M8161DUP-P(2)   | 1000 | 1.053  | Intact     | NA               |
| 13  | M8161DUP-P-D(4) | 1000 | 21.053 | Intact     | NA               |
| 14  | M8161DUP-P-D(5) | 1000 | 400    | Intact     | NA               |
| 15  | M8162-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 16  | M8162-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 17  | M8162-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 18  | M8349-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 19  | M8349-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 20  | M8349-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 21  | M8350-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 22  | M8350-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 23  | M8350-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 24  | M8351-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 25  | M8351-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 26  | M8351-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 27  | M8352-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 28  | M8352-P-D(4)    | 1000 | 21.053 | Intact     | NA               |





The Business of Innovation

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**SED**

|    |               |      |        |        |    |
|----|---------------|------|--------|--------|----|
| 29 | M8352-P-D(5)  | 1000 | 400    | Intact | NA |
| 30 | M8353-P(2)    | 1000 | 1.053  | Intact | NA |
| 31 | M8353-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 32 | M8353-P-D(5)  | 1000 | 400    | Intact | NA |
| 33 | M8354-P(2)    | 1000 | 1.053  | Intact | NA |
| 34 | M8354-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 35 | M8354-P-D(5)  | 1000 | 400    | Intact | NA |
| 36 | M8364-P(2)    | 1000 | 1.053  | Intact | NA |
| 37 | M8364-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 38 | M8364-P-D(5)  | 1000 | 400    | Intact | NA |
| 39 | M8366-P(2)    | 1000 | 1.053  | Intact | NA |
| 40 | M8366-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 41 | M8366-P-D(5)  | 1000 | 400    | Intact | NA |
| 42 | M8367-P(2)    | 1000 | 1.053  | Intact | NA |
| 43 | M8367-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 44 | M8367-P-D(5)  | 1000 | 400    | Intact | NA |
| 45 | M8380-P(2)    | 1000 | 1.053  | Intact | NA |
| 46 | M8380-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 47 | M8380-P-D(5)  | 1000 | 400    | Intact | NA |
| 48 | M8381-P(2)    | 1000 | 1.053  | Intact | NA |
| 49 | M8381-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 50 | M8381-P-D(5)  | 1000 | 400    | Intact | NA |
| 51 | M8382-P(2)    | 1000 | 1.053  | Intact | NA |
| 52 | M8382-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 53 | M8382-P-D(5)  | 1000 | 400    | Intact | NA |
| 54 | M8392-P(2)    | 1000 | 1.053  | Intact | NA |
| 55 | M8392-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 56 | M8392-P-D(5)  | 1000 | 400    | Intact | NA |
| 57 | M8392MS-P(0)  | 1000 | 1      | Intact | NA |
| 58 | M8392MSD-P(0) | 1000 | 1      | Intact | NA |
| 59 | M8393-P(2)    | 1000 | 1.053  | Intact | NA |
| 60 | M8393-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 61 | M8393-P-D(5)  | 1000 | 400    | Intact | NA |
| 62 | M8394-P(2)    | 1000 | 1.053  | Intact | NA |
| 63 | M8394-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 64 | M8394-P-D(5)  | 1000 | 400    | Intact | NA |
| 65 | M8406-P(2)    | 1000 | 1.053  | Intact | NA |
| 66 | M8406-P-D(4)  | 1000 | 21.053 | Intact | NA |

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

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USACE/NAE - New Bedford Harbor LTM Study

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**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                        |              |      |     |        |    |
|------------------------|--------------|------|-----|--------|----|
| 67                     | M8406-P-D(5) | 1000 | 400 | Intact | NA |
| <b>Total Extracts:</b> |              | 67   |     |        |    |

**BATTELLE - DUXBURY OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0495**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

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Entered By:

On:

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Task Leader Approval:

On:

Supervisor Approval:

On:

PM Approval:

On:

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## INJECTION LOG

Directory I:\M\DATA\SM0417\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous             | Injected                       |
|-----|-----|---------|-----------------|---------------------------|--------------------------------|
| 1   | 1   | M7203.D | HEXANE          |                           | 10-20-2014 05:18 PM            |
| 2   | 2   | M7204.D | HF94            |                           | 10-20-2014 06:02 PM            |
| 3   | 3   | M7205.D | IE03            |                           | 10-20-2014 06:46 PM            |
| 4   | 4   | M7206.D | IE04            | Level not used.           | <del>10-20-2014 07:31 PM</del> |
| 5   | 5   | M7207.D | IE05            |                           | 10-20-2014 08:16 PM            |
| 6   | 6   | M7208.D | IE06            | RR 11/18/14               | 10-20-2014 09:00 PM            |
| 7   | 7   | M7209.D | IE07            |                           | 10-20-2014 09:45 PM            |
| 8   | 8   | M7210.D | IE08            |                           | 10-20-2014 10:29 PM            |
| 9   | 9   | M7211.D | IE09            | Level not used.           | <del>10-20-2014 11:14 PM</del> |
| 10  | 10  | M7212.D | IE10            |                           | 10-20-2014 11:58 PM            |
| 11  | 11  | M7213.D | HY06 ICC        |                           | 10-21-2014 12:43 AM            |
| 12  | 12  | M7214.D | HF94            |                           | 10-21-2014 01:28 AM            |
| 13  | 13  | M7215.D | IE08 mid        |                           | 10-21-2014 02:12 AM            |
| 14  | 14  | M7216.D | CD598PB-P(3)    | Procedural Blank 5-128 14 | 10-21-2014 02:57 AM            |
| 15  | 15  | M7217.D | CD599LCS-P(5)   | Laboratory Control Sample | 10-21-2014 03:42 AM            |
| 16  | 16  | M7218.D | CD600SRM-P(5)   | Standard Reference Materi | 10-21-2014 04:26 AM            |
| 17  | 17  | M7219.D | M7754-P(5)      | B537PreMnA 5-128 14-0498  | 10-21-2014 05:11 AM            |
| 18  | 18  | M7220.D | M7755-P(5)      | B537PreMnB 5-128 14-0498  | 10-21-2014 05:55 AM            |
| 19  | 19  | M7221.D | M7756-P(5)      | B537PreMnC 5-128 14-0498  | 10-21-2014 06:40 AM            |
| 20  | 20  | M7222.D | M7756MS-P(5)    | Matrix Spike of B537PreMn | 10-21-2014 07:25 AM            |
| 21  | 21  | M7223.D | M7756MSD-P(5)   | Matrix Spike Duplicate of | 10-21-2014 08:09 AM            |
| 22  | 22  | M7224.D | M7757-P(5)      | B537R01MnA 5-128 14-0498  | 10-21-2014 08:54 AM            |
| 23  | 23  | M7225.D | M7758-P(5)      | B537R01MnB 5-128 14-0498  | 10-21-2014 09:38 AM            |
| 24  | 24  | M7226.D | HF94            |                           | 10-21-2014 10:22 AM            |
| 25  | 25  | M7227.D | IE08 mid        |                           | 10-21-2014 11:07 AM            |
| 26  | 26  | M7228.D | M7759-P(5)      | B537R01MnC 5-128 14-0498  | 10-21-2014 11:52 AM            |
| 27  | 27  | M7229.D | M7760-P(5)      | B537R01MnD 5-128 14-0498  | 10-21-2014 12:36 PM            |
| 28  | 28  | M7230.D | M7761-P(5)      | B537R01MnE 5-128 14-0498  | 10-21-2014 01:21 PM            |
| 29  | 29  | M7231.D | M7762-P(5)      | B537S01MnA 5-128 14-0498  | 10-21-2014 02:05 PM            |
| 30  | 30  | M7232.D | M7763-P(5)      | B537S01MnB 5-128 14-0498  | 10-21-2014 02:50 PM            |
| 31  | 31  | M7233.D | M7764-P(5)      | B537S01MnC 5-128 14-0498  | 10-21-2014 03:35 PM            |
| 32  | 32  | M7234.D | M7765-P(5)      | B537S01MnD 5-128 14-0498  | 10-21-2014 04:19 PM            |
| 33  | 33  | M7235.D | M7766-P(5)      | B537S01MnE 5-128 14-0498  | 10-21-2014 05:04 PM            |
| 34  | 34  | M7236.D | M7767-P(5)      | B537S02MnA 5-128 14-0498  | 10-21-2014 05:48 PM            |
| 35  | 35  | M7237.D | M7768-P(5)      | B537S02MnB 5-128 14-0498  | 10-21-2014 06:33 PM            |
| 36  | 36  | M7238.D | HF94            |                           | 10-21-2014 07:17 PM            |
| 37  | 37  | M7239.D | IE07 mid        |                           | 10-21-2014 08:02 PM            |
| 38  | 38  | M7240.D | M7768DUP-P(5)   | Lab Duplicate of B537S02M | 10-21-2014 08:46 PM            |
| 39  | 39  | M7241.D | M7769-P(5)      | B537S02MnC 5-128 14-0498  | 10-21-2014 09:31 PM            |
| 40  | 40  | M7242.D | M7770-P(5)      | B537S02MnD 5-128 14-0498  | 10-21-2014 10:16 PM            |
| 41  | 41  | M7243.D | M7771-P(5)      | B537S02MnE 5-128 14-0498  | 10-21-2014 11:00 PM            |
| 42  | 42  | M7244.D | CD669PB-P(0)    | Procedural Blank 5-128 14 | 10-21-2014 11:45 PM            |
| 43  | 43  | M7245.D | CD670LCS-P(0)   | Laboratory Control Sample | 10-22-2014 12:29 AM            |
| 44  | 44  | M7246.D | CD671LCS-D-P(0) | Laboratory Control Sample | 10-22-2014 01:14 AM            |
| 45  | 45  | M7247.D | M8926-P(0)      | FLD20141014OSHCO-7-14-7E  | 10-22-2014 01:58 AM            |
| 46  | 46  | M7248.D | M8928-P(0)      | FSW20141014OSHCO-7-14-1 5 | 10-22-2014 02:43 AM            |
| 47  | 47  | M7249.D | HF94            |                           | 10-22-2014 03:28 AM            |
| 48  | 48  | M7250.D | IE07 mid        |                           | 10-22-2014 04:12 AM            |

## INJECTION LOG

Directory I:\M\DATA\SM0421\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id      | Miscellaneous             | Injected           |
|-----|-----|---------|----------------|---------------------------|--------------------|
| 1   | 1   | M7441.D | HEXANE         |                           | 11-4-2014 11:10 AM |
| 2   | 2   | M7442.D | IE07 mid       |                           | 11-4-2014 11:54 AM |
| 3   | 3   | M7443.D | CD584PB-P(0)   | Procedural Blank 5-128 14 | 11-4-2014 12:39 PM |
| 4   | 4   | M7444.D | CD585LCS-P(0)  | Laboratory Control Sample | 11-4-2014 01:23 PM |
| 5   | 5   | M7445.D | M8159-P(2)     | NBH14-0029 5-128 14-0495  | 11-4-2014 02:08 PM |
| 6   | 6   | M7446.D | M8160-P(2)     | NBH14-0033 5-128 14-0495  | 11-4-2014 02:52 PM |
| 7   | 7   | M7447.D | M8161-P(2)     | NBH14-0037 5-128 14-0495  | 11-4-2014 03:37 PM |
| 8   | 8   | M7448.D | M8161DUP-P(2)  | Lab Duplicate of NBH14-00 | 11-4-2014 04:21 PM |
| 9   | 9   | M7449.D | M8162-P(2)     | NBH14-0041 5-128 14-0495  | 11-4-2014 05:06 PM |
| 10  | 10  | M7450.D | M8349-P(2)     | NBH14-0181 5-128 14-0495  | 11-4-2014 05:50 PM |
| 11  | 11  | M7451.D | M8350-P(2)     | NBH14-0185 5-128 14-0495  | 11-4-2014 06:35 PM |
| 12  | 12  | M7452.D | M8351-P(2)     | NBH14-0189 5-128 14-0495  | 11-4-2014 07:19 PM |
| 13  | 13  | M7453.D | IE08 mid       |                           | 11-4-2014 08:04 PM |
| 14  | 14  | M7454.D | M8352-P(2)     | NBH14-0193 5-128 14-0495  | 11-4-2014 08:49 PM |
| 15  | 15  | M7455.D | M8353-P(2)     | NBH14-0197 5-128 14-0495  | 11-4-2014 09:33 PM |
| 16  | 16  | M7456.D | M8354-P(2)     | NBH14-0199 5-128 14-0495  | 11-4-2014 10:17 PM |
| 17  | 17  | M7457.D | M8364-P(2)     | NBH14-0233 5-128 14-0495  | 11-4-2014 11:02 PM |
| 18  | 18  | M7458.D | M8366-P(2)     | NBH14-0237 5-128 14-0495  | 11-4-2014 11:47 PM |
| 19  | 19  | M7459.D | M8367-P(2)     | NBH14-0241 5-128 14-0495  | 11-5-2014 12:31 AM |
| 20  | 20  | M7460.D | M8380-P(2)     | NBH14-0302 5-128 14-0495  | 11-5-2014 01:16 AM |
| 21  | 21  | M7461.D | M8381-P(2)     | NBH14-0306 5-128 14-0495  | 11-5-2014 02:00 AM |
| 22  | 22  | M7462.D | M8382-P(2)     | NBH14-0310 5-128 14-0495  | 11-5-2014 02:44 AM |
| 23  | 23  | M7463.D | M8392-P(2)     | NBH14-0121 5-128 14-0495  | 11-5-2014 03:29 AM |
| 24  | 24  | M7464.D | IE07 mid       |                           | 11-5-2014 04:13 AM |
| 25  | 25  | M7465.D | M8392MS-P(0)   | Matrix Spike of NBH14-012 | 11-5-2014 04:58 AM |
| 26  | 26  | M7466.D | M8392MSD-P(0)  | Matrix Spike Duplicate of | 11-5-2014 05:42 AM |
| 27  | 27  | M7467.D | M8393-P(2)     | NBH14-0125 5-128 14-0495  | 11-5-2014 06:27 AM |
| 28  | 28  | M7468.D | M8394-P(2)     | NBH14-0129 5-128 14-0495  | 11-5-2014 07:11 AM |
| 29  | 29  | M7469.D | M8406-P(2)     | NBH14-0177 5-128 14-0495  | 11-5-2014 07:56 AM |
| 30  | 30  | M7470.D | IE08 mid       |                           | 11-5-2014 08:40 AM |
| 31  | 1   | M7471.D | HEXANE         |                           | 11-5-2014 10:48 AM |
| 32  | 2   | M7472.D | HF94           |                           | 11-5-2014 11:33 AM |
| 33  | 3   | M7473.D | IE07 mid       |                           | 11-5-2014 12:17 PM |
| 34  | 4   | M7474.D | CD556PB-P(3)   | Procedural Blank 14-0481  | 11-5-2014 01:02 PM |
| 35  | 5   | M7475.D | CD709PB-P(3)   | Procedural Blank 5-128 14 | 11-5-2014 01:46 PM |
| 36  | 6   | M7476.D | CD557LCS-P(3)  | Laboratory Control Sample | 11-5-2014 02:31 PM |
| 37  | 7   | M7477.D | CD721SRM-P(3)  |                           | 11-5-2014 03:15 PM |
| 38  | 8   | M7478.D | M8497MS-P1(6)  | Matrix Spike of FLD201410 | 11-5-2014 04:00 PM |
| 39  | 9   | M7479.D | M8497MSD-P1(6) | Matrix Spike Duplicate of | 11-5-2014 04:44 PM |
| 40  | 10  | M7480.D | M8934-P(6)     | FLD20141014OSHCO-7-14-7S  | 11-5-2014 05:29 PM |
| 41  | 11  | M7481.D | HF94           |                           | 11-5-2014 06:14 PM |
| 42  | 12  | M7482.D | IE08 mid       |                           | 11-5-2014 06:58 PM |

INJECTION LOG

Directory I:\M\DATA\SM0425\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id        | Miscellaneous             | Injected            |
|-----|-----|---------|------------------|---------------------------|---------------------|
| 1   | 1   | M7643.D | HEXANE           |                           | 11-20-2014 10:28 AM |
| 2   | 2   | M7644.D | IE07 mid         |                           | 11-20-2014 11:12 AM |
| 3   | 3   | M7645.D | M8159-P-D(4)     | NBH14-0029 5-128 14-0495  | 11-20-2014 11:57 AM |
| 4   | 4   | M7646.D | M8160-P-D(4) (1) | NBH14-0033 5-128 14-0495  | 11-20-2014 12:41 PM |
| 5   | 5   | M7647.D | M8161-P-D(4)     | NBH14-0037 5-128 14-0495  | 11-20-2014 01:26 PM |
| 6   | 6   | M7648.D | M8161DUP-P-D(4)  | Lab Duplicate of NBH14-00 | 11-20-2014 02:10 PM |
| 7   | 7   | M7649.D | M8162-P-D(4) (1) |                           | 11-20-2014 02:55 PM |
| 8   | 8   | M7650.D | M8393-P-D(4)     | NBH14-0125 5-128 14-0495  | 11-20-2014 03:39 PM |
| 9   | 9   | M7651.D | M8394-P-D(4)     | NBH14-0129 5-128 14-0495  | 11-20-2014 04:24 PM |
| 10  | 10  | M7652.D | M8406-P-D(4)     | NBH14-0177 5-128 14-0495  | 11-20-2014 05:08 PM |
| 11  | 11  | M7653.D | M8352-P-D(4)     | NBH14-0193 5-128 14-0495  | 11-20-2014 05:52 PM |
| 12  | 12  | M7654.D | M8353-P-D(4)     | NBH14-0197 5-128 14-0495  | 11-20-2014 06:37 PM |
| 13  | 13  | M7655.D | IE08 mid         |                           | 11-20-2014 07:22 PM |
| 14  | 14  | M7656.D | M8354-P-D(4)     | NBH14-0199 5-128 14-0495  | 11-20-2014 08:06 PM |
| 15  | 15  | M7657.D | M8364-P-D(4)     | NBH14-0233 5-128 14-0495  | 11-20-2014 08:51 PM |
| 16  | 16  | M7658.D | M8366-P-D(4)     | NBH14-0237 5-128 14-0495  | 11-20-2014 09:35 PM |
| 17  | 17  | M7659.D | M8367-P-D(4)     | NBH14-0241 5-128 14-0495  | 11-20-2014 10:20 PM |
| 18  | 18  | M7660.D | M8380-P-D(4)     | NBH14-0302 5-128 14-0495  | 11-20-2014 11:05 PM |
| 19  | 19  | M7661.D | M8381-P-D(4)     | NBH14-0306 5-128 14-0495  | 11-20-2014 11:49 PM |
| 20  | 20  | M7662.D | M8382-P-D(4)     | NBH14-0310 5-128 14-0495  | 11-21-2014 12:34 AM |
| 21  | 21  | M7663.D | M8392-P-D(4) (1) | NBH14-0121 5-128 14-0495  | 11-21-2014 01:18 AM |
| 22  | 22  | M7664.D | M8393-P-D(5)     | NBH14-0125 5-128 14-0495  | 11-21-2014 02:03 AM |
| 23  | 23  | M7665.D | M8394-P-D(5)     |                           | 11-21-2014 02:47 AM |
| 24  | 24  | M7666.D | IE07 mid         |                           | 11-21-2014 03:32 AM |
| 25  | 25  | M7667.D | M8406-P-D(5)     |                           | 11-21-2014 04:16 AM |
| 26  | 26  | M7668.D | M8159-P-D(5)     |                           | 11-21-2014 05:01 AM |
| 27  | 27  | M7669.D | M8160-P-D(5)     |                           | 11-21-2014 05:46 AM |
| 28  | 28  | M7670.D | M8161-P-D(5)     |                           | 11-21-2014 06:30 AM |
| 29  | 29  | M7671.D | M8161DUP-P-D(5)  |                           | 11-21-2014 07:15 AM |

(1) Dilutions not needed.

RR 11/21/14

## Calibration Response Factor Report

**Batch:** 14-0495      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0677      **SOP\_NO:** 5-128-13      RFs validated CRD 12/9/2014  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M      **Responses Via** Initial Calibration      **Last Updated** 11/14/2014 9:30:00 AM      **Title:** NBH  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Type: | Column: | MAD:    | 1<br>IE03<br>M7205.D | 2<br>IE05<br>M7207.D | 3<br>IE06<br>M7208.D | 4<br>IE07<br>M7209.D | 5<br>IE08<br>M7210.D | 6<br>IE10<br>M7212.D | 7 | 8 | Curve Fit: | (A)      | (B)      | (C)     | Stat<br>(r^2/RSD): | Qual:   |  |
|-----|-----------|-------|---------|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|------------|----------|----------|---------|--------------------|---------|--|
| 1   | Cl5(96)   | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 2   | Cl2(8)    | 1     | Y       | 1.02677 | 0.82499              | 0.74685              | 0.63118              | 0.55904              | 0.41512              | -                    | - | 6 | Q          | -0.05406 | 0.58100  | 0.02367 | 0.99968            |         |  |
| 3   | Cl3(18)   | 1     | Y       | 1.31210 | 1.10482              | 0.96661              | 0.78724              | 0.69070              | 0.50395              | -                    | - | 6 | Q          | -0.06844 | 0.71262  | 0.03558 | 0.99947            |         |  |
| 4   | Cl3(34)   | s     | 1       | Y       | 2.47273              | 1.36117              | 1.18217              | 1.03139              | 0.92191              | 0.71999              | - | - | 6          | Q        | -0.06938 | 0.92761 | 0.04587            | 0.99994 |  |
| 5   | Cl3(28)   | 1     | Y       | 1.88563 | 1.62148              | 1.53903              | 1.39969              | 1.26450              | 1.01381              | -                    | - | 6 | Q          | -0.09842 | 1.31978  | 0.03237 | 0.99986            |         |  |
| 6   | Cl4(52)   | 1     | Y       | 2.67460 | 1.50893              | 1.27188              | 1.06050              | 0.93014              | 0.70933              | -                    | - | 6 | Q          | -0.07364 | 0.92696  | 0.05816 | 0.99983            |         |  |
| 7   | Cl4(44)   | 1     | Y       | 1.96878 | 1.69047              | 1.60648              | 1.42175              | 1.25645              | 1.00372              | -                    | - | 6 | Q          | -0.09818 | 1.30598  | 0.04163 | 0.99973            |         |  |
| 8   | Cl4(66)   | 1     | Y       | 2.14003 | 1.91334              | 1.75148              | 1.60565              | 1.43266              | 1.15511              | -                    | - | 6 | Q          | -0.10876 | 1.49082  | 0.04098 | 0.99982            |         |  |
| 9   | Cl5(101)  | 1     | Y       | 1.87327 | 1.59373              | 1.70864              | 1.61385              | 1.42978              | 1.22422              | -                    | - | 6 | Q          | -0.08750 | 1.49635  | 0.02623 | 0.99975            |         |  |
| 10  | Cl6(161)  | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 11  | Cl6(152)  | s     | 1       | Y       | 1.02184              | 0.73169              | 0.67623              | 0.59438              | 0.54889              | 0.47996              | - | - | 6          | Q        | -0.02339 | 0.54921 | 0.01882            | 0.99992 |  |
| 12  | Cl5(118)  | 1     | Y       | 1.02402 | 0.91463              | 0.85020              | 0.75415              | 0.68354              | 0.58350              | -                    | - | 6 | Q          | -0.03737 | 0.69686  | 0.02122 | 0.99982            |         |  |
| 13  | Cl6(153)  | 1     | Y       | 0.88266 | 0.81935              | 0.60192              | 0.77537              | 0.66030              | 0.59647              | -                    | - | 6 | Q          | -0.02991 | 0.69018  | 0.00733 | 0.99932            |         |  |
| 14  | Cl5(105)  | 1     | Y       | 1.20312 | 1.04021              | 0.99965              | 0.96015              | 0.82296              | 0.65909              | -                    | - | 6 | Q          | -0.06789 | 0.87004  | 0.02177 | 0.99963            |         |  |
| 15  | Cl6(138)  | 1     | Y       | 1.22541 | 1.06675              | 1.00587              | 0.91669              | 0.84817              | 0.76297              | -                    | - | 6 | Q          | -0.03117 | 0.85646  | 0.02109 | 0.99991            |         |  |
| 16  | Cl7(187)  | 1     | Y       | 1.07415 | 0.94434              | 0.88498              | 0.79082              | 0.74346              | 0.66512              | -                    | - | 6 | Q          | -0.02786 | 0.74881  | 0.01846 | 0.99992            |         |  |
| 17  | Cl6(128)  | 1     | Y       | 1.16100 | 0.91667              | 0.89359              | 0.85607              | 0.84318              | 0.73247              | -                    | - | 6 | Q          | -0.04270 | 0.86786  | 0.00587 | 0.99999            |         |  |
| 18  | Cl7(180)  | 1     | Y       | 1.23170 | 1.08198              | 0.99753              | 0.93689              | 0.88497              | 0.82624              | -                    | - | 6 | Q          | -0.02031 | 0.88592  | 0.01772 | 0.99996            |         |  |
| 19  | Cl7(170)  | 1     | Y       | 1.33635 | 1.19973              | 1.11853              | 1.05917              | 1.00487              | 0.94111              | -                    | - | 6 | Q          | -0.02267 | 1.00845  | 0.01743 | 0.99997            |         |  |
| 20  | Cl8(195)  | 1     | Y       | 1.24821 | 1.10061              | 1.05076              | 0.99234              | 0.94476              | 0.89153              | -                    | - | 6 | Q          | -0.01887 | 0.94735  | 0.01528 | 0.99997            |         |  |
| 21  | Cl9(206)  | 1     | Y       | 1.18038 | 1.03661              | 0.99467              | 0.96457              | 0.91081              | 0.85789              | -                    | - | 6 | Q          | -0.02022 | 0.91869  | 0.01268 | 0.99997            |         |  |
| 22  | Cl10(209) | 1     | Y       | 0.99002 | 0.86426              | 0.82007              | 0.78889              | 0.73849              | 0.67758              | -                    | - | 6 | Q          | -0.02343 | 0.74907  | 0.01198 | 0.99996            |         |  |
| 23  | Signal    | 2     | -       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 24  | Cl5(96)   | I     | 2       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 25  | Cl2(8)    | 2     | Y       | 0.94637 | 0.83650              | 0.76620              | 0.67202              | 0.62199              | 0.48595              | -                    | - | 6 | Q          | -0.05185 | 0.64681  | 0.01712 | 0.99988            |         |  |
| 26  | Cl3(18)   | 2     | Y       | 1.39241 | 1.13741              | 1.00550              | 0.76551              | 0.70491              | 0.54182              | -                    | - | 6 | Q          | -0.05533 | 0.70768  | 0.03799 | 0.99943            |         |  |
| 27  | Cl3(34)   | s     | 2       | Y       | 2.23518              | 1.39531              | 1.20146              | 1.04748              | 0.98379              | 0.79730              | - | - | 6          | Q        | -0.06315 | 0.98749 | 0.03800            | 0.99996 |  |
| 28  | Cl3(28)   | 2     | Y       | 2.05612 | 1.73008              | 1.59254              | 1.42520              | 1.36560              | 1.12979              | -                    | - | 6 | Q          | -0.08759 | 1.40224  | 0.02866 | 0.99996            |         |  |
| 29  | Cl4(52)   | 2     | Y       | 1.32543 | 1.01634              | 1.04226              | 0.82635              | 0.80598              | 0.62728              | -                    | - | 6 | Q          | -0.06549 | 0.83027  | 0.02172 | 0.99971            |         |  |
| 30  | Cl4(44)   | 2     | Y       | 2.26696 | 1.68554              | 1.62828              | 1.44775              | 1.40139              | 1.13801              | -                    | - | 6 | Q          | -0.09853 | 1.44647  | 0.02603 | 0.99996            |         |  |

## Calibration Response Factor Report

**Batch:** 14-0495                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0677              **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M        **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|---------|-----------------------------|-------|
|     |           |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |          |         |         |                             |       |
|     |           |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |         |                             |       |
| 31  | Cl4(66)   |              | Y       | 2.28150 | 1.94181 | 1.76289 | 1.65364 | 1.54066 | 1.31516 | - | - | 6 Q        | -0.08582 | 1.58007 | 0.03256 | 0.99996                     |       |
| 32  | Cl5(101)  |              | Y       | 1.56754 | 1.17777 | 1.01633 | 1.01029 | 0.86410 | 0.96534 | - | - | 6 Q        | 0.04538  | 0.80794 | 0.03732 | 0.99968                     |       |
| 33  | Cl6(161)  | I            | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -       | -                           |       |
| 34  | Cl6(152)  | s            | Y       | 0.69735 | 0.69234 | 0.57622 | 0.54795 | 0.47409 | 0.53607 | - | - | 6 Q        | 0.02791  | 0.43955 | 0.02156 | 0.99966                     |       |
| 35  | Cl5(118)  |              | Y       | 1.37021 | 0.63622 | 0.73177 | 0.70795 | 0.59017 | 0.57149 | - | - | 6 Q        | -0.00725 | 0.58778 | 0.02195 | 0.99943                     |       |
| 36  | Cl6(153)  |              | Y       | 1.07545 | 0.86632 | 0.79677 | 0.69128 | 0.63279 | 0.63321 | - | - | 6 Q        | 0.00578  | 0.60663 | 0.02539 | 0.99983                     |       |
| 37  | Cl5(105)  |              | Y       | 1.20126 | 1.01455 | 0.97857 | 0.92200 | 0.88341 | 0.94009 | - | - | 6 Q        | 0.02686  | 0.84840 | 0.01736 | 0.99996                     |       |
| 38  | Cl6(138)  |              | Y       | 0.67940 | 0.66822 | 0.62305 | 0.61544 | 0.61172 | 0.68345 | - | - | 6 Q        | 0.03117  | 0.58132 | 0.00625 | 0.99999                     |       |
| 39  | Cl7(187)  |              | Y       | 0.98245 | 0.80842 | 0.76633 | 0.69224 | 0.65688 | 0.68482 | - | - | 6 Q        | 0.01569  | 0.62875 | 0.01795 | 0.99993                     |       |
| 40  | Cl6(128)  |              | Y       | 1.29556 | 1.08544 | 1.04052 | 0.96581 | 0.92997 | 0.98492 | - | - | 6 Q        | 0.02722  | 0.89128 | 0.01958 | 0.99996                     |       |
| 41  | Cl7(180)  |              | Y       | 1.15986 | 0.95311 | 0.92022 | 0.85738 | 0.83699 | 0.89707 | - | - | 6 Q        | 0.02897  | 0.79906 | 0.01566 | 0.99998                     |       |
| 42  | Cl7(170)  |              | Y       | 1.17715 | 1.00944 | 0.98379 | 0.93732 | 0.91404 | 0.98260 | - | - | 6 Q        | 0.03138  | 0.87743 | 0.01381 | 0.99998                     |       |
| 43  | Cl8(195)  |              | Y       | 1.05313 | 0.90773 | 0.89676 | 0.85979 | 0.84072 | 0.91395 | - | - | 6 Q        | 0.03255  | 0.80577 | 0.01137 | 0.99998                     |       |
| 44  | Cl9(206)  |              | Y       | 0.94156 | 0.80488 | 0.80171 | 0.77400 | 0.75899 | 0.82033 | - | - | 6 Q        | 0.02717  | 0.73041 | 0.00888 | 0.99999                     |       |
| 45  | Cl10(209) |              | Y       | 0.76301 | 0.64557 | 0.63678 | 0.60540 | 0.58689 | 0.62005 | - | - | 6 Q        | 0.01548  | 0.56751 | 0.00888 | 0.99998                     |       |



## Calibration Response Factor Report

**Batch:** 14-0495                      **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0677                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte: | Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A) | (B) | (C) | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|-----|-----|-----|-----------------------------|-------|
|     |          |       | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - |            |     |     |     |                             |       |
|     |          |       |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D | - | - |            |     |     |     |                             |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:                 | Evaluate: |
|------------|-----------------|------------------------------|-----------|
| L          | Linear          | y = Bx + C                   | r-squared |
| RF         | Average RF      | y = Bx                       | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0                   | r-squared |
| Q          | Quadratic       | y = Ax <sup>2</sup> + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax <sup>2</sup> + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:                    |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|------------------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C                   |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx                       |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0                   |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0495      **Project Test Code:** Master 128(S)      RFs validated CRD 12/9/2014  
**Data Set:** DP-14-0677      **SOP\_NO:** 5-128-13  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417F.M      **Responses Via** Initial Calibration      **Last Updated** 12/5/2014 3:22:00 PM      **Title:** NBH 101 only to compliment B method  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417F.M

| No: | Analyte: | Type: | Column: | MQO:    | 1       | 2       | 3       | 4       | 5       | 6    | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)      | Stat (r^2/RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|------|---|---|------------|----------|---------|----------|-----------------|-------|
|     |          |       |         |         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10 |   |   | Levels:    |          |         |          |                 |       |
| 1   | Cl5(96)  | I     | 1       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               | -     |
| 2   | Cl5(101) | 1     | Y       | 2.10045 | 1.55920 | 1.68988 | 1.70104 | 1.46973 | 1.35619 | -    | - | 6 | Q          | -0.05296 | 1.51726 | 0.02697  | 0.99964         |       |
| 3   | Signal   | 2     | -       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               | -     |
| 4   | Cl5(96)  | I     | 2       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -        | -       | -        | -               | -     |
| 5   | Cl5(101) | 2     | Y       | 1.67256 | 2.33575 | 1.99479 | 1.98711 | 2.06595 | 1.40514 | -    | - | 6 | Q          | -0.26866 | 2.27420 | -0.02348 | 0.99966         |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0495 **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0677 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**Method:** I:\M\DATA\MM0417C.M  
**Title:** NBH  
**Last Update:** Fri Nov 14 9:30 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:     | Quant Time:      | Acquisition Time:    |
|-----|------|--------------------------|------------------|------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Oct 28 9:02 2014 | Oct 28 8:27 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 11:58 PM |

**Method:** I:\M\DATA\MM0417F.M  
**Title:** NBH 101 only to compliment B method  
**Last Update:** Fri Dec 05 15:22 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:      | Quant Time:       | Acquisition Time:    |
|-----|------|--------------------------|-------------------|-------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Dec 05 15:22 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 11:58 PM |

## ICC Summary Report

**Batch:** 14-0495 **Data Set:** DP-14-0677  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0495 **Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04000 | 0.04325 | 8.3    |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04000 | 0.04152 | 3.8    |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04104 | 2.5    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04000 | 0.04097 | 2.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04000 | 0.04111 | 2.8    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04000 | 0.04166 | 4.3    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04000 | 0.04028 | 0.8    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04000 | 0.03706 | 7.3    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04020 | 0.04329 | 7.8    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04000 | 0.04151 | 3.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04000 | 0.03933 | 1.8    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04000 | 0.03777 | 5.5    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04000 | 0.04232 | 5.8    |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04000 | 0.04280 | 7.0    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04000 | 0.03934 | 1.8    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04000 | 0.04137 | 3.5    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04000 | 0.04068 | 1.8    |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04000 | 0.03988 | 0.3    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04000 | 0.03884 | 3.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04000 | 0.03908 | 2.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04000 | 0.04248 | 6.3    |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04000 | 0.03989 | 0.3    |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04170 | 4.3    |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04000 | 0.04093 | 2.3    |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04000 | 0.04057 | 1.5    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04000 | 0.04125 | 3.3    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04000 | 0.04095 | 2.5    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04000 | 0.03828 | 4.3    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04020 | 0.04128 | 2.8    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04000 | 0.03951 | 1.3    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04000 | 0.04346 | 8.8    |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04000 | 0.04078 | 2.0    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04000 | 0.04108 | 2.8    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04000 | 0.04269 | 6.8    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04000 | 0.04136 | 3.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04000 | 0.04073 | 1.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04000 | 0.04050 | 1.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04000 | 0.03956 | 1.0    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04000 | 0.03878 | 3.0    |

## ICC Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master\_128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0495 Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.04000 | 0.03893 | 2.8    |

MQO: Only compounds flagged with "Y" will be counted towards  
MQO exceedences.

Mean PD: 3.49  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## ICC Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master\_128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0495 Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte: | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | C15(96)  | I     | 1    | -    |         |         |        |
| 2   | C15(101) |       | 1    | Y    | 0.04000 | 0.03858 | 3.5    |
| 4   | C15(96)  | I     | 2    | -    |         |         |        |
| 5   | C15(101) |       | 2    | Y    | 0.04000 | 0.03850 | 3.8    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 3.65  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
 Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
 Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED

Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7442.D    |       | M7464.D    |         | M7644.D    |         |      |
|-----|-----------|-------|------|------|---------|------------|-------|------------|---------|------------|---------|------|
|     |           |       |      |      |         | IE07 mid   |       | IE07 mid   |         | IE07 mid   |         |      |
|     |           |       |      |      |         | 11/04/2014 | 11:54 | 11/05/2014 | 04:14   | 11/20/2014 | 11:12   |      |
|     |           |       |      |      | MID     | % Diff     | MID   | % Diff     | MID     | % Diff     |         |      |
| 1   | Cl5(96)   | I     | 1    | -    |         |            |       |            |         |            |         |      |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.04042    | 0.8   | 0.03977    | -0.8    | 0.03738    | -6.7    |      |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.04076    | 1.5   | 0.03938    | -1.9    | 0.03726    | -7.2    |      |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03986    | -0.4  | 0.04024    | 0.6     | 0.03811    | -4.7    |      |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.03960    | -1.4  | 0.04191    | 4.4     | 0.03818    | -4.9    |      |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03919    | -2.1  | 0.04005    | 0.0     | 0.03713    | -7.3    |      |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.04054    | 0.9   | 0.04117    | 2.5     | 0.03953    | -1.6    |      |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.04329    | 8.0   | 0.04061    | 1.3     | 0.03764    | -6.1    |      |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.03690    | -7.9  | 0.03917    | -2.3    | 0.03833    | -4.4    |      |
| 10  | Cl6(161)  | I     | 1    | -    |         |            |       |            |         |            |         |      |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.03967    | -1.2  | 0.04158    | 3.5     | 0.04135    | 3.0     |      |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.03966    | -1.2  | 0.03904    | -2.8    | 0.03539    | -11.9   |      |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.04075    | 1.5   | 0.03696    | -8.0    | 0.04065    | 1.2     |      |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.04099    | 2.2   | 0.04025    | 0.3     | 0.03930    | -2.0    |      |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.03944    | -1.8  | 0.03960    | -1.4    | 0.03966    | -1.2    |      |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04106    | 2.2   | 0.03988    | -0.7    | 0.04074    | 1.4     |      |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.04347    | 8.2   | 0.04077    | 1.5     | 0.03725    | -7.2    |      |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.04316    | 7.5   | 0.03914    | -2.5    | 0.04081    | 1.6     |      |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.04247    | 5.8   | 0.03903    | -2.8    | 0.04047    | 0.8     |      |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04463    | 11.1  | 0.03932    | -2.1    | 0.04202    | 4.6     |      |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.04526    | 12.9  | 0.03878    | -3.2    | 0.04222    | 5.3     |      |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04588    | 14.2  | 0.03852    | -4.1    | 0.04405    | 9.7     |      |
| 24  | Cl5(96)   | I     | 2    | -    |         |            |       |            |         |            |         |      |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03965    | -1.1  | 0.03823    | -4.6    | 0.03632    | -9.4    |      |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.04106    | 2.2   | 0.04059    | 1.1     | 0.03648    | -9.2    |      |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03997    | -0.1  | 0.03916    | -2.1    | 0.03760    | -6.0    |      |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.03794    | -5.5  | 0.03768    | -6.2    | 0.03503    | -12.8   |      |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.03986    | -0.4  | 0.03996    | -0.2    | 0.03689    | -7.9    |      |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.04200    | 4.6   | 0.04180    | 4.1     | 0.03934    | -2.0    |      |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04054    | 1.1   | 0.04101    | 2.3     | 0.03822    | -4.6    |      |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03993    | -0.4  | 0.04047    | 1.0     | 0.03650    | -8.9    |      |
| 33  | Cl6(161)  | I     | 2    | -    |         |            |       |            |         |            |         |      |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04206    | 4.7   | 0.03878    | -3.4    | 0.03998    | -0.4    |      |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03973    | -1.1  | 0.04017    | 0.0     | 0.03724    | -7.3    |      |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03926    | -2.2  | 0.03847    | -4.2    | 0.03986    | -0.7    |      |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03892    | -3.0  | 0.03941    | -1.8    | 0.03809    | -5.1    |      |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04095    | 2.0   | 0.04276    | 6.5     | 0.04333    | 7.9     |      |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04198    | 4.5   | 0.04072    | 1.4     | 0.04284    | 6.7     |      |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04175    | 4.0   | 0.04085    | 1.7     | 0.04152    | 3.4     |      |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04329    | 7.8   | 0.04114    | 2.4     | 0.04267    | 6.2     |      |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.04341    | 8.1   | 0.04135    | 3.0     | 0.04252    | 5.9     |      |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04578    | 14.0  | 0.04198    | 4.5     | 0.04444    | 10.7    |      |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.05133    | 28.1  | N          | 0.04289 | 7.0        | 0.04522 | 12.8 |

## CCV Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7442.D     |        | M7464.D |         | M7644.D |         |      |
|---|-----------|-------|------|------|---------|-------------|--------|---------|---------|---------|---------|------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff  | MID     | % Diff  |      |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.05029     | 25.2   | N       | 0.04330 | 7.8     | 0.04653 | 15.9 |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 5.3    |         | 2.8     |         | 5.9     |      |
|   |           |       |      |      |         | Time Check: | < 24   |         | < 24    |         | < 24    |      |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |



## CCV Summary Report

**Batch:** 14-0495 **Data Set:** DP-14-0677  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

**M7666.D**

IE07 mid

11/21/2014 03:32

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.03713 | -7.4   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.03767 | -6.2   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03773 | -5.7   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.03938 | -1.9   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03770 | -5.8   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.03939 | -1.9   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.03757 | -6.3   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.03864 | -3.6   |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04144 | 3.2    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.03660 | -8.9   |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.03661 | -8.8   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.03937 | -1.9   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.03885 | -3.3   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04045 | 0.7    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03980 | -0.9   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.03934 | -2.0   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.03916 | -2.5   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04025 | 0.2    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.04050 | 1.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04152 | 3.4    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03713 | -7.4   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03658 | -8.9   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03823 | -4.4   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.03659 | -8.9   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.03913 | -2.3   |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.03667 | -8.7   |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.03891 | -2.9   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03960 | -1.2   |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04244 | 5.7    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.03925 | -2.3   |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.03739 | -6.9   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03750 | -6.5   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04219 | 5.1    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04093 | 1.9    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04074 | 1.4    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04170 | 3.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.04183 | 4.2    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04342 | 8.1    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.04574 | 14.1   |

## CCV Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

M7666.D

IE07 mid

11/21/2014 03:32

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.04726 | 17.7   |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 5.0  
Time Check: < 24

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0495 **Data Set:** DP-14-0677  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7453.D                      |        | M7470.D                      |        | M7655.D                      |        |
|-----|-----------|-------|------|------|---------|------------------------------|--------|------------------------------|--------|------------------------------|--------|
|     |           |       |      |      |         | MID                          | % Diff | MID                          | % Diff | MID                          | % Diff |
|     |           |       |      |      |         | IE08 mid<br>11/04/2014 20:05 |        | IE08 mid<br>11/05/2014 08:41 |        | IE08 mid<br>11/20/2014 19:22 |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.07502                      | -6.4   | 0.07554                      | -5.8   | 0.07272                      | -9.3   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.07379                      | -8.1   | 0.07472                      | -7.0   | 0.07322                      | -8.8   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07685                      | -3.9   | 0.07817                      | -2.3   | 0.07670                      | -4.1   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07822                      | -2.6   | 0.08002                      | -0.4   | 0.07452                      | -7.2   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07653                      | -4.4   | 0.07836                      | -2.1   | 0.07368                      | -8.0   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07755                      | -3.4   | 0.07866                      | -2.1   | 0.07615                      | -5.2   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07666                      | -4.4   | 0.08051                      | 0.4    | 0.07225                      | -9.9   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.07483                      | -6.6   | 0.08503                      | 6.1    | 0.08801                      | 9.8    |
| 10  | Cl6(161)  | I     | 1    | -    |         |                              |        |                              |        |                              |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.08177                      | 1.8    | 0.08026                      | -0.1   | 0.08221                      | 2.4    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.07349                      | -8.5   | 0.07643                      | -4.8   | 0.06854                      | -14.7  |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.07897                      | -1.7   | 0.07973                      | -0.7   | 0.07669                      | -4.5   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.07686                      | -4.2   | 0.07470                      | -6.9   | 0.07472                      | -6.9   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07711                      | -4.0   | 0.07832                      | -2.5   | 0.07602                      | -5.4   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.07821                      | -2.6   | 0.07801                      | -2.9   | 0.07963                      | -0.9   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.08151                      | 1.5    | 0.07331                      | -8.7   | 0.07729                      | -3.8   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07699                      | -4.1   | 0.07896                      | -1.7   | 0.07735                      | -3.7   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07712                      | -4.0   | 0.07910                      | -1.5   | 0.07634                      | -5.0   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.07783                      | -3.1   | 0.07988                      | -0.5   | 0.07843                      | -2.4   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07637                      | -4.7   | 0.07832                      | -2.3   | 0.07763                      | -3.2   |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07582                      | -5.6   | 0.07713                      | -4.0   | 0.07922                      | -1.4   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07089                      | -11.6  | 0.07221                      | -9.9   | 0.07181                      | -10.4  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07252                      | -9.7   | 0.07310                      | -9.0   | 0.07558                      | -5.9   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07543                      | -5.7   | 0.07413                      | -7.3   | 0.07611                      | -4.9   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07172                      | -10.7  | 0.07377                      | -8.2   | 0.07181                      | -10.6  |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.07242                      | -9.6   | 0.07683                      | -4.1   | 0.07558                      | -5.6   |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.08022                      | -0.1   | 0.08362                      | 4.1    | 0.07916                      | -1.4   |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.07927                      | -1.1   | 0.08000                      | -0.2   | 0.07559                      | -5.7   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.07851                      | -2.1   | 0.07400                      | -7.7   | 0.08080                      | 0.8    |
| 33  | Cl6(161)  | I     | 2    | -    |         |                              |        |                              |        |                              |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.08176                      | 1.8    | 0.08155                      | 1.5    | 0.08322                      | 3.6    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.08087                      | 0.7    | 0.07313                      | -9.0   | 0.08139                      | 1.3    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.07481                      | -6.9   | 0.07404                      | -7.8   | 0.07347                      | -8.5   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.07844                      | -2.2   | 0.07531                      | -6.1   | 0.07388                      | -7.9   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08372                      | 4.2    | 0.08607                      | 7.2    | 0.08358                      | 4.1    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.07995                      | -0.5   | 0.07726                      | -3.8   | 0.08120                      | 1.1    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.08087                      | 0.7    | 0.07840                      | -2.4   | 0.07867                      | -2.1   |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08198                      | 2.1    | 0.08041                      | 0.1    | 0.08116                      | 1.0    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08166                      | 1.7    | 0.08052                      | 0.2    | 0.08049                      | 0.2    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08216                      | 2.3    | 0.08331                      | 3.7    | 0.08321                      | 3.6    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.08283                      | 3.3    | 0.08560                      | 6.8    | 0.08576                      | 7.0    |

## CCV Summary Report

**Batch:** 14-0495 **Data Set:** DP-14-0677  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No:  | Analyte:  | Type: | Col: | MQO: | CAL     | M7453.D            |                | M7470.D        |                | M7655.D |        |
|--|-----------|-------|------|------|---------|--------------------|----------------|----------------|----------------|---------|--------|
|  |           |       |      |      |         | MID                | % Diff         | MID            | % Diff         | MID     | % Diff |
| 45   | Cl10(209) |       | 2    | Y    | 0.08032 | 0.08304            | 3.4            | 0.08618        | 7.3            | 0.08791 | 9.4    |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | <b>Mean PD:</b>    | <b>4.2</b>     | <b>4.2</b>     | <b>5.3</b>     |         |        |
|  |           |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b> | <b>&lt; 24</b> | <b>&lt; 24</b> |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7442.D            |                | M7464.D          |                | M7644.D          |        |
|--|----------|-------|------|------|---------|--------------------|----------------|------------------|----------------|------------------|--------|
|  |          |       |      |      |         | MID                | % Diff         | MID              | % Diff         | MID              | % Diff |
|  |          |       |      |      |         | 11/04/2014 11:54   |                | 11/05/2014 04:14 |                | 11/20/2014 11:12 |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                    |                |                  |                |                  |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.04008 | 0.03760            | -6.2           | 0.04093          | 2.1            | 0.03783          | -5.6   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                    |                |                  |                |                  |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.04008 | 0.04344            | 8.4            | 0.03623          | -9.6           | 0.03839          | -4.2   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>    | <b>7.3</b>     | <b>5.9</b>       | <b>4.9</b>     |                  |        |
|  |          |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b> | <b>&lt; 24</b>   | <b>&lt; 24</b> |                  |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

Batch: 14-0495 Data Set: DP-14-0677  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

M7666.D  
IE07 mid  
11/21/2014 03:32

| No: | Analyte: | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)  | I     | 1    | -    |         |         |        |
| 2   | Cl5(101) |       | 1    | Y    | 0.04008 | 0.03860 | -3.7   |
| 4   | Cl5(96)  | I     | 2    | -    |         |         |        |
| 5   | Cl5(101) |       | 2    | Y    | 0.04008 | 0.04171 | 4.1    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: **3.9**  
Time Check: **< 24**

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

|  |   |
|--|---|
| <b>Batch:</b> <u>14-0495</u>   | <b>Data Set:</b> <u>DP-14-0677</u>      |
| <b>Project Test Code:</b> <u>Master 128(S)</u>                       | <b>SOP_NO:</b> <u>5-128-13</u>          |
| <b>Project Name:</b> <u>USACE/NAE - New Bedford Harbor LTM Study</u> | <b>Project Number:</b> <u>100053747</u> |

**Matrix:** SED

**Calibration File:** MM0417F.M      **Last Updated:** 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7453.D                      |                | M7470.D                      |                | M7655.D                      |        |
|--|----------|-------|------|------|---------|------------------------------|----------------|------------------------------|----------------|------------------------------|--------|
|  |          |       |      |      |         | MID                          | % Diff         | MID                          | % Diff         | MID                          | % Diff |
|  |          |       |      |      |         | IE08 mid<br>11/04/2014 20:05 |                | IE08 mid<br>11/05/2014 08:41 |                | IE08 mid<br>11/20/2014 19:22 |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                              |                |                              |                |                              |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.08016 | 0.07456                      | -7.0           | 0.08081                      | 0.8            | 0.07821                      | -2.4   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                              |                |                              |                |                              |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.08016 | 0.07774                      | -3.0           | 0.08189                      | 2.2            | 0.07934                      | -1.0   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>              | <b>5.0</b>     | <b>1.5</b>                   | <b>1.7</b>     |                              |        |
|  |          |       |      |      |         | <b>Time Check:</b>           | <b>&lt; 24</b> | <b>&lt; 24</b>               | <b>&lt; 24</b> |                              |        |

**CCV Acceptance Criteria:**

|                   |    |                       |
|-------------------|----|-----------------------|
| Frequency Hours:  | 24 | <b>Qual:</b> <u>N</u> |
| Mean PD(%):       | 15 | <b>Qual:</b> <u>N</u> |
| Individual PD(%): | 20 | <b>Qual:</b> <u>N</u> |

Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : NA  
 Total Cpnds : 45

IE03 =M7205.D IE05 =M7207.D IE06 =M7208.D IE07 =M7209.D  
 IE08 =M7210.D IE10 =M7212.D

| Compound         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|------------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)      | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C12(8)         | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 C13(18)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 4 s C13(34)      | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 5 C13(28)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 6 C14(52)        | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 7 C14(44)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 8 C14(66)        | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 9 C15(101)       | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 10 I C16(161)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 11 s C16(152)    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 12 C15(118)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 13 C16(153)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 14 C15(105)      | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 15 C16(138)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 16 C17(187)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 17 C16(128)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 18 C17(180)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 19 C17(170)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 20 C18(195)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 21 C19(206)      | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 22 C110(209)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 23 Signal #2     | -----   | -----   | -----   | -----   | -----   | -----   |
| 24 I C15(96) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 25 C12(8) #2     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 26 C13(18) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 27 s C13(34) #2  | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 28 C13(28) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 29 C14(52) #2    | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 30 C14(44) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 31 C14(66) #2    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 32 C15(101) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 33 I C16(161) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 34 s C16(152) #2 | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 35 C15(118) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 36 C16(153) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 37 C15(105) #2   | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 38 C16(138) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 39 C17(187) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 40 C16(128) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 41 C17(180) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 42 C17(170) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 43 C18(195) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 44 C19(206) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 45 C110(209) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015



Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 5

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound       | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C15(101)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 Signal #2    | -----   | -----   | -----   | -----   | -----   | -----   |
| 4 I C15(96) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 5 C15(101) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2021371m  | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4304957   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12822282m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 28199596m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.40    | 119959m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 106015    | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.48    | 687843m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.58    | 473925m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 49812m    | BelowCal | ng    |
| 3) C13(18)                  | 12.13    | 63919m    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 91859m    | BelowCal | ng    |
| 6) C14(52)                  | 15.84    | 129752    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 95909     | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 103819m   | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 90878m    | BelowCal | ng    |
| 12) C15(118)                | 22.40    | 106241m   | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 91576m    | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 124823m   | BelowCal | ng    |
| 15) C16(138)                | 24.53    | 127136m   | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 111442m   | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 120454m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 127788    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 138646m   | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 129501    | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 121956m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 102714m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 291232m   | BelowCal | ng    |
| 26) C13(18) #2              | 15.00    | 430280m   | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 635375m   | BelowCal | ng    |
| 29) C14(52) #2              | 19.15f   | 407881m   | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 700530m   | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 702095m   | BelowCal | ng    |
| 32) C15(101) #2             | 23.30f   | 369053m   | BelowCal | ng    |
| 35) C15(118) #2             | 26.37    | 931211m   | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 730887    | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 816392    | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 461727m   | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 667680    | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 880477m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 788251m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 800002m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 715719m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 637238m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 518551m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2103011   | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4562564   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12416297m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 27129752m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.39    | 297705    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 348526    | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.47    | 1801754m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.57    | 1960933m  | BelowCal | ng    |
| Spiked Amount               | 0.0104   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 180784    | BelowCal | ng    |
| 3) C13(18)                  | 12.12    | 242567    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 356002    | BelowCal | ng    |
| 6) C14(52)                  | 15.83    | 330341    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 371149    | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 419278    | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 349240m   | BelowCal | ng    |
| 12) C15(118)                | 22.39    | 435665    | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 390283m   | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 495013m   | BelowCal | ng    |
| 15) C16(138)                | 24.54    | 508129    | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 449817    | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 436637m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 515383    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 571467    | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 524255m   | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 492822m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 411674m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 1082243m  | BelowCal | ng    |
| 26) C13(18) #2              | 14.99    | 1474380m  | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 2242630m  | BelowCal | ng    |
| 29) C14(52) #2              | 19.14    | 1313663m  | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 2184906m  | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 2512274m  | BelowCal | ng    |
| 32) C15(101) #2             | 23.22f   | 2401459m  | BelowCal | ng    |
| 35) C15(118) #2             | 26.34    | 1802006m  | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 2453717   | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 2870795   | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 1892629m  | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 2289736   | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3074334  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 2699532  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 2859094m | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 2571011m | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 2275330m | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 1828475m | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc          | Units |
|-----------------------------|----------|-----------|---------------|-------|
| Internal Standards          |          |           |               |       |
| 1) I C15(96)                | 17.39    | 2225995   | 0.10000       | ng    |
| 10) I C16(161)              | 23.21    | 4815577   | 0.10000       | ng    |
| 24) I C15(96) #2            | 20.51    | 13716870m | 0.10000       | ng    |
| 33) I C16(161) #2           | 26.79    | 29503850m | 0.10000       | ng    |
| System Monitoring Compounds |          |           |               |       |
| 4) s C13(34)                | 13.40    | 526303    | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 11) s C16(152)              | 20.48    | 653892    | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| 27) s C13(34) #2            | 16.47    | 3296041m  | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 34) s C16(152) #2           | 23.58    | 3413733m  | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| Target Compounds            |          |           |               |       |
| 2) C12(8)                   | 10.20    | 333163    | BelowCal      | ng    |
| 3) C13(18)                  | 12.12    | 432057    | BelowCal      | ng    |
| 5) C13(28)                  | 14.21    | 687914    | BelowCal      | ng    |
| 6) C14(52)                  | 15.83    | 566807    | BelowCal      | ng    |
| 7) C14(44)                  | 16.70    | 718063    | BelowCal      | ng    |
| 8) C14(66)                  | 18.60    | 781317    | BelowCal      | ng    |
| 9) C15(101)                 | 19.73    | 762207m   | BelowCal      | ng    |
| 12) C15(118)                | 22.39    | 822121    | 0.03093       | ng    |
| 13) C16(153)                | 23.43 TW | 582042m   | BelowCal      | ng    |
| 14) C15(105)                | 23.44 TW | 965663m   | BelowCal      | ng    |
| 15) C16(138)                | 24.53    | 972641    | BelowCal      | ng    |
| 16) C17(187)                | 25.29    | 855745    | BelowCal      | ng    |
| 17) C16(128)                | 25.63    | 864076m   | BelowCal      | ng    |
| 18) C17(180)                | 27.16    | 964577    | BelowCal      | ng    |
| 19) C17(170)                | 27.96    | 1081580   | BelowCal      | ng    |
| 20) C18(195)                | 29.04    | 1016052   | 0.02214       | ng    |
| 21) C19(206)                | 30.30 e  | 959902m   | BelowCal      | ng    |
| 22) C110(209)               | 30.90    | 792978    | BelowCal      | ng    |
| 25) C12(8) #2               | 13.10    | 2106184m  | BelowCal      | ng    |
| 26) C13(18) #2              | 14.99    | 2769502m  | BelowCal      | ng    |
| 28) C13(28) #2              | 17.76    | 4386422m  | BelowCal      | ng    |
| 29) C14(52) #2              | 19.14    | 2862174m  | BelowCal      | ng    |
| 30) C14(44) #2              | 19.96    | 4484836m  | BelowCal      | ng    |
| 31) C14(66) #2              | 22.35    | 4845930m  | BelowCal      | ng    |
| 32) C15(101) #2             | 23.22f   | 5513291m  | BelowCal      | ng    |
| 35) C15(118) #2             | 26.35    | 4335255m  | BelowCal      | ng    |
| 36) C16(153) #2             | 26.93    | 4720338   | 1858066.56915 | ng    |
| 37) C15(105) #2             | 27.20    | 5791618   | 1122307.10620 | ng    |
| 38) C16(138) #2             | 27.78    | 3691173m  | BelowCal      | ng    |
| 39) C17(187) #2             | 28.14    | 4540027   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc          | Units |
|-----|--------------|-------|----------|---------------|-------|
| 40) | C16(128) #2  | 28.54 | 6164428  | BelowCal      | ng    |
| 41) | C17(180) #2  | 29.58 | 5451699  | BelowCal      | ng    |
| 42) | C17(170) #2  | 30.21 | 5828332m | 1341992.36163 | ng    |
| 43) | C18(195) #2  | 31.08 | 5312720  | BelowCal      | ng    |
| 44) | C19(206) #2  | 32.18 | 4740147m | BelowCal      | ng    |
| 45) | C110(209) #2 | 32.62 | 3772500m | 1559880.63544 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response    | Conc          | Units |
|------------------------------------|--------|-------------|---------------|-------|
| <b>Internal Standards</b>          |        |             |               |       |
| 1) I C15(96)                       | 17.39  | 2400478     | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5366502     | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 14992953m   | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34497986    | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |             |               |       |
| 4) s C13(34)                       | 13.40  | 990336      | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 1280995     | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 6281919m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58  | 7591525m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| <b>Target Compounds</b>            |        |             |               |       |
| 2) C12(8)                          | 10.21  | e 607269    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | e 758928    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | e 1349346   | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | e 1019304   | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | e 1370610   | 4937947.47625 | ng    |
| 8) C14(66)                         | 18.60  | e 1544814   | BelowCal      | ng    |
| 9) C15(101)                        | 19.73  | e 1552699m  | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | e 1625326   | BelowCal      | ng    |
| 13) C16(153)                       | 23.43  | TW 1671077m | BelowCal      | ng    |
| 14) C15(105)                       | 23.44  | TW 2067241m | BelowCal      | ng    |
| 15) C16(138)                       | 24.53  | E 1975640   | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | e 1704362m  | BelowCal      | ng    |
| 17) C16(128)                       | 25.63  | e 1845001m  | BelowCal      | ng    |
| 18) C17(180)                       | 27.16  | E 2019174m  | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 2282709   | 3008040.19192 | ng    |
| 20) C18(195)                       | 29.04  | E 2138682m  | BelowCal      | ng    |
| 21) C19(206)                       | 30.30  | E 2074698m  | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 1700197m  | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | e 4038278m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | e 4609294m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | e 8581359m  | 2635734.36911 | ng    |
| 29) C14(52) #2                     | 19.14  | e 4960711m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96  | e 8717176m  | 1574158.07943 | ng    |
| 31) C14(66) #2                     | 22.36  | e 9936993m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | e 12947398m | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | 9808234m    | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 9577231   | 5152267.10485 | ng    |
| 37) C15(105) #2                    | 27.20  | E 12760987  | 3375570.13183 | ng    |
| 38) C16(138) #2                    | 27.78  | e 8526537m  | 1389497.67562 | ng    |
| 39) C17(187) #2                    | 28.14  | E 9590626   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units            |
|-----|--------------|-------|----------|-----------|------------------|
| 40) | C16(128) #2  | 28.54 | E        | 13380771  | BelowCal ng      |
| 41) | C17(180) #2  | 29.58 | E        | 11878441m | BelowCal ng      |
| 42) | C17(170) #2  | 30.21 | E        | 12986040m | 4087411.97930 ng |
| 43) | C18(195) #2  | 31.08 | E        | 11911883m | BelowCal ng      |
| 44) | C19(206) #2  | 32.18 | E        | 10701956m | BelowCal ng      |
| 45) | C110(209) #2 | 32.62 | E        | 8387432m  | 5983940.61406 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response      | Conc          | Units |
|------------------------------------|--------|---------------|---------------|-------|
| <b>Internal Standards</b>          |        |               |               |       |
| 1) I C15(96)                       | 17.39  | 2523572       | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5424577       | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 15446142m     | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34872167      | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |               |               |       |
| 4) s C13(34)                       | 13.40  | 1861197       | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 2391536       | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 12156621m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 13279030m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| <b>Target Compounds</b>            |        |               |               |       |
| 2) C12(8)                          | 10.21  | E 1130878     | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | E 1399997     | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | E 2563059     | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | E 1879706     | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | E 2546734m    | 8209713.15303 | ng    |
| 8) C14(66)                         | 18.60  | E 2898127     | BelowCal      | ng    |
| 9) C15(101)                        | 19.74  | E 2892299m    | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | E 2978206     | BelowCal      | ng    |
| 13) C16(153)                       | 23.44  | TW e 2876946m | BelowCal      | ng    |
| 14) C15(105)                       | 23.45  | TW e 3582092m | 1460512.29312 | ng    |
| 15) C16(138)                       | 24.54  | E 3695490     | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | E 3239289     | BelowCal      | ng    |
| 17) C16(128)                       | 25.64  | E 3673746m    | 3005443.36077 | ng    |
| 18) C17(180)                       | 27.15  | E 3855848m    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 4378231     | 5123824.53354 | ng    |
| 20) C18(195)                       | 29.04  | E 4116319m    | BelowCal      | ng    |
| 21) C19(206)                       | 30.31  | E 3960506m    | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 3217630m    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | E 7701304     | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | E 8745402m    | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | E 16942159    | 4721046.44848 | ng    |
| 29) C14(52) #2                     | 19.14  | E 9969394     | 3586542.90657 | ng    |
| 30) C14(44) #2                     | 19.96  | E 17386149m   | 5402544.89334 | ng    |
| 31) C14(66) #2                     | 22.35  | E 19075871m   | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | E 25811518m   | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 16530172m   | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 17723976    | 8475069.04022 | ng    |
| 37) C15(105) #2                    | 27.20  | E 24719069    | 5584053.95798 | ng    |
| 38) C16(138) #2                    | 27.78  | E 17133888m   | 4026737.36316 | ng    |
| 39) C17(187) #2                    | 28.14  | E 18398636    | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 26047859  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 23443478m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 25601551m | 6820215.95092 ng  |
| 43) | C18(195) #2  | 31.08 | E        | 23548017m | BelowCal ng       |
| 44) | C19(206) #2  | 32.18 | E        | 21216572m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 16438463m | 10094597.27940 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response       | Conc           | Units |
|------------------------------------|--------|----------------|----------------|-------|
| <b>Internal Standards</b>          |        |                |                |       |
| 1) I C15(96)                       | 17.39  | 2857033m       | 0.10000        | ng    |
| 10) I C16(161)                     | 23.21  | 5785136        | 0.10000        | ng    |
| 24) I C15(96) #2                   | 20.51  | 15534608m      | 0.10000        | ng    |
| 33) I C16(161) #2                  | 26.79  | 28894537       | 0.10000        | ng    |
| <b>System Monitoring Compounds</b> |        |                |                |       |
| 4) s C13(34)                       | 13.40  | 6582490m       | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 11) s C16(152)                     | 20.48  | 8920810        | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 39634387m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 49764814m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| <b>Target Compounds</b>            |        |                |                |       |
| 2) C12(8)                          | 10.21  | E 3802803      | BelowCal       | ng    |
| 3) C13(18)                         | 12.12  | E 4625770      | BelowCal       | ng    |
| 5) C13(28)                         | 14.20  | E 9305861      | BelowCal       | ng    |
| 6) C14(52)                         | 15.83  | E 6491550m     | BelowCal       | ng    |
| 7) C14(44)                         | 16.70  | E 9213228m     | 16878676.73504 | ng    |
| 8) C14(66)                         | 18.60  | E 10581706     | BelowCal       | ng    |
| 9) C15(101)                        | 19.74  | E 11214785m    | BelowCal       | ng    |
| 12) C15(118)                       | 22.39  | E 10845273     | BelowCal       | ng    |
| 13) C16(153)                       | 23.44  | TW E 11086255m | BelowCal       | ng    |
| 14) C15(105)                       | 23.45  | TW E 12238036m | 4834222.71684  | ng    |
| 15) C16(138)                       | 24.54  | E 14181010     | BelowCal       | ng    |
| 16) C17(187)                       | 25.28  | E 12362255m    | BelowCal       | ng    |
| 17) C16(128)                       | 25.63  | E 13614003m    | 7619432.15592  | ng    |
| 18) C17(180)                       | 27.16  | E 15356923     | BelowCal       | ng    |
| 19) C17(170)                       | 27.96  | E 17491960     | 11231671.25949 | ng    |
| 20) C18(195)                       | 29.04  | E 16570469m    | BelowCal       | ng    |
| 21) C19(206)                       | 30.30  | E 15913312m    | BelowCal       | ng    |
| 22) C110(209)                      | 30.90  | E 12593895m    | BelowCal       | ng    |
| 25) C12(8) #2                      | 13.10  | E 24205484m    | BelowCal       | ng    |
| 26) C13(18) #2                     | 14.99  | E 27041957m    | BelowCal       | ng    |
| 28) C13(28) #2                     | 17.76  | E 56387566m    | 9817113.52330  | ng    |
| 29) C14(52) #2                     | 19.14  | E 31213496m    | 8327658.06829  | ng    |
| 30) C14(44) #2                     | 19.96  | E 56797595m    | 12385262.50102 | ng    |
| 31) C14(66) #2                     | 22.36  | E 65508405m    | BelowCal       | ng    |
| 32) C15(101) #2                    | 23.21f | E 73990498m    | BelowCal       | ng    |
| 35) C15(118) #2                    | 26.34  | E 53052856m    | BelowCal       | ng    |
| 36) C16(153) #2                    | 26.93  | E 58782173     | 19272949.92145 | ng    |
| 37) C15(105) #2                    | 27.20  | E 87183647     | 12882056.53676 | ng    |
| 38) C16(138) #2                    | 27.78  | E 63446136m    | 10766758.70710 | ng    |
| 39) C17(187) #2                    | 28.14  | E 63573730     | BelowCal       | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 91431997  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 83277221m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 91217127m | 15760612.61828 ng |
| 43) | C18(195) #2  | 31.08 | E        | 84844015m | BelowCal ng       |
| 44) | C19(206) #2  | 32.17 | E        | 76001510m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 57560994m | 23285632.07742 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |      |
|-----------------------------|--------|-----------|---------|---------|------|
| Internal Standards          |        |           |         |         |      |
| 1) I C15(96)                | 17.39  | 2508888   | 0.10000 | ng      |      |
| 10) I C16(161)              | 23.21  | 5353469   | 0.10000 | ng      |      |
| 24) I C15(96) #2            | 20.51  | 13969685m | 0.10000 | ng      |      |
| 33) I C16(161) #2           | 26.78  | 30447371  | 0.10000 | ng      |      |
| System Monitoring Compounds |        |           |         |         |      |
| 4) s C13(34)                | 13.40  | 1040909   | 0.04104 | ng      | 2.6  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 102.60% |      |
| 11) s C16(152)              | 20.48  | 1350202   | 0.04329 | ng      | 7.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 107.79% |      |
| 27) s C13(34) #2            | 16.47  | 6131122m  | 0.04171 | ng      | 4.3  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 104.27% |      |
| 34) s C16(152) #2           | 23.57  | 6327177m  | 0.04129 | ng      | 2.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 102.81% |      |
| Target Compounds            |        |           |         |         |      |
| 2) C12(8)                   | 10.21  | 664551    | 0.04326 | ng      | 8.1  |
| 3) C13(18)                  | 12.12  | 802051    | 0.04152 | ng      | 3.8  |
| 5) C13(28)                  | 14.21  | 1396518   | 0.04098 | ng      | 2.5  |
| 6) C14(52)                  | 15.83  | 1070948   | 0.04112 | ng      | 2.8  |
| 7) C14(44)                  | 16.70  | 1426889m  | 0.04167 | ng      | 4.2  |
| 8) C14(66)                  | 18.60  | 1565208   | 0.04028 | ng      | 0.7  |
| 9) C15(101)                 | 19.73  | 1426993m  | 0.03706 | ng      | -7.3 |
| 12) C15(118)                | 22.39  | 1627776   | 0.04151 | ng      | 3.8  |
| 13) C16(153)                | 23.43  | 1467714m  | 0.03933 | ng      | -1.7 |
| 14) C15(105)                | 23.45  | 1824192m  | 0.03778 | ng      | -5.5 |
| 15) C16(138)                | 24.53  | 2023467   | 0.04232 | ng      | 5.8  |
| 16) C17(187)                | 25.29  | 1787515   | 0.04281 | ng      | 7.0  |
| 17) C16(128)                | 25.63  | 1824156m  | 0.03935 | ng      | -1.6 |
| 18) C17(180)                | 27.15  | 2038700   | 0.04138 | ng      | 3.4  |
| 19) C17(170)                | 27.96  | 2269675   | 0.04068 | ng      | 1.7  |
| 20) C18(195)                | 29.04  | 2088594m  | 0.03989 | ng      | -0.3 |
| 21) C19(206)                | 30.30  | 1961931m  | 0.03884 | ng      | -2.9 |
| 22) C110(209)               | 30.90  | 1612364m  | 0.03909 | ng      | -2.3 |
| 25) C12(8) #2               | 13.10  | 3947204m  | 0.04248 | ng      | 6.2  |
| 26) C13(18) #2              | 14.99  | 4351305m  | 0.03989 | ng      | -0.3 |
| 28) C13(28) #2              | 17.76  | 8214453m  | 0.04094 | ng      | 2.3  |
| 29) C14(52) #2              | 19.14  | 4859257m  | 0.04058 | ng      | 1.4  |
| 30) C14(44) #2              | 19.96  | 8466239m  | 0.04126 | ng      | 3.1  |
| 31) C14(66) #2              | 22.35  | 9294328m  | 0.04096 | ng      | 2.4  |
| 32) C15(101) #2             | 23.24  | 4934904m  | 0.03828 | ng      | -4.3 |
| 35) C15(118) #2             | 26.35  | 7705344m  | 0.03951 | ng      | -1.2 |
| 36) C16(153) #2             | 26.93  | 8835029   | 0.04347 | ng      | 8.7  |
| 37) C15(105) #2             | 27.20  | 11200960m | 0.04079 | ng      | 2.0  |
| 38) C16(138) #2             | 27.78  | 7622194m  | 0.04108 | ng      | 2.7  |
| 39) C17(187) #2             | 28.14  | 8806327   | 0.04269 | ng      | 6.7  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |      |
|-----|--------------|-------|-----------|---------|-------|------|
| 40) | C16(128) #2  | 28.54 | 11964334m | 0.04137 | ng    | 3.4  |
| 41) | C17(180) #2  | 29.58 | 10533125m | 0.04073 | ng    | 1.8  |
| 42) | C17(170) #2  | 30.21 | 11398863m | 0.04051 | ng    | 1.3  |
| 43) | C18(195) #2  | 31.08 | 10207239m | 0.03956 | ng    | -1.1 |
| 44) | C19(206) #2  | 32.18 | 9021058m  | 0.03879 | ng    | -3.0 |
| 45) | C110(209) #2 | 32.62 | 7069806m  | 0.03894 | ng    | -2.6 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7442.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0421\M7442.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:54 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:06 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.39  | 2269787m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22  | 5231475m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51  | 14152396m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79  | 34414950m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.40  | 918267m   | 0.03986 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 99.65%  |
| 11) s C16(152)                     | 20.48  | 1218960m  | 0.03967 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 98.78%  |
| 27) s C13(34) #2                   | 16.47  | 5980821m  | 0.03997 | ng      |
| Spiked Amount                      | 0.0400 | Recovery  | =       | 99.92%  |
| 34) s C16(152) #2                  | 23.57  | 7274003m  | 0.04206 | ng      |
| Spiked Amount                      | 0.0402 | Recovery  | =       | 104.73% |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 566668    | 0.04042 | ng      |
| 3) C13(18)                         | 12.13  | 714298m   | 0.04076 | ng      |
| 5) C13(28)                         | 14.21  | 1224590m  | 0.03960 | ng      |
| 6) C14(52)                         | 15.83  | 930851m   | 0.03919 | ng      |
| 7) C14(44)                         | 16.69  | 1259484m  | 0.04054 | ng      |
| 8) C14(66)                         | 18.60  | 1511510m  | 0.04329 | ng      |
| 9) C15(101)                        | 19.73  | 1285858m  | 0.03690 | ng      |
| 12) C15(118)                       | 22.39  | 1526170m  | 0.03966 | ng      |
| 13) C16(153)                       | 23.43  | 1483737m  | 0.04075 | ng      |
| 14) C15(105)                       | 23.45  | 1919879m  | 0.04099 | ng      |
| 15) C16(138)                       | 24.53  | 1851997m  | 0.03944 | ng      |
| 16) C17(187)                       | 25.29  | 1680298m  | 0.04106 | ng      |
| 17) C16(128)                       | 25.64  | 1961995m  | 0.04347 | ng      |
| 18) C17(180)                       | 27.16  | 2073319m  | 0.04316 | ng      |
| 19) C17(170)                       | 27.96  | 2310265m  | 0.04247 | ng      |
| 20) C18(195)                       | 29.04  | 2272331m  | 0.04463 | ng      |
| 21) C19(206)                       | 30.30  | 2219945m  | 0.04526 | ng      |
| 22) C110(209)                      | 30.90  | 1834722m  | 0.04588 | ng      |
| 25) C12(8) #2                      | 13.10  | 3756164m  | 0.03965 | ng      |
| 26) C13(18) #2                     | 14.99  | 4517758m  | 0.04106 | ng      |
| 28) C13(28) #2                     | 17.76  | 7756306m  | 0.03794 | ng      |
| 29) C14(52) #2                     | 19.14  | 4843443m  | 0.03986 | ng      |
| 30) C14(44) #2                     | 19.96  | 8720049m  | 0.04200 | ng      |
| 31) C14(66) #2                     | 22.36  | 9327008m  | 0.04054 | ng      |
| 32) C15(101) #2                    | 23.24  | 5196126m  | 0.03993 | ng      |
| 35) C15(118) #2                    | 26.35  | 8752763m  | 0.03973 | ng      |
| 36) C16(153) #2                    | 26.93  | 9100432   | 0.03926 | ng      |
| 37) C15(105) #2                    | 27.20  | 12100613  | 0.03892 | ng      |
| 38) C16(138) #2                    | 27.78  | 8587550m  | 0.04095 | ng      |
| 39) C17(187) #2                    | 28.14  | 9796183   | 0.04198 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7442.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0421\M7442.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:54 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:06 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 13641651  | 0.04175 | ng    |
| 41) | C17(180) #2  | 29.58 | 12630565m | 0.04329 | ng    |
| 42) | C17(170) #2  | 30.22 | 13788854m | 0.04341 | ng    |
| 43) | C18(195) #2  | 31.08 | 13321040m | 0.04578 | ng    |
| 44) | C19(206) #2  | 32.18 | 13454220m | 0.05133 | ng    |
| 45) | C110(209) #2 | 32.62 | 10261626m | 0.05029 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7453.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0421\M7453.D\ECD2B.CH  
 Acq On : 11-4-2014 08:04:39 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:32 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.39    | 3341593   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 7226750m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.51    | 18282122m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 42945742  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 2398421m  | 0.07685 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 96.06%  |
| 11) s C16(152)                     | 20.48    | 3268428   | 0.08177 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 101.81% |
| 27) s C13(34) #2                   | 16.47    | 13656110m | 0.07543 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 94.29%  |
| 34) s C16(152) #2                  | 23.57    | 17161243m | 0.08176 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 101.79% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 1433978   | 0.07502 | ng      |
| 3) C13(18)                         | 12.13    | 1751605   | 0.07379 | ng      |
| 5) C13(28)                         | 14.21    | 3356577   | 0.07822 | ng      |
| 6) C14(52)                         | 15.83    | 2420874   | 0.07653 | ng      |
| 7) C14(44)                         | 16.70    | 3325933m  | 0.07755 | ng      |
| 8) C14(66)                         | 18.60    | 3742272   | 0.07666 | ng      |
| 9) C15(101)                        | 19.73    | 3665706m  | 0.07483 | ng      |
| 12) C15(118)                       | 22.39    | 3708517m  | 0.07349 | ng      |
| 13) C16(153)                       | 23.44 TW | 3857002m  | 0.07897 | ng      |
| 14) C15(105)                       | 23.45 TW | 4700103m  | 0.07686 | ng      |
| 15) C16(138)                       | 24.54    | 4791000   | 0.07711 | ng      |
| 16) C17(187)                       | 25.29    | 4242296m  | 0.07821 | ng      |
| 17) C16(128)                       | 25.64    | 4949327m  | 0.08151 | ng      |
| 18) C17(180)                       | 27.16    | 4969838m  | 0.07699 | ng      |
| 19) C17(170)                       | 27.96    | 5648592   | 0.07712 | ng      |
| 20) C18(195)                       | 29.04    | 5355940m  | 0.07783 | ng      |
| 21) C19(206)                       | 30.30    | 5076938m  | 0.07637 | ng      |
| 22) C110(209)                      | 30.90    | 4093547m  | 0.07582 | ng      |
| 25) C12(8) #2                      | 13.10    | 8219742m  | 0.07089 | ng      |
| 26) C13(18) #2                     | 14.99    | 9544887m  | 0.07252 | ng      |
| 28) C13(28) #2                     | 17.76    | 18086729m | 0.07172 | ng      |
| 29) C14(52) #2                     | 19.14    | 10761853m | 0.07242 | ng      |
| 30) C14(44) #2                     | 19.96    | 20529731m | 0.08022 | ng      |
| 31) C14(66) #2                     | 22.36    | 22507109m | 0.07927 | ng      |
| 32) C15(101) #2                    | 23.24    | 12790835m | 0.07851 | ng      |
| 35) C15(118) #2                    | 26.35    | 21152904m | 0.08087 | ng      |
| 36) C16(153) #2                    | 26.93    | 20718566m | 0.07481 | ng      |
| 37) C15(105) #2                    | 27.20    | 30034563  | 0.07844 | ng      |
| 38) C16(138) #2                    | 27.78    | 22106515m | 0.08372 | ng      |
| 39) C17(187) #2                    | 28.14    | 22790991  | 0.07995 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7453.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0421\M7453.D\ECD2B.CH  
 Acq On : 11-4-2014 08:04:39 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:32 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 32558228  | 0.08087 | ng    |
| 41) | C17(180) #2  | 29.58 | 29639827  | 0.08198 | ng    |
| 42) | C17(170) #2  | 30.21 | 32263450m | 0.08166 | ng    |
| 43) | C18(195) #2  | 31.08 | 29862240m | 0.08216 | ng    |
| 44) | C19(206) #2  | 32.18 | 27165216m | 0.08283 | ng    |
| 45) | C110(209) #2 | 32.62 | 21078190m | 0.08304 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7464.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0421\M7464.D\ECD2B.CH  
 Acq On : 11-5-2014 04:13:50 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:48 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.40    | 3616079   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 8156325   | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 17638012m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 42315276  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 1475150   | 0.04024 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 100.60% |
| 11) s C16(152)                     | 20.48    | 1983066   | 0.04158 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 103.54% |
| 27) s C13(34) #2                   | 16.48    | 7319634m  | 0.03916 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 97.90%  |
| 34) s C16(152) #2                  | 23.57    | 8303585m  | 0.03878 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 96.56%  |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 890172    | 0.03977 | ng      |
| 3) C13(18)                         | 12.13    | 1105032   | 0.03938 | ng      |
| 5) C13(28)                         | 14.21    | 2054539   | 0.04191 | ng      |
| 6) C14(52)                         | 15.84    | 1510166   | 0.04005 | ng      |
| 7) C14(44)                         | 16.70    | 2034699m  | 0.04117 | ng      |
| 8) C14(66)                         | 18.60    | 2272804   | 0.04061 | ng      |
| 9) C15(101)                        | 19.74    | 2165765m  | 0.03917 | ng      |
| 12) C15(118)                       | 22.39    | 2345483   | 0.03904 | ng      |
| 13) C16(153)                       | 23.44 TW | 2106983m  | 0.03696 | ng      |
| 14) C15(105)                       | 23.45 TW | 2943893m  | 0.04025 | ng      |
| 15) C16(138)                       | 24.54    | 2898128   | 0.03960 | ng      |
| 16) C17(187)                       | 25.29    | 2550014m  | 0.03988 | ng      |
| 17) C16(128)                       | 25.64    | 2875695m  | 0.04077 | ng      |
| 18) C17(180)                       | 27.16    | 2947347m  | 0.03914 | ng      |
| 19) C17(170)                       | 27.96    | 3324183m  | 0.03903 | ng      |
| 20) C18(195)                       | 29.04    | 3139033m  | 0.03932 | ng      |
| 21) C19(206)                       | 30.31    | 2984106m  | 0.03878 | ng      |
| 22) C110(209)                      | 30.90    | 2422533m  | 0.03852 | ng      |
| 25) C12(8) #2                      | 13.11    | 4529796m  | 0.03823 | ng      |
| 26) C13(18) #2                     | 14.99    | 5575748m  | 0.04059 | ng      |
| 28) C13(28) #2                     | 17.76    | 9604471m  | 0.03768 | ng      |
| 29) C14(52) #2                     | 19.14    | 6051041m  | 0.03996 | ng      |
| 30) C14(44) #2                     | 19.96    | 10818807m | 0.04180 | ng      |
| 31) C14(66) #2                     | 22.36    | 11748702m | 0.04101 | ng      |
| 32) C15(101) #2                    | 23.24    | 6556290m  | 0.04047 | ng      |
| 35) C15(118) #2                    | 26.35    | 10869496m | 0.04017 | ng      |
| 36) C16(153) #2                    | 26.93    | 10985618  | 0.03847 | ng      |
| 37) C15(105) #2                    | 27.20    | 15058592  | 0.03941 | ng      |
| 38) C16(138) #2                    | 27.78    | 11024568m | 0.04276 | ng      |
| 39) C17(187) #2                    | 28.14    | 11703103  | 0.04072 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7464.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0421\M7464.D\ECD2B.CH  
 Acq On : 11-5-2014 04:13:50 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:48 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 16427343m | 0.04085 | ng    |
| 41) | C17(180) #2  | 29.58 | 14778962m | 0.04114 | ng    |
| 42) | C17(170) #2  | 30.22 | 16163134m | 0.04135 | ng    |
| 43) | C18(195) #2  | 31.09 | 15038634m | 0.04198 | ng    |
| 44) | C19(206) #2  | 32.18 | 13842767m | 0.04289 | ng    |
| 45) | C110(209) #2 | 32.62 | 10897711m | 0.04330 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7470.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0421\M7470.D\ECD2B.CH  
 Acq On : 11-5-2014 08:40:48 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.    | Response  | Conc    | Units   |
|-----------------------------|---------|-----------|---------|---------|
| Internal Standards          |         |           |         |         |
| 1) I C15(96)                | 17.39   | 3715119m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.21   | 8337080m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52   | 18841562m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79   | 45787052m | 0.10000 | ng      |
| System Monitoring Compounds |         |           |         |         |
| 4) s C13(34)                | 13.40   | 2706661m  | 0.07817 | ng      |
| Spiked Amount               | 0.0800  | Recovery  | =       | 97.71%  |
| 11) s C16(152)              | 20.48   | 3706158   | 0.08026 | ng      |
| Spiked Amount               | 0.0803  | Recovery  | =       | 99.93%  |
| 27) s C13(34) #2            | 16.47   | 13855173m | 0.07413 | ng      |
| Spiked Amount               | 0.0800  | Recovery  | =       | 92.66%  |
| 34) s C16(152) #2           | 23.57   | 18249113m | 0.08155 | ng      |
| Spiked Amount               | 0.0803  | Recovery  | =       | 101.53% |
| Target Compounds            |         |           |         |         |
| 2) C12(8)                   | 10.21   | 1603793   | 0.07554 | ng      |
| 3) C13(18)                  | 12.13   | 1968340   | 0.07472 | ng      |
| 5) C13(28)                  | 14.21   | 3809550m  | 0.08002 | ng      |
| 6) C14(52)                  | 15.83   | 2746740   | 0.07836 | ng      |
| 7) C14(44)                  | 16.70   | 3745636m  | 0.07866 | ng      |
| 8) C14(66)                  | 18.60   | 4349701   | 0.08051 | ng      |
| 9) C15(101)                 | 19.74   | 4589144m  | 0.08503 | ng      |
| 12) C15(118)                | 22.39   | 4435443   | 0.07643 | ng      |
| 13) C16(153)                | 23.45 T | 4490127m  | 0.07973 | ng      |
| 14) C15(105)                | 23.45 T | 5283964m  | 0.07470 | ng      |
| 15) C16(138)                | 24.54   | 5609054   | 0.07832 | ng      |
| 16) C17(187)                | 25.29   | 4882635m  | 0.07801 | ng      |
| 17) C16(128)                | 25.63   | 5161911m  | 0.07331 | ng      |
| 18) C17(180)                | 27.16   | 5874125   | 0.07896 | ng      |
| 19) C17(170)                | 27.96   | 6677267   | 0.07910 | ng      |
| 20) C18(195)                | 29.04   | 6336221m  | 0.07988 | ng      |
| 21) C19(206)                | 30.31   | 6000998m  | 0.07832 | ng      |
| 22) C110(209)               | 30.90   | 4800282m  | 0.07713 | ng      |
| 25) C12(8) #2               | 13.10   | 8613581m  | 0.07221 | ng      |
| 26) C13(18) #2              | 14.99   | 9905145m  | 0.07310 | ng      |
| 28) C13(28) #2              | 17.76   | 19131387m | 0.07377 | ng      |
| 29) C14(52) #2              | 19.15   | 11699717m | 0.07683 | ng      |
| 30) C14(44) #2              | 19.96   | 21982747m | 0.08362 | ng      |
| 31) C14(66) #2              | 22.36   | 23396042m | 0.08000 | ng      |
| 32) C15(101) #2             | 23.24   | 12436227m | 0.07400 | ng      |
| 35) C15(118) #2             | 26.35   | 20509466m | 0.07313 | ng      |
| 36) C16(153) #2             | 26.93   | 21873908  | 0.07404 | ng      |
| 37) C15(105) #2             | 27.20   | 30747608m | 0.07531 | ng      |
| 38) C16(138) #2             | 27.78   | 24252389m | 0.08607 | ng      |
| 39) C17(187) #2             | 28.14   | 23491366m | 0.07726 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7470.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0421\M7470.D\ECD2B.CH  
 Acq On : 11-5-2014 08:40:48 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 33655508m | 0.07840 | ng    |
| 41) | C17(180) #2  | 29.58 | 30993167m | 0.08041 | ng    |
| 42) | C17(170) #2  | 30.21 | 33914488m | 0.08052 | ng    |
| 43) | C18(195) #2  | 31.08 | 32293028m | 0.08331 | ng    |
| 44) | C19(206) #2  | 32.18 | 29946923m | 0.08560 | ng    |
| 45) | C110(209) #2 | 32.62 | 23327163m | 0.08618 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0425\M7644.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0425\M7644.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:12 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.    | Response  | Conc    | Units   |
|-----------------------------|---------|-----------|---------|---------|
| Internal Standards          |         |           |         |         |
| 1) I C15(96)                | 17.39   | 2454734m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.21   | 5632999m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52   | 17049609m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79   | 39504743m | 0.10000 | ng      |
| System Monitoring Compounds |         |           |         |         |
| 4) s C13(34)                | 13.40   | 955741m   | 0.03811 | ng      |
| Spiked Amount               | 0.0400  | Recovery  | =       | 95.28%  |
| 11) s C16(152)              | 20.48   | 1362781m  | 0.04135 | ng      |
| Spiked Amount               | 0.0402  | Recovery  | =       | 102.96% |
| 27) s C13(34) #2            | 16.47   | 6825453m  | 0.03760 | ng      |
| Spiked Amount               | 0.0400  | Recovery  | =       | 94.00%  |
| 34) s C16(152) #2           | 23.57   | 7969432m  | 0.03998 | ng      |
| Spiked Amount               | 0.0402  | Recovery  | =       | 99.55%  |
| Target Compounds            |         |           |         |         |
| 2) C12(8)                   | 10.21   | 572651    | 0.03738 | ng      |
| 3) C13(18)                  | 12.13   | 715816m   | 0.03726 | ng      |
| 5) C13(28)                  | 14.21   | 1281046m  | 0.03818 | ng      |
| 6) C14(52)                  | 15.83   | 962759m   | 0.03713 | ng      |
| 7) C14(44)                  | 16.70   | 1331899m  | 0.03953 | ng      |
| 8) C14(66)                  | 18.60   | 1440080m  | 0.03764 | ng      |
| 9) C15(101)                 | 19.73   | 1440845m  | 0.03833 | ng      |
| 12) C15(118)                | 22.39   | 1482561m  | 0.03539 | ng      |
| 13) C16(153)                | 23.45 T | 1593986m  | 0.04065 | ng      |
| 14) C15(105)                | 23.45 T | 1989836m  | 0.03930 | ng      |
| 15) C16(138)                | 24.54   | 2004722m  | 0.03966 | ng      |
| 16) C17(187)                | 25.29   | 1796543m  | 0.04074 | ng      |
| 17) C16(128)                | 25.64   | 1820593m  | 0.03725 | ng      |
| 18) C17(180)                | 27.16   | 2117075m  | 0.04081 | ng      |
| 19) C17(170)                | 27.96   | 2376130m  | 0.04047 | ng      |
| 20) C18(195)                | 29.04   | 2309713m  | 0.04202 | ng      |
| 21) C19(206)                | 30.31   | 2235761   | 0.04222 | ng      |
| 22) C110(209)               | 30.90   | 1900731m  | 0.04405 | ng      |
| 25) C12(8) #2               | 13.11   | 4180117m  | 0.03632 | ng      |
| 26) C13(18) #2              | 14.99   | 4923370m  | 0.03648 | ng      |
| 28) C13(28) #2              | 17.76   | 8681228m  | 0.03503 | ng      |
| 29) C14(52) #2              | 19.14   | 5440636m  | 0.03689 | ng      |
| 30) C14(44) #2              | 19.97   | 9885755m  | 0.03934 | ng      |
| 31) C14(66) #2              | 22.36   | 10637376m | 0.03822 | ng      |
| 32) C15(101) #2             | 23.24   | 5767328m  | 0.03650 | ng      |
| 35) C15(118) #2             | 26.35   | 9475048m  | 0.03724 | ng      |
| 36) C16(153) #2             | 26.94   | 10591309  | 0.03986 | ng      |
| 37) C15(105) #2             | 27.20   | 13607745m | 0.03809 | ng      |
| 38) C16(138) #2             | 27.78   | 10428361m | 0.04333 | ng      |
| 39) C17(187) #2             | 28.14   | 11464659  | 0.04284 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7644.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0425\M7644.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:12 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 15578313m | 0.04152 | ng    |
| 41) | C17(180) #2  | 29.59 | 14295996m | 0.04267 | ng    |
| 42) | C17(170) #2  | 30.22 | 15507465m | 0.04252 | ng    |
| 43) | C18(195) #2  | 31.09 | 14849870m | 0.04444 | ng    |
| 44) | C19(206) #2  | 32.18 | 13617882m | 0.04522 | ng    |
| 45) | C110(209) #2 | 32.62 | 10914700m | 0.04653 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7655.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0425\M7655.D\ECD2B.CH  
 Acq On : 11-20-2014 07:22:12 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 07:37:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 07:37:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.    | Response  | Conc    | Units   |
|-----------------------------|---------|-----------|---------|---------|
| Internal Standards          |         |           |         |         |
| 1) I C15(96)                | 17.39   | 3275004m  | 0.10000 | ng      |
| 10) I C16(161)              | 23.22   | 7124865m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52   | 18267071m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79   | 41724750m | 0.10000 | ng      |
| System Monitoring Compounds |         |           |         |         |
| 4) s C13(34)                | 13.40   | 2346692m  | 0.07670 | ng      |
| Spiked Amount               | 0.0800  | Recovery  | =       | 95.88%  |
| 11) s C16(152)              | 20.48   | 3238387   | 0.08221 | ng      |
| Spiked Amount               | 0.0803  | Recovery  | =       | 102.35% |
| 27) s C13(34) #2            | 16.48   | 13755517m | 0.07611 | ng      |
| Spiked Amount               | 0.0800  | Recovery  | =       | 95.14%  |
| 34) s C16(152) #2           | 23.57   | 16969612m | 0.08322 | ng      |
| Spiked Amount               | 0.0803  | Recovery  | =       | 103.61% |
| Target Compounds            |         |           |         |         |
| 2) C12(8)                   | 10.21   | 1367602m  | 0.07272 | ng      |
| 3) C13(18)                  | 12.13   | 1705196   | 0.07322 | ng      |
| 5) C13(28)                  | 14.21   | 3147845m  | 0.07452 | ng      |
| 6) C14(52)                  | 15.84   | 2296381m  | 0.07368 | ng      |
| 7) C14(44)                  | 16.70   | 3206694m  | 0.07615 | ng      |
| 8) C14(66)                  | 18.60   | 3475763m  | 0.07225 | ng      |
| 9) C15(101)                 | 19.74   | 4176711m  | 0.08801 | ng      |
| 12) C15(118)                | 22.39   | 3428991m  | 0.06854 | ng      |
| 13) C16(153)                | 23.45 T | 3698161m  | 0.07669 | ng      |
| 14) C15(105)                | 23.45 T | 4516826m  | 0.07472 | ng      |
| 15) C16(138)                | 24.54   | 4660609   | 0.07602 | ng      |
| 16) C17(187)                | 25.29   | 4254066   | 0.07963 | ng      |
| 17) C16(128)                | 25.64   | 4639137m  | 0.07729 | ng      |
| 18) C17(180)                | 27.16   | 4922104   | 0.07735 | ng      |
| 19) C17(170)                | 27.96   | 5514977   | 0.07634 | ng      |
| 20) C18(195)                | 29.04   | 5319756m  | 0.07843 | ng      |
| 21) C19(206)                | 30.31   | 5085095m  | 0.07763 | ng      |
| 22) C110(209)               | 30.90   | 4208684m  | 0.07922 | ng      |
| 25) C12(8) #2               | 13.10   | 8308348m  | 0.07181 | ng      |
| 26) C13(18) #2              | 15.00   | 9887262m  | 0.07558 | ng      |
| 28) C13(28) #2              | 17.76   | 18091332m | 0.07181 | ng      |
| 29) C14(52) #2              | 19.15   | 11176418m | 0.07558 | ng      |
| 30) C14(44) #2              | 19.97   | 20264094m | 0.07916 | ng      |
| 31) C14(66) #2              | 22.36   | 21517659m | 0.07559 | ng      |
| 32) C15(101) #2             | 23.24   | 13147296m | 0.08080 | ng      |
| 35) C15(118) #2             | 26.36   | 20676156m | 0.08139 | ng      |
| 36) C16(153) #2             | 26.94   | 19786069m | 0.07347 | ng      |
| 37) C15(105) #2             | 27.21   | 27490728m | 0.07388 | ng      |
| 38) C16(138) #2             | 27.78   | 21442597m | 0.08358 | ng      |
| 39) C17(187) #2             | 28.14   | 22482108  | 0.08120 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7655.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0425\M7655.D\ECD2B.CH  
 Acq On : 11-20-2014 07:22:12 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 07:37:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 07:37:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 30774230m | 0.07867 | ng    |
| 41) | C17(180) #2  | 29.59 | 28509975m | 0.08116 | ng    |
| 42) | C17(170) #2  | 30.22 | 30892866m | 0.08049 | ng    |
| 43) | C18(195) #2  | 31.09 | 29390015m | 0.08321 | ng    |
| 44) | C19(206) #2  | 32.18 | 27339628m | 0.08576 | ng    |
| 45) | C110(209) #2 | 32.62 | 21687149m | 0.08791 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7666.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0425\M7666.D\ECD2B.CH  
 Acq On : 11-21-2014 03:32:21 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:01:59 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:01:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc Units |
|-----------------------------|--------|-----------|------------|
| -----                       |        |           |            |
| Internal Standards          |        |           |            |
| 1) I C15(96)                | 17.39  | 3615358m  | 0.10000 ng |
| 10) I C16(161)              | 23.22  | 7938143m  | 0.10000 ng |
| 24) I C15(96) #2            | 20.51  | 19848168m | 0.10000 ng |
| 33) I C16(161) #2           | 26.79  | 46038868  | 0.10000 ng |
| System Monitoring Compounds |        |           |            |
| 4) s C13(34)                | 13.40  | 1395508m  | 0.03773 ng |
| Spiked Amount               | 0.0400 | Recovery  | = 94.32%   |
| 11) s C16(152)              | 20.48  | 1924173   | 0.04144 ng |
| Spiked Amount               | 0.0402 | Recovery  | = 103.19%  |
| 27) s C13(34) #2            | 16.48  | 8063219m  | 0.03823 ng |
| Spiked Amount               | 0.0400 | Recovery  | = 95.58%   |
| 34) s C16(152) #2           | 23.57  | 9812710m  | 0.04244 ng |
| Spiked Amount               | 0.0402 | Recovery  | = 105.68%  |
| Target Compounds            |        |           |            |
| 2) C12(8)                   | 10.21  | 838536    | 0.03713 ng |
| 3) C13(18)                  | 12.13  | 1064117   | 0.03767 ng |
| 5) C13(28)                  | 14.21  | 1940818   | 0.03938 ng |
| 6) C14(52)                  | 15.83  | 1435760   | 0.03770 ng |
| 7) C14(44)                  | 16.70  | 1955475m  | 0.03939 ng |
| 8) C14(66)                  | 18.60  | 2117730   | 0.03757 ng |
| 9) C15(101)                 | 19.73  | 2137810m  | 0.03864 ng |
| 12) C15(118)                | 22.39  | 2153115   | 0.03660 ng |
| 13) C16(153)                | 23.44  | 2031903m  | 0.03661 ng |
| 14) C15(105)                | 23.46  | 2808269m  | 0.03937 ng |
| 15) C16(138)                | 24.54  | 2771342   | 0.03885 ng |
| 16) C17(187)                | 25.29  | 2514949   | 0.04045 ng |
| 17) C16(128)                | 25.63  | 2734861m  | 0.03980 ng |
| 18) C17(180)                | 27.16  | 2882356   | 0.03934 ng |
| 19) C17(170)                | 27.96  | 3245322   | 0.03916 ng |
| 20) C18(195)                | 29.04  | 3123873   | 0.04025 ng |
| 21) C19(206)                | 30.31  | 3027624   | 0.04050 ng |
| 22) C110(209)               | 30.90  | 2531816   | 0.04152 ng |
| 25) C12(8) #2               | 13.11  | 4964869m  | 0.03713 ng |
| 26) C13(18) #2              | 14.99  | 5745476m  | 0.03658 ng |
| 28) C13(28) #2              | 17.76  | 10520478m | 0.03659 ng |
| 29) C14(52) #2              | 19.15  | 6680979m  | 0.03913 ng |
| 30) C14(44) #2              | 19.97  | 10781023m | 0.03667 ng |
| 31) C14(66) #2              | 22.36  | 12591054m | 0.03891 ng |
| 32) C15(101) #2             | 23.24  | 7232569m  | 0.03960 ng |
| 35) C15(118) #2             | 26.35  | 11580796m | 0.03925 ng |
| 36) C16(153) #2             | 26.93  | 11649550m | 0.03739 ng |
| 37) C15(105) #2             | 27.20  | 15622070m | 0.03750 ng |
| 38) C16(138) #2             | 27.78  | 11833898m | 0.04219 ng |
| 39) C17(187) #2             | 28.14  | 12794839m | 0.04093 ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7666.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0425\M7666.D\ECD2B.CH  
 Acq On : 11-21-2014 03:32:21 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:01:59 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:01:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 17828037m | 0.04074 | ng    |
| 41) | C17(180) #2  | 29.59 | 16293734m | 0.04170 | ng    |
| 42) | C17(170) #2  | 30.22 | 17784669m | 0.04183 | ng    |
| 43) | C18(195) #2  | 31.09 | 16914459m | 0.04342 | ng    |
| 44) | C19(206) #2  | 32.18 | 16051201m | 0.04574 | ng    |
| 45) | C110(209) #2 | 32.62 | 12916046m | 0.04726 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2038180   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 12872032m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 102746m   | 0.00162 | ng    |
| 5) C15(101) #2     | 23.23 | 516701m   | 0.00035 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7205.D MM0417F.M Fri Dec 05 16:10:49 2014

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc    | Units |
|--------------------|-------|----------|---------|-------|
| Internal Standards |       |          |         |       |
| 1) I C15(96)       | 17.39 | 2103011  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13386960 | 0.10000 | ng    |
| Target Compounds   |       |          |         |       |
| 2) C15(101)        | 19.73 | 341674m  | 0.00915 | ng    |
| 5) C15(101) #2     | 23.22 | 3258192m | 0.02515 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7207.D MM0417F.M Fri Dec 05 16:10:55 2014



Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2225995   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13612237m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 753837m   | 0.02114 | ng    |
| 5) C15(101) #2     | 23.22 | 5441576m  | 0.04378 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7208.D MM0417F.M Fri Dec 05 16:10:57 2014

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:46 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2400478   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14869473m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1636592m  | 0.04499 | ng    |
| 5) C15(101) #2     | 23.21 | 11842524m | 0.08946 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7209.D MM0417F.M Fri Dec 05 16:10:58 2014

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2523572   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15494530m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2973113m  | 0.08080 | ng    |
| 5) C15(101) #2     | 23.21 | 25660002m | 0.18179 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7210.D MM0417F.M Fri Dec 05 16:11:00 2014

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.    | Response  | Conc    | Units |
|--------------------|---------|-----------|---------|-------|
| Internal Standards |         |           |         |       |
| 1) I C15(96)       | 17.39   | 2539311m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51   | 15194166m | 0.10000 | ng    |
| Target Compounds   |         |           |         |       |
| 2) C15(101)        | 19.74   | 11042195m | 0.36809 | ng    |
| 5) C15(101) #2     | 23.22 e | 68456197m | 0.44286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7212.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:24:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:22:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |      |
|--------------------|-------|-----------|---------|-------|------|
| Internal Standards |       |           |         |       |      |
| 1) I C15(96)       | 17.39 | 2508888   | 0.10000 | ng    |      |
| 4) I C15(96) #2    | 20.51 | 13936712m | 0.10000 | ng    |      |
| Target Compounds   |       |           |         |       |      |
| 2) C15(101)        | 19.73 | 1516710m  | 0.03859 | ng    | -3.5 |
| 5) C15(101) #2     | 23.21 | 11320633m | 0.03850 | ng    | -3.8 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7213.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0421\M7442.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0421\M7442.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:54 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:17 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2262683m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14180470m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 1335066m  | 0.03760 | ng    |
| 5) C15(101) #2     | 23.21 | 12957034m | 0.04344 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7442.D MM0417F.M Tue Dec 09 13:41:57 2014

Signal #1 : I:\M\DATA\SM0421\M7453.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0421\M7453.D\ECD2B.CH  
 Acq On : 11-4-2014 08:04:39 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:51 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3341593   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 17858178m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 3772198m  | 0.07456 | ng    |
| 5) C15(101) #2     | 23.21 | 28255308m | 0.07774 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7453.D MM0417F.M Tue Dec 09 13:42:11 2014

Signal #1 : I:\M\DATA\SM0421\M7464.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0421\M7464.D\ECD2B.CH  
 Acq On : 11-5-2014 04:13:50 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:09 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:02 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3616079   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17692800m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2310869m  | 0.04093 | ng    |
| 5) C15(101) #2     | 23.22 | 13537123m | 0.03623 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7464.D MM0417F.M Tue Dec 09 13:42:20 2014



Signal #1 : I:\M\DATA\SM0421\M7470.D\ECD1A.CH Vial: 30  
 Signal #2 : I:\M\DATA\SM0421\M7470.D\ECD2B.CH  
 Acq On : 11-5-2014 08:40:48 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:35 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3763261   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18529766m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4585412m  | 0.08081 | ng    |
| 5) C15(101) #2     | 23.21 | 30734658m | 0.08189 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7470.D MM0417F.M Tue Dec 09 13:42:29 2014

Signal #1 : I:\M\DATA\SM0425\M7644.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0425\M7644.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:12 am Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:40:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2460463m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16965716m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1460094m  | 0.03783 | ng    |
| 5) C15(101) #2     | 23.21 | 13742306m | 0.03839 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7644.D MM0417F.M Tue Dec 09 13:45:40 2014

Signal #1 : I:\M\DATA\SM0425\M7655.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0425\M7655.D\ECD2B.CH  
 Acq On : 11-20-2014 07:22:12 PM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:51 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3356965   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18240605m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 3965185m  | 0.07821 | ng    |
| 5) C15(101) #2     | 23.21 | 29399454m | 0.07934 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7655.D MM0417F.M Tue Dec 09 13:45:56 2014

Signal #1 : I:\M\DATA\SM0425\M7666.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0425\M7666.D\ECD2B.CH  
 Acq On : 11-21-2014 03:32:21 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:28 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3616666   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 19606354m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2187220m  | 0.03860 | ng    |
| 5) C15(101) #2     | 23.21 | 17223201m | 0.04171 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7666.D MM0417F.M Tue Dec 09 13:46:12 2014

Signal #1 : I:\M\DATA\SM0421\M7443.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0421\M7443.D\ECD2B.CH  
 Acq On : 04 Nov 2014 12:39 pm Operator: RR  
 Sample : CD584PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2993064   | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 5884758   | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 15551042m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 35595294m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7095464m  | 334.12489 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 83.53% |
| 11) s C16(152)                     | 20.48    | 10123172m | 367.23836 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 91.44% |
| 27) s C13(34) #2                   | 16.47    | 45104594m | 384.33153 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 96.08% |
| 34) s C16(152) #2                  | 23.62    | 61486709m | 322.17401 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 80.22% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 0.00     | 0d        | N.D.      | ng     |
| 3) C13(18)                         | 0.00     | 0d        | N.D.      | ng     |
| 5) C13(28)                         | 0.00     | 0d        | N.D.      | ng     |
| 6) C14(52)                         | 0.00     | 0d        | N.D.      | ng     |
| 7) C14(44)                         | 0.00     | 0d        | N.D.      | ng     |
| 8) C14(66)                         | 0.00     | 0d        | N.D.      | ng     |
| 9) C15(101)                        | 0.00     | 0d        | N.D.      | ng     |
| 12) C15(118)                       | 0.00     | 0d        | N.D.      | ng     |
| 13) C16(153)                       | 0.00     | 0d        | N.D.      | ng     |
| 14) C15(105)                       | 0.00     | 0d        | N.D.      | ng     |
| 15) C16(138)                       | 0.00     | 0d        | N.D.      | ng     |
| 16) C17(187)                       | 0.00     | 0d        | N.D.      | ng     |
| 17) C16(128)                       | 0.00     | 0d        | N.D.      | ng     |
| 18) C17(180)                       | 0.00     | 0d        | N.D.      | ng     |
| 19) C17(170)                       | 0.00     | 0d        | N.D.      | ng     |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng     |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng     |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng     |
| 25) C12(8) #2                      | 0.00     | 0d        | N.D.      | ng     |
| 26) C13(18) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 28) C13(28) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 29) C14(52) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 30) C14(44) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 31) C14(66) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 32) C15(101) #2                    | 0.00     | 0d        | N.D.      | ng     |
| 35) C15(118) #2                    | 0.00     | 0d        | N.D.      | ng     |
| 36) C16(153) #2                    | 0.00     | 0d        | N.D.      | ng     |
| 37) C15(105) #2                    | 0.00     | 0d        | N.D.      | ng     |
| 38) C16(138) #2                    | 0.00     | 0d        | N.D.      | ng     |
| 39) C17(187) #2                    | 0.00     | 0d        | N.D.      | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7443.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0421\M7443.D\ECD2B.CH  
 Acq On : 04 Nov 2014 12:39 pm Operator: RR  
 Sample : CD584PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7444.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0421\M7444.D\ECD2B.CH  
 Acq On : 11-4-2014 01:23:46 PM Operator: RR  
 Sample : CD585LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |      |
|------------------------------------|----------|-----------|-----------|--------|------|
| <b>Internal Standards</b>          |          |           |           |        |      |
| 1) I C15(96)                       | 17.39    | 2968719m  | 100.00000 | ng     |      |
| 10) I C16(161)                     | 23.21    | 5326547m  | 100.00000 | ng     |      |
| 24) I C15(96) #2                   | 20.51    | 15332474m | 100.00000 | ng     |      |
| 33) I C16(161) #2                  | 26.79    | 33734492m | 100.00000 | ng     |      |
| <b>System Monitoring Compounds</b> |          |           |           |        |      |
| 4) s C13(34)                       | 13.40    | 6723969m  | 312.07050 | ng     | 78%  |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 78.02% |      |
| 11) s C16(152)                     | 20.48    | 9773142m  | 398.18867 | ng     | 99%  |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 99.15% |      |
| 27) s C13(34) #2                   | 16.47    | 44220394m | 381.09369 | ng     | 95%  |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 95.27% |      |
| 34) s C16(152) #2                  | 23.62    | 71479883  | 383.67859 | ng     | 96%  |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 95.54% |      |
| <b>Target Compounds</b>            |          |           |           |        |      |
| 2) C12(8)                          | 10.21    | 475294    | 24.01835  | ng     | 64%  |
| 3) C13(18)                         | 12.13    | 620194m   | 24.91944  | ng     | 66%  |
| 5) C13(28)                         | 14.20    | 1050974m  | 24.83111  | ng     | 66%  |
| 6) C14(52)                         | 15.83    | 817894m   | 23.90124  | ng     | 64%  |
| 7) C14(44)                         | 16.70    | 1037322m  | 24.00071  | ng     | 64%  |
| 8) C14(66)                         | 18.59    | 1161267m  | 23.90648  | ng     | 64%  |
| 9) C15(101)                        | 19.73    | 1252237m  | 26.85861  | ng     | 72%  |
| 12) C15(118)                       | 22.39    | 1314535m  | 32.95130  | ng     | 88%  |
| 13) C16(153)                       | 23.44 TW | 1228218m  | 32.81446  | ng     | 88%  |
| 14) C15(105)                       | 23.45 TW | 1476394m  | 30.06028  | ng     | 80%  |
| 15) C16(138)                       | 24.54    | 1646013m  | 34.04068  | ng     | 91%  |
| 16) C17(187)                       | 25.29    | 1405128m  | 33.17321  | ng     | 88%  |
| 17) C16(128)                       | 25.62    | 1896328m  | 41.18000  | ng     | 110% |
| 18) C17(180)                       | 27.16    | 1697932m  | 34.25103  | ng     | 91%  |
| 19) C17(170)                       | 27.96    | 1883299m  | 33.58574  | ng     | 90%  |
| 20) C18(195)                       | 29.04    | 1835547m  | 35.00659  | ng     | 93%  |
| 21) C19(206)                       | 30.30    | 1711103m  | 33.83966  | ng     | 90%  |
| 22) C110(209)                      | 30.90    | 1475784m  | 35.78901  | ng     | 95%  |
| 25) C12(8) #2                      | 13.11    | 2902885m  | 27.21871  | ng     | 73%  |
| 26) C13(18) #2                     | 14.99    | 3492468m  | 27.40676  | ng     | 73%  |
| 28) C13(28) #2                     | 17.76    | 6787451m  | 30.09176  | ng     | 80%  |
| 29) C14(52) #2                     | 19.14    | 4257973m  | 31.62067  | ng     | 84%  |
| 30) C14(44) #2                     | 19.96    | 7990254m  | 35.06639  | ng     | 94%  |
| 31) C14(66) #2                     | 22.36    | 7890882m  | 31.03418  | ng     | 83%  |
| 32) C15(101) #2                    | 23.24    | 5171580m  | 36.38440  | ng     | 97%  |
| 35) C15(118) #2                    | 26.35    | 7694198m  | 35.22260  | ng     | 94%  |
| 36) C16(153) #2                    | 26.93    | 7812001   | 33.87821  | ng     | 90%  |
| 37) C15(105) #2                    | 27.20    | 10226986m | 33.33487  | ng     | 89%  |
| 38) C16(138) #2                    | 27.78    | 7151824m  | 34.74639  | ng     | 93%  |
| 39) C17(187) #2                    | 28.13    | 8354811m  | 36.20753  | ng     | 97%  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7444.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0421\M7444.D\ECD2B.CH  
 Acq On : 11-4-2014 01:23:46 PM Operator: RR  
 Sample : CD585LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |     |
|-----|--------------|-------|-----------|----------|-------|-----|
| 40) | C16(128) #2  | 28.54 | 11176239m | 34.60911 | ng    | 92% |
| 41) | C17(180) #2  | 29.58 | 10057020m | 34.90774 | ng    | 93% |
| 42) | C17(170) #2  | 30.21 | 10669117m | 34.05548 | ng    | 91% |
| 43) | C18(195) #2  | 31.08 | 9999426m  | 34.88329 | ng    | 93% |
| 44) | C19(206) #2  | 32.18 | 8853224m  | 34.27727 | ng    | 91% |
| 45) | C110(209) #2 | 32.62 | 7309619m  | 36.25768 | ng    | 97% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7445.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0421\M7445.D\ECD2B.CH  
 Acq On : 11-4-2014 02:08:19 PM Operator: RR  
 Sample : M8159-P(2) Inst : INST. M  
 Misc : NBH14-0029 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:48:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:48:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3185597m    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 6340705m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 12991991    | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 26845029m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 6452176m    | 253.21931 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 66.66% |
| 11) s C16(152)                     | 20.48    | 8606653m    | 262.41003 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 68.80% |
| 27) s C13(34) #2                   | 16.48    | 37670233    | 364.93974 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 96.07% |
| 34) s C16(152) #2                  | 23.62    | 44281614    | 294.05572 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 77.10% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1755465m    | 95.09145  | ng     |
| 3) C13(18)                         | 12.13    | 3838710m    | 193.91017 | ng     |
| 5) C13(28)                         | 14.20    | e 15025899m | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | E 14467526m | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | 7702485m    | 206.65082 | ng     |
| 8) C14(66)                         | 18.62    | 9957478m    | 241.27479 | ng     |
| 9) C15(101)                        | 19.72    | e 16578980m | 457.70927 | ng     |
| 12) C15(118)                       | 22.40    | e 20983692m | BelowCal  | ng     |
| 13) C16(153)                       | 23.44    | E 22770148m | 749.69135 | ng     |
| 14) C15(105)                       | 23.46    | 7543606m    | 144.73396 | ng     |
| 15) C16(138)                       | 24.54    | e 23571139m | 509.42813 | ng     |
| 16) C17(187)                       | 25.30    | 2993125m    | 58.90501  | ng     |
| 17) C16(128)                       | 25.63    | 5271040m    | 95.03336  | ng     |
| 18) C17(180)                       | 27.17    | 4761936m    | 80.18564  | ng     |
| 19) C17(170)                       | 27.97    | 3630139m    | 52.95458  | ng     |
| 20) C18(195)                       | 29.04    | 652018m     | 8.79566   | ng     |
| 21) C19(206)                       | 30.31    | 677511m     | 9.76064   | ng     |
| 22) C110(209)                      | 30.91    | 245634m     | 3.39767   | ng     |
| 25) C12(8) #2                      | 13.10    | 10465706    | 130.07847 | ng     |
| 26) C13(18) #2                     | 14.99    | 20635547    | 266.63032 | ng     |
| 28) C13(28) #2                     | 17.76    | e 99124838  | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | E 82362723  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 41679716    | 255.97207 | ng     |
| 31) C14(66) #2                     | 22.35    | 45063398m   | 239.33505 | ng     |
| 32) C15(101) #2                    | 23.23    | E 109183393 | 696.73143 | ng     |
| 35) C15(118) #2                    | 26.34    | E 114979727 | 764.57254 | ng     |
| 36) C16(153) #2                    | 26.94    | e 94765566  | 521.56600 | ng     |
| 37) C15(105) #2                    | 27.20    | 40335858    | 157.98719 | ng     |
| 38) C16(138) #2                    | 27.78    | e 75692477  | 378.77368 | ng     |
| 39) C17(187) #2                    | 28.14    | 13873175m   | 73.93491  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7445.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0421\M7445.D\ECD2B.CH  
 Acq On : 11-4-2014 02:08:19 PM Operator: RR  
 Sample : M8159-P(2) Inst : INST. M  
 Misc : NBH14-0029 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:48:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:48:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 26739267m | 100.81413 | ng    |
| 41) | C17(180) #2  | 29.59 | 23810783m | 99.78923  | ng    |
| 42) | C17(170) #2  | 30.22 | 16315555m | 62.82205  | ng    |
| 43) | C18(195) #2  | 31.08 | 2842651m  | 11.09111  | ng    |
| 44) | C19(206) #2  | 32.18 | 2654671m  | 11.65337  | ng    |
| 45) | C110(209) #2 | 32.62 | 908235m   | 4.17216   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7446.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0421\M7446.D\ECD2B.CH  
 Acq On : 11-4-2014 02:52:46 PM Operator: RR  
 Sample : M8160-P(2) Inst : INST. M  
 Misc : NBH14-0033 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 3290035   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 6897014   | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.51    | 13115245m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 29050514m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 8403672   | 357.55917 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 94.13%  |
| 11) s C16(152)                     | 20.48    | 10749473  | 309.20712 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 81.07%  |
| 27) s C13(34) #2                   | 16.48    | 41172640m | 413.40098 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 108.83% |
| 34) s C16(152) #2                  | 23.62    | 51819251  | 314.67756 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 82.51%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 855882m   | 40.25274  | ng      |
| 3) C13(18)                         | 12.13    | 1642149   | 66.23053  | ng      |
| 5) C13(28)                         | 14.20    | 8197435m  | 212.44959 | ng      |
| 6) C14(52)                         | 15.83    | 5213753   | 185.10315 | ng      |
| 7) C14(44)                         | 16.70    | 3129579   | 70.04967  | ng      |
| 8) C14(66)                         | 18.61    | 4751899m  | 96.59006  | ng      |
| 9) C15(101)                        | 19.72    | 5935929   | 122.05071 | ng      |
| 12) C15(118)                       | 22.39    | 7897894m  | 169.41834 | ng      |
| 13) C16(153)                       | 23.43    | 6935821m  | 147.31053 | ng      |
| 14) C15(105)                       | 23.45    | 3840228m  | 61.52869  | ng      |
| 15) C16(138)                       | 24.53    | 8518484m  | 142.43186 | ng      |
| 16) C17(187)                       | 25.29    | 1023517   | 16.59319  | ng      |
| 17) C16(128)                       | 25.63    | 2358782   | 37.52353  | ng      |
| 18) C17(180)                       | 27.16    | 1535511m  | 22.09197  | ng      |
| 19) C17(170)                       | 27.96    | 1198608m  | 14.78110  | ng      |
| 20) C18(195)                       | 29.04    | 216346    | 1.61375   | ng      |
| 21) C19(206)                       | 30.30    | 211714m   | 1.86434   | ng      |
| 22) C110(209)                      | 30.90    | 152558m   | 1.28663   | ng      |
| 25) C12(8) #2                      | 13.10    | 3897802m  | 42.67312  | ng      |
| 26) C13(18) #2                     | 14.99    | 7668581m  | 78.45888  | ng      |
| 28) C13(28) #2                     | 17.76    | 37157452m | 222.57306 | ng      |
| 29) C14(52) #2                     | 19.15    | 24552594m | 274.10606 | ng      |
| 30) C14(44) #2                     | 19.95    | 14817011m | 76.70927  | ng      |
| 31) C14(66) #2                     | 22.35    | 18618646m | 87.80350  | ng      |
| 32) C15(101) #2                    | 23.22    | 16606909m | 133.89741 | ng      |
| 35) C15(118) #2                    | 26.33    | 39953048  | 225.32395 | ng      |
| 36) C16(153) #2                    | 26.94    | 28465270  | 147.29518 | ng      |
| 37) C15(105) #2                    | 27.20    | 17767286  | 65.12665  | ng      |
| 38) C16(138) #2                    | 27.78    | 27703193  | 143.23819 | ng      |
| 39) C17(187) #2                    | 28.14    | 4067312m  | 18.35337  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7446.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0421\M7446.D\ECD2B.CH  
 Acq On : 11-4-2014 02:52:46 PM Operator: RR  
 Sample : M8160-P(2) Inst : INST. M  
 Misc : NBH14-0033 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 10662444m | 36.60395 | ng    |
| 41) | C17(180) #2  | 29.58 | 6996764m  | 26.50466 | ng    |
| 42) | C17(170) #2  | 30.21 | 5340837m  | 18.28362 | ng    |
| 43) | C18(195) #2  | 31.08 | 847735m   | 2.09752  | ng    |
| 44) | C19(206) #2  | 32.18 | 750236m   | 2.20165  | ng    |
| 45) | C110(209) #2 | 32.62 | 559615m   | 1.73748  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7446.D MM0417C.M Fri Nov 21 10:58:15 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7447.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0421\M7447.D\ECD2B.CH  
 Acq On : 11-4-2014 03:37:17 PM Operator: RR  
 Sample : M8161-P(2) Inst : INST. M  
 Misc : NBH14-0037 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:54 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 2499625m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 4985421m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 10327615    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.81    | 18134199m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.41    | 6918900m    | 413.23123  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 108.78% |
| 11) s C16(152)                     | 20.49    | 8182208     | 329.23929  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 86.33%  |
| 27) s C13(34) #2                   | 16.48    | 33849222m   | 444.90166  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 117.12% |
| 34) s C16(152) #2                  | 23.63    | 38040523    | 361.41349  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 94.76%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 6382535   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 12674985  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 82006758  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 45673544  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 26860242  | BelowCal   | ng      |
| 8) C14(66)                         | 18.65    | E 51376272  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 36039592  | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 52578751  | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 60270169m | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | E 24559012m | BelowCal   | ng      |
| 15) C16(138)                       | 24.55    | E 73264399  | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 5531092     | 146.85843  | ng      |
| 17) C16(128)                       | 25.64    | e 16697719m | 490.71375  | ng      |
| 18) C17(180)                       | 27.18    | 11143275m   | 253.26620  | ng      |
| 19) C17(170)                       | 27.97    | 9247242m    | 180.83062  | ng      |
| 20) C18(195)                       | 29.05    | 1376839     | 26.30729   | ng      |
| 21) C19(206)                       | 30.31    | 1381050m    | 27.51059   | ng      |
| 22) C110(209)                      | 30.91    | 518005m     | 11.70342   | ng      |
| 25) C12(8) #2                      | 13.11    | e 30940765  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | E 59675059  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 230245866 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 222744379 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 127928256 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 160187042 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.24    | E 224871345 | 1398.83155 | ng      |
| 35) C15(118) #2                    | 26.34    | E 242129926 | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.94    | E 174371025 | 1325.62830 | ng      |
| 37) C15(105) #2                    | 27.21    | e 126892642 | 643.57912  | ng      |
| 38) C16(138) #2                    | 27.79    | E 222874221 | 1197.70360 | ng      |
| 39) C17(187) #2                    | 28.14    | 24039730    | 188.27391  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7447.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0421\M7447.D\ECD2B.CH  
 Acq On : 11-4-2014 03:37:17 PM Operator: RR  
 Sample : M8161-P(2) Inst : INST. M  
 Misc : NBH14-0037 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:44:54 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 85004133  | 436.33294 | ng    |
| 41) | C17(180) #2  | 29.59 | 53263756m | 310.53522 | ng    |
| 42) | C17(170) #2  | 30.22 | 37364822m | 205.66865 | ng    |
| 43) | C18(195) #2  | 31.09 | 5357547m  | 33.02713  | ng    |
| 44) | C19(206) #2  | 32.19 | 4538186m  | 31.01736  | ng    |
| 45) | C110(209) #2 | 32.63 | 1745932m  | 14.56948  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7448.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0421\M7448.D\ECD2B.CH  
 Acq On : 11-4-2014 04:21:43 PM Operator: RR  
 Sample : M8161DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0037 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 2665543m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.21    | 5191740m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 9909362m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.81    | 21400555m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.41    | 6306274m    | 316.44029  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 83.30%  |
| 11) s C16(152)                     | 20.49    | 7058552m    | 262.90971  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 68.94%  |
| 27) s C13(34) #2                   | 16.48    | 29873756m   | 387.39552  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 101.98% |
| 34) s C16(152) #2                  | 23.63    | 32154593    | 270.99200  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 71.05%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | e 6657274   | BelowCal   | ng      |
| 3) C13(18)                         | 12.13    | E 12039347  | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 80172076  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 42680763  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 25529291  | BelowCal   | ng      |
| 8) C14(66)                         | 18.65    | E 48183229  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 33207147  | BelowCal   | ng      |
| 12) C15(118)                       | 22.41    | E 49652026  | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 57578669m | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | e 19475632m | BelowCal   | ng      |
| 15) C16(138)                       | 24.55    | E 66245417  | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 4702073m    | 118.01470  | ng      |
| 17) C16(128)                       | 25.64    | e 15003151m | 397.55253  | ng      |
| 18) C17(180)                       | 27.17    | 9638662m    | 207.58299  | ng      |
| 19) C17(170)                       | 27.97    | 8049587m    | 149.72195  | ng      |
| 20) C18(195)                       | 29.05    | 1263719m    | 22.98746   | ng      |
| 21) C19(206)                       | 30.31    | 1054598m    | 19.78531   | ng      |
| 22) C110(209)                      | 30.91    | 351495m     | 7.08365    | ng      |
| 25) C12(8) #2                      | 13.11    | e 28830657  | BelowCal   | ng      |
| 26) C13(18) #2                     | 15.00    | e 53680720  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 212200669 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 198812700 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 114590540 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 143738260 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 167222355 | 1170.17654 | ng      |
| 35) C15(118) #2                    | 26.34    | E 215214421 | 2320.87915 | ng      |
| 36) C16(153) #2                    | 26.94    | E 151812695 | 1005.54554 | ng      |
| 37) C15(105) #2                    | 27.21    | e 114534704 | 510.50274  | ng      |
| 38) C16(138) #2                    | 27.78    | E 194003998 | 960.10206  | ng      |
| 39) C17(187) #2                    | 28.14    | 20776051m   | 138.90351  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7448.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0421\M7448.D\ECD2B.CH  
 Acq On : 11-4-2014 04:21:43 PM Operator: RR  
 Sample : M8161DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0037 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:00 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:44:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 76282325  | 340.55767 | ng    |
| 41) | C17(180) #2  | 29.59 | 46626599m | 235.92538 | ng    |
| 42) | C17(170) #2  | 30.22 | 35596331  | 167.97357 | ng    |
| 43) | C18(195) #2  | 31.09 | 4382688m  | 22.58697  | ng    |
| 44) | C19(206) #2  | 32.18 | 3697850m  | 21.14375  | ng    |
| 45) | C110(209) #2 | 32.62 | 1481293m  | 10.07138  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7449.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0421\M7449.D\ECD2B.CH  
 Acq On : 11-4-2014 05:06:29 PM Operator: RR  
 Sample : M8162-P(2) Inst : INST. M  
 Misc : NBH14-0041 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:55:42 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:55:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 3141055   | 95.00000  | ng     |
| 10) I C16(161)              | 23.21    | 6527371m  | 95.00000  | ng     |
| 24) I C15(96) #2            | 20.52    | 13989067m | 95.00000  | ng     |
| 33) I C16(161) #2           | 26.79    | 31780139m | 95.00000  | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 5582001   | 213.03765 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 56.08% |
| 11) s C16(152)              | 20.48    | 7074878   | 202.64101 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 53.13% |
| 27) s C13(34) #2            | 16.48    | 29749303m | 239.56627 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 63.07% |
| 34) s C16(152) #2           | 23.62    | 36489566  | 213.13422 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 55.88% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 898020    | 44.84675  | ng     |
| 3) C13(18)                  | 12.13    | 1652923   | 70.42287  | ng     |
| 5) C13(28)                  | 14.20    | 8367640m  | 231.49295 | ng     |
| 6) C14(52)                  | 15.83    | 5122638m  | 192.01232 | ng     |
| 7) C14(44)                  | 16.70    | 3133177m  | 73.84735  | ng     |
| 8) C14(66)                  | 18.60    | 4394018m  | 93.20108  | ng     |
| 9) C15(101)                 | 19.72    | 5903328   | 127.69191 | ng     |
| 12) C15(118)                | 22.39    | 8325510m  | 191.74043 | ng     |
| 13) C16(153)                | 23.43    | 6122659m  | 136.61663 | ng     |
| 14) C15(105)                | 23.45    | 3627591m  | 61.40177  | ng     |
| 15) C16(138)                | 24.53    | 7640092m  | 134.41276 | ng     |
| 16) C17(187)                | 25.29    | 808931m   | 13.45162  | ng     |
| 17) C16(128)                | 25.63    | 2022474m  | 33.86850  | ng     |
| 18) C17(180)                | 27.16    | 1301666m  | 19.57698  | ng     |
| 19) C17(170)                | 27.96    | 1001962m  | 12.85761  | ng     |
| 20) C18(195)                | 29.04    | 183777m   | 1.29134   | ng     |
| 21) C19(206)                | 30.30    | 159127m   | 1.21054   | ng     |
| 22) C110(209)               | 30.90    | 53425m    | BelowCal  | ng     |
| 25) C12(8) #2               | 13.11    | 4480867m  | 46.34399  | ng     |
| 26) C13(18) #2              | 14.99    | 8207747m  | 78.77011  | ng     |
| 28) C13(28) #2              | 17.76    | 38470370m | 214.66977 | ng     |
| 29) C14(52) #2              | 19.15    | 26734363m | 282.40733 | ng     |
| 30) C14(44) #2              | 19.96    | 17282103  | 84.55504  | ng     |
| 31) C14(66) #2              | 22.35    | 20482874m | 90.78912  | ng     |
| 32) C15(101) #2             | 23.23    | 16459337m | 124.75508 | ng     |
| 35) C15(118) #2             | 26.33    | 42026129  | 216.25534 | ng     |
| 36) C16(153) #2             | 26.94    | 27864005  | 131.59175 | ng     |
| 37) C15(105) #2             | 27.20    | 19340458  | 64.80154  | ng     |
| 38) C16(138) #2             | 27.78    | 28973506  | 137.32202 | ng     |
| 39) C17(187) #2             | 28.14    | 3902423m  | 15.77557  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7449.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0421\M7449.D\ECD2B.CH  
 Acq On : 11-4-2014 05:06:29 PM Operator: RR  
 Sample : M8162-P(2) Inst : INST. M  
 Misc : NBH14-0041 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:55:42 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:55:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 10983537m | 34.37166 | ng    |
| 41) | C17(180) #2  | 29.58 | 7085480m  | 24.41769 | ng    |
| 42) | C17(170) #2  | 30.21 | 5279079m  | 16.38828 | ng    |
| 43) | C18(195) #2  | 31.08 | 748532m   | 1.43498  | ng    |
| 44) | C19(206) #2  | 32.18 | 635358m   | 1.44408  | ng    |
| 45) | C110(209) #2 | 32.62 | 268910m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7450.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0421\M7450.D\ECD2B.CH  
 Acq On : 11-4-2014 05:50:54 PM Operator: RR  
 Sample : M8349-P(2) Inst : INST. M  
 Misc : NBH14-0181 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3295682m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7367513   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14555472  | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 29185275m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7172016   | 279.82696 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 73.66% |
| 11) s C16(152)                     | 20.48    | 9369302   | 243.24863 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 63.78% |
| 27) s C13(34) #2                   | 16.48    | 34975948m | 280.46936 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 73.83% |
| 34) s C16(152) #2                  | 23.62    | 44286194  | 273.35379 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 71.67% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 1363501   | 68.35431  | ng     |
| 3) C13(18)                         | 12.13    | 1881135   | 77.40629  | ng     |
| 5) C13(28)                         | 14.20    | 6799119m  | 168.44385 | ng     |
| 6) C14(52)                         | 15.84    | 5504253   | 197.98572 | ng     |
| 7) C14(44)                         | 16.70    | 3517507   | 79.62802  | ng     |
| 8) C14(66)                         | 18.61    | 5060586m  | 103.45557 | ng     |
| 9) C15(101)                        | 19.72    | 7455599   | 157.16461 | ng     |
| 12) C15(118)                       | 22.39    | 10544424m | 219.38612 | ng     |
| 13) C16(153)                       | 23.43    | 9469966m  | 192.88924 | ng     |
| 14) C15(105)                       | 23.45    | 5858055m  | 91.28664  | ng     |
| 15) C16(138)                       | 24.53    | 11097470m | 176.70060 | ng     |
| 16) C17(187)                       | 25.29    | 1212913   | 18.68108  | ng     |
| 17) C16(128)                       | 25.63    | 2886928   | 43.21797  | ng     |
| 18) C17(180)                       | 27.16    | 1850118m  | 25.18169  | ng     |
| 19) C17(170)                       | 27.96    | 1423107m  | 16.61980  | ng     |
| 20) C18(195)                       | 29.04    | 268961    | 2.12942   | ng     |
| 21) C19(206)                       | 30.30    | 221814m   | 1.80334   | ng     |
| 22) C110(209)                      | 30.90    | 68457m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 6237246m  | 63.86582  | ng     |
| 26) C13(18) #2                     | 14.99    | 8769717m  | 81.20922  | ng     |
| 28) C13(28) #2                     | 17.76    | 42484153m | 230.83805 | ng     |
| 29) C14(52) #2                     | 19.15    | 26491198m | 263.35071 | ng     |
| 30) C14(44) #2                     | 19.96    | 16600647m | 77.50339  | ng     |
| 31) C14(66) #2                     | 22.35    | 24546437m | 105.84077 | ng     |
| 32) C15(101) #2                    | 23.23    | 21562013m | 155.49785 | ng     |
| 35) C15(118) #2                    | 26.33    | 50124342m | 284.54376 | ng     |
| 36) C16(153) #2                    | 26.94    | 34320716  | 177.03844 | ng     |
| 37) C15(105) #2                    | 27.20    | 24084559  | 87.88756  | ng     |
| 38) C16(138) #2                    | 27.78    | 37647673  | 189.51048 | ng     |
| 39) C17(187) #2                    | 28.14    | 4889020m  | 22.46563  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7450.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0421\M7450.D\ECD2B.CH  
 Acq On : 11-4-2014 05:50:54 PM Operator: RR  
 Sample : M8349-P(2) Inst : INST. M  
 Misc : NBH14-0181 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 14028420 | 48.39408 | ng    |
| 41) | C17(180) #2  | 29.59 | 9829178  | 37.63800 | ng    |
| 42) | C17(170) #2  | 30.22 | 6391344m | 22.03196 | ng    |
| 43) | C18(195) #2  | 31.08 | 991935m  | 2.66301  | ng    |
| 44) | C19(206) #2  | 32.18 | 660212m  | 1.78560  | ng    |
| 45) | C110(209) #2 | 32.62 | 255930m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7451.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0421\M7451.D\ECD2B.CH  
 Acq On : 11-4-2014 06:35:33 PM Operator: RR  
 Sample : M8350-P(2) Inst : INST. M  
 Misc : NBH14-0185 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3483908   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7614196   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14316221m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 32976949m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 6932223   | 247.19653 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 65.07% |
| 11) s C16(152)                     | 20.48    | 9105274   | 226.62090 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 59.42% |
| 27) s C13(34) #2                   | 16.48    | 35932665  | 297.31301 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 78.27% |
| 34) s C16(152) #2                  | 23.62    | 42870126  | 238.33979 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 62.49% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 1235603   | 57.34076  | ng     |
| 3) C13(18)                         | 12.13    | 1804108   | 69.12047  | ng     |
| 5) C13(28)                         | 14.20    | 6432794m  | 147.70530 | ng     |
| 6) C14(52)                         | 15.83    | 5577924   | 187.53633 | ng     |
| 7) C14(44)                         | 16.70    | 3472953   | 73.79495  | ng     |
| 8) C14(66)                         | 18.61    | 4922594m  | 94.24715  | ng     |
| 9) C15(101)                        | 19.72    | 6122489   | 118.55898 | ng     |
| 12) C15(118)                       | 22.39    | 9173454m  | 179.54757 | ng     |
| 13) C16(153)                       | 23.43    | 7064174m  | 135.00870 | ng     |
| 14) C15(105)                       | 23.45    | 4599925m  | 67.30819  | ng     |
| 15) C16(138)                       | 24.53    | 9105882m  | 137.56265 | ng     |
| 16) C17(187)                       | 25.29    | 1070765   | 15.59451  | ng     |
| 17) C16(128)                       | 25.62    | 2416673   | 34.72486  | ng     |
| 18) C17(180)                       | 27.16    | 1493717m  | 19.22611  | ng     |
| 19) C17(170)                       | 27.96    | 1186161m  | 13.07384  | ng     |
| 20) C18(195)                       | 29.04    | 206193m   | 1.18351   | ng     |
| 21) C19(206)                       | 30.30    | 213702m   | 1.59213   | ng     |
| 22) C110(209)                      | 30.90    | 66505m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 7612305   | 81.13818  | ng     |
| 26) C13(18) #2                     | 14.99    | 9636596   | 92.26849  | ng     |
| 28) C13(28) #2                     | 17.76    | 39255132  | 213.91253 | ng     |
| 29) C14(52) #2                     | 19.15    | 26086831m | 263.79239 | ng     |
| 30) C14(44) #2                     | 19.96    | 17406500  | 83.09619  | ng     |
| 31) C14(66) #2                     | 22.35    | 20149052m | 86.98918  | ng     |
| 32) C15(101) #2                    | 23.23    | 15385252m | 114.25567 | ng     |
| 35) C15(118) #2                    | 26.33    | 43049115  | 213.35030 | ng     |
| 36) C16(153) #2                    | 26.93    | 29242603  | 133.11495 | ng     |
| 37) C15(105) #2                    | 27.20    | 19567109  | 63.16767  | ng     |
| 38) C16(138) #2                    | 27.78    | 29733162  | 135.89893 | ng     |
| 39) C17(187) #2                    | 28.14    | 4402641   | 17.38015  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7451.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0421\M7451.D\ECD2B.CH  
 Acq On : 11-4-2014 06:35:33 PM Operator: RR  
 Sample : M8350-P(2) Inst : INST. M  
 Misc : NBH14-0185 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 11426504 | 34.46443 | ng    |
| 41) | C17(180) #2  | 29.58 | 7024670m | 23.25757 | ng    |
| 42) | C17(170) #2  | 30.21 | 5471410m | 16.36729 | ng    |
| 43) | C18(195) #2  | 31.08 | 806515m  | 1.54136  | ng    |
| 44) | C19(206) #2  | 32.18 | 588391m  | 1.16475  | ng    |
| 45) | C110(209) #2 | 32.62 | 262837m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7452.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0421\M7452.D\ECD2B.CH  
 Acq On : 11-4-2014 07:19:59 PM Operator: RR  
 Sample : M8351-P(2) Inst : INST. M  
 Misc : NBH14-0189 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:25 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3185828m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7108818m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14538542m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 32542506m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 5840350   | 221.77684 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 58.38% |
| 11) s C16(152)                     | 20.48    | 7359532m  | 192.42253 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 50.45% |
| 27) s C13(34) #2                   | 16.48    | 29698012m | 227.78952 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 59.97% |
| 34) s C16(152) #2                  | 23.62    | 37075378  | 211.63654 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 55.49% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 800790    | 38.69615  | ng     |
| 3) C13(18)                         | 12.13    | 1301539   | 52.50692  | ng     |
| 5) C13(28)                         | 14.20    | 6514500m  | 166.66601 | ng     |
| 6) C14(52)                         | 15.83    | 4056734   | 141.21940 | ng     |
| 7) C14(44)                         | 16.70    | 2459881   | 55.58347  | ng     |
| 8) C14(66)                         | 18.61    | 3473079m  | 70.69516  | ng     |
| 9) C15(101)                        | 19.72    | 4901834m  | 102.48549 | ng     |
| 12) C15(118)                       | 22.39    | 7606152m  | 156.85927 | ng     |
| 13) C16(153)                       | 23.43    | 5386326m  | 108.67208 | ng     |
| 14) C15(105)                       | 23.45    | 3397393m  | 52.02936  | ng     |
| 15) C16(138)                       | 24.54    | 6855712m  | 109.20170 | ng     |
| 16) C17(187)                       | 25.29    | 844198m   | 12.78820  | ng     |
| 17) C16(128)                       | 25.63    | 1743317m  | 26.56720  | ng     |
| 18) C17(180)                       | 27.16    | 1305287m  | 17.86708  | ng     |
| 19) C17(170)                       | 27.96    | 969866m   | 11.24031  | ng     |
| 20) C18(195)                       | 29.04    | 187236m   | 1.10911   | ng     |
| 21) C19(206)                       | 30.30    | 146043m   | 0.81383   | ng     |
| 22) C110(209)                      | 30.90    | 56491m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 3736203m  | 36.34534  | ng     |
| 26) C13(18) #2                     | 14.99    | 6210969m  | 54.71325  | ng     |
| 28) C13(28) #2                     | 17.76    | 31904397m | 164.53005 | ng     |
| 29) C14(52) #2                     | 19.15    | 20127460m | 184.04887 | ng     |
| 30) C14(44) #2                     | 19.96    | 12113522  | 55.19778  | ng     |
| 31) C14(66) #2                     | 22.35    | 18118172m | 76.29845  | ng     |
| 32) C15(101) #2                    | 23.23    | 16503713m | 120.50203 | ng     |
| 35) C15(118) #2                    | 26.33    | 35339037m | 175.98635 | ng     |
| 36) C16(153) #2                    | 26.93    | 24984583  | 114.93054 | ng     |
| 37) C15(105) #2                    | 27.20    | 15533711  | 50.65083  | ng     |
| 38) C16(138) #2                    | 27.78    | 24242916m | 113.45451 | ng     |
| 39) C17(187) #2                    | 28.14    | 4143228   | 16.45323  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7452.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0421\M7452.D\ECD2B.CH  
 Acq On : 11-4-2014 07:19:59 PM Operator: RR  
 Sample : M8351-P(2) Inst : INST. M  
 Misc : NBH14-0189 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:25 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9239824  | 27.92648 | ng    |
| 41) | C17(180) #2  | 29.58 | 6627258m | 22.16276 | ng    |
| 42) | C17(170) #2  | 30.21 | 4606597m | 13.75941 | ng    |
| 43) | C18(195) #2  | 31.08 | 787710m  | 1.51177  | ng    |
| 44) | C19(206) #2  | 32.18 | 581025m  | 1.16629  | ng    |
| 45) | C110(209) #2 | 32.62 | 246474m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7454.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0421\M7454.D\ECD2B.CH  
 Acq On : 11-4-2014 08:49:03 PM Operator: RR  
 Sample : M8352-P(2) Inst : INST. M  
 Misc : NBH14-0193 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3201354m    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 6558467m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 11988827m   | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 25218761    | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 5616054     | 209.53286 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 55.16% |
| 11) s C16(152)                     | 20.48    | 6825223     | 193.55325 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 50.75% |
| 27) s C13(34) #2                   | 16.47    | 25813828m   | 243.35022 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 64.06% |
| 34) s C16(152) #2                  | 23.62    | 30464113    | 223.14184 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 58.51% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 2825914     | 168.16500 | ng     |
| 3) C13(18)                         | 12.13    | 4319339     | 227.39477 | ng     |
| 5) C13(28)                         | 14.20    | e 15990006m | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | e 12851243  | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | 9071474     | 254.25503 | ng     |
| 8) C14(66)                         | 18.62    | e 12779619m | 341.12356 | ng     |
| 9) C15(101)                        | 19.72    | e 16447872  | 448.15568 | ng     |
| 12) C15(118)                       | 22.39    | E 33205803  | BelowCal  | ng     |
| 13) C16(153)                       | 23.43    | e 15672246m | 401.42266 | ng     |
| 14) C15(105)                       | 23.45    | 10881647m   | 217.72730 | ng     |
| 15) C16(138)                       | 24.54    | e 26320497  | 565.19593 | ng     |
| 16) C17(187)                       | 25.29    | 2268602     | 42.24118  | ng     |
| 17) C16(128)                       | 25.63    | 5995655     | 105.15579 | ng     |
| 18) C17(180)                       | 27.16    | 3798884m    | 61.11506  | ng     |
| 19) C17(170)                       | 27.96    | 3038728m    | 42.43147  | ng     |
| 20) C18(195)                       | 29.04    | 509297      | 6.26305   | ng     |
| 21) C19(206)                       | 30.30    | 406951m     | 5.11178   | ng     |
| 22) C110(209)                      | 30.90    | 174404      | 1.85447   | ng     |
| 25) C12(8) #2                      | 13.10    | 12298390m   | 173.57554 | ng     |
| 26) C13(18) #2                     | 14.99    | 19060810m   | 267.00204 | ng     |
| 28) C13(28) #2                     | 17.76    | e 91331386  | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | e 59907178  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 40745332m   | 276.20385 | ng     |
| 31) C14(66) #2                     | 22.35    | e 79258985  | 604.32528 | ng     |
| 32) C15(101) #2                    | 23.23    | e 81738739  | 590.85471 | ng     |
| 35) C15(118) #2                    | 26.33    | e 103345644 | 727.46671 | ng     |
| 36) C16(153) #2                    | 26.93    | e 66869240  | 395.57358 | ng     |
| 37) C15(105) #2                    | 27.20    | 50274355    | 207.00410 | ng     |
| 38) C16(138) #2                    | 27.78    | e 77168959  | 405.99623 | ng     |
| 39) C17(187) #2                    | 28.14    | 8676659m    | 48.65044  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7454.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0421\M7454.D\ECD2B.CH  
 Acq On : 11-4-2014 08:49:03 PM Operator: RR  
 Sample : M8352-P(2) Inst : INST. M  
 Misc : NBH14-0193 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 27740305  | 111.18461 | ng    |
| 41) | C17(180) #2  | 29.58 | 17860323m | 79.90105  | ng    |
| 42) | C17(170) #2  | 30.21 | 12511902m | 51.23299  | ng    |
| 43) | C18(195) #2  | 31.08 | 1896755m  | 7.50244   | ng    |
| 44) | C19(206) #2  | 32.18 | 1215386m  | 5.10271   | ng    |
| 45) | C110(209) #2 | 32.62 | 478481m   | 1.68893   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7455.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0421\M7455.D\ECD2B.CH  
 Acq On : 11-4-2014 09:33:36 PM Operator: RR  
 Sample : M8353-P(2) Inst : INST. M  
 Misc : NBH14-0197 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:42 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3328997     | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 7301659     | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 13536567m   | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 28949874m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 7698902     | 305.76513 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 80.49% |
| 11) s C16(152)                     | 20.48    | 9527327     | 250.60511 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 65.71% |
| 27) s C13(34) #2                   | 16.48    | 38878493m   | 359.79497 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 94.72% |
| 34) s C16(152) #2                  | 23.62    | 47072557    | 290.39950 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 76.14% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1124570     | 54.24756  | ng     |
| 3) C13(18)                         | 12.13    | 2056435     | 84.89306  | ng     |
| 5) C13(28)                         | 14.20    | 9269396m    | 245.35386 | ng     |
| 6) C14(52)                         | 15.84    | e 6897400   | 265.19543 | ng     |
| 7) C14(44)                         | 16.70    | 3895065     | 88.24599  | ng     |
| 8) C14(66)                         | 18.60    | 5615872m    | 115.05116 | ng     |
| 9) C15(101)                        | 19.72    | 7436029     | 154.92349 | ng     |
| 12) C15(118)                       | 22.39    | e 10921917m | 231.19824 | ng     |
| 13) C16(153)                       | 23.43    | 9693394m    | 199.96494 | ng     |
| 14) C15(105)                       | 23.45    | 4698088m    | 72.15487  | ng     |
| 15) C16(138)                       | 24.53    | 10923273m   | 175.38359 | ng     |
| 16) C17(187)                       | 25.29    | 1309602m    | 20.57863  | ng     |
| 17) C16(128)                       | 25.63    | 2858603     | 43.17842  | ng     |
| 18) C17(180)                       | 27.16    | 2089198     | 28.98545  | ng     |
| 19) C17(170)                       | 27.96    | 1559699m    | 18.56236  | ng     |
| 20) C18(195)                       | 29.04    | 274821      | 2.24303   | ng     |
| 21) C19(206)                       | 30.30    | 277188m     | 2.61647   | ng     |
| 22) C110(209)                      | 30.90    | 110635m     | 0.40250   | ng     |
| 25) C12(8) #2                      | 13.11    | 5173935m    | 56.29878  | ng     |
| 26) C13(18) #2                     | 14.99    | 9793468m    | 100.30185 | ng     |
| 28) C13(28) #2                     | 17.76    | 49476661m   | 308.09502 | ng     |
| 29) C14(52) #2                     | 19.15    | e 35978871  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 19018092m   | 97.36039  | ng     |
| 31) C14(66) #2                     | 22.35    | 24763720m   | 115.68455 | ng     |
| 32) C15(101) #2                    | 23.23    | 20300182m   | 157.31246 | ng     |
| 35) C15(118) #2                    | 26.33    | 52903508m   | 303.78597 | ng     |
| 36) C16(153) #2                    | 26.94    | 39239914    | 204.11121 | ng     |
| 37) C15(105) #2                    | 27.20    | 22447891    | 82.60836  | ng     |
| 38) C16(138) #2                    | 27.78    | 37344084    | 189.51079 | ng     |
| 39) C17(187) #2                    | 28.14    | 5785987m    | 27.28981  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7455.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0421\M7455.D\ECD2B.CH  
 Acq On : 11-4-2014 09:33:36 PM Operator: RR  
 Sample : M8353-P(2) Inst : INST. M  
 Misc : NBH14-0197 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:42 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 14266726m | 49.64854 | ng    |
| 41) | C17(180) #2  | 29.58 | 10028177m | 38.74843 | ng    |
| 42) | C17(170) #2  | 30.22 | 7060454m  | 24.68061 | ng    |
| 43) | C18(195) #2  | 31.08 | 1157367m  | 3.36752  | ng    |
| 44) | C19(206) #2  | 32.18 | 905927m   | 2.91139  | ng    |
| 45) | C110(209) #2 | 32.62 | 332896m   | 0.43854  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7455.D MM0417C.M Fri Nov 21 11:00:10 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7456.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0421\M7456.D\ECD2B.CH  
 Acq On : 04 Nov 2014 10:17 pm Operator: RR  
 Sample : M8354-P(2) Inst : INST. M  
 Misc : NBH14-0199 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 2861519m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.23    | 5448341m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 8845590m    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.81    | 16002002m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.41    | 7155088     | 345.21668  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 90.88%  |
| 11) s C16(152)                     | 20.50    | 8555784     | 312.03091  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 81.81%  |
| 27) s C13(34) #2                   | 16.48    | 28948847m   | 443.73847  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 116.81% |
| 34) s C16(152) #2                  | 23.63    | 33363944    | 359.55580  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 94.28%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.22    | e 4275477   | 387.57202  | ng      |
| 3) C13(18)                         | 12.13    | E 11487507  | BelowCal   | ng      |
| 5) C13(28)                         | 14.21    | E 87953485  | BelowCal   | ng      |
| 6) C14(52)                         | 15.85    | E 36963150  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | E 28776160  | BelowCal   | ng      |
| 8) C14(66)                         | 18.64    | E 84738048  | BelowCal   | ng      |
| 9) C15(101)                        | 19.73    | E 83981745  | BelowCal   | ng      |
| 12) C15(118)                       | 22.42    | E 159223622 | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 66547804m | BelowCal   | ng      |
| 14) C15(105)                       | 23.48    | E 43202067m | BelowCal   | ng      |
| 15) C16(138)                       | 24.56    | E 148506427 | BelowCal   | ng      |
| 16) C17(187)                       | 25.31    | 9748753m    | 248.93038  | ng      |
| 17) C16(128)                       | 25.65    | E 33477418  | BelowCal   | ng      |
| 18) C17(180)                       | 27.18    | e 26316750  | 604.15043  | ng      |
| 19) C17(170)                       | 27.98    | e 18804652  | 352.98143  | ng      |
| 20) C18(195)                       | 29.05    | 2716533     | 48.96975   | ng      |
| 21) C19(206)                       | 30.32    | 2536701m    | 47.35485   | ng      |
| 22) C110(209)                      | 30.92    | 842177m     | 18.19361   | ng      |
| 25) C12(8) #2                      | 13.11    | 17025782    | 454.45343  | ng      |
| 26) C13(18) #2                     | 15.00    | e 46866995  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 207949984 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 152540811 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | E 114133419 | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 227840140 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.24    | E 343788789 | 2058.92685 | ng      |
| 35) C15(118) #2                    | 26.34    | E 430049618 | BelowCal   | ng      |
| 36) C16(153) #2                    | 26.94    | E 270497230 | 2170.71047 | ng      |
| 37) C15(105) #2                    | 27.21    | E 236033341 | 1183.21471 | ng      |
| 38) C16(138) #2                    | 27.79    | E 397397694 | 1937.76975 | ng      |
| 39) C17(187) #2                    | 28.14    | 37338378m   | 322.51673  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7456.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0421\M7456.D\ECD2B.CH  
 Acq On : 04 Nov 2014 10:17 pm Operator: RR  
 Sample : M8354-P(2) Inst : INST. M  
 Misc : NBH14-0199 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  |   | Response  | Conc      | Units |
|-----|--------------|-------|---|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | e | 139925579 | 749.38699 | ng    |
| 41) | C17(180) #2  | 29.59 | e | 104581264 | 625.71358 | ng    |
| 42) | C17(170) #2  | 30.22 |   | 67053028  | 393.80981 | ng    |
| 43) | C18(195) #2  | 31.09 |   | 9234037m  | 64.90211  | ng    |
| 44) | C19(206) #2  | 32.19 |   | 6919068m  | 53.94366  | ng    |
| 45) | C110(209) #2 | 32.63 |   | 2472817m  | 24.21352  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7457.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0421\M7457.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:02 pm Operator: RR  
 Sample : M8364-P(2) Inst : INST. M  
 Misc : NBH14-0233 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3704337     | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 8405026     | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 14038107m   | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 28873982m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 8115585     | 282.51900 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 74.37% |
| 11) s C16(152)                     | 20.48    | 10544072    | 239.44975 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 62.78% |
| 27) s C13(34) #2                   | 16.48    | 36704852m   | 314.44299 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 82.78% |
| 34) s C16(152) #2                  | 23.62    | 45376372    | 281.88406 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 73.91% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1441553     | 63.73959  | ng     |
| 3) C13(18)                         | 12.13    | 1953266     | 70.58766  | ng     |
| 5) C13(28)                         | 14.20    | e 10894015m | 264.11964 | ng     |
| 6) C14(52)                         | 15.84    | 6171963     | 197.37390 | ng     |
| 7) C14(44)                         | 16.70    | 3743527     | 74.92642  | ng     |
| 8) C14(66)                         | 18.61    | 6171051m    | 113.42381 | ng     |
| 9) C15(101)                        | 19.72    | 8755766     | 165.19756 | ng     |
| 12) C15(118)                       | 22.39    | e 14846903m | 283.18566 | ng     |
| 13) C16(153)                       | 23.43    | 10700798m   | 190.84940 | ng     |
| 14) C15(105)                       | 23.45    | 7008578m    | 96.28658  | ng     |
| 15) C16(138)                       | 24.54    | 12765244m   | 178.30441 | ng     |
| 16) C17(187)                       | 25.29    | 1424434     | 19.30494  | ng     |
| 17) C16(128)                       | 25.62    | 3384150     | 44.45510  | ng     |
| 18) C17(180)                       | 27.16    | 2231894m    | 26.74809  | ng     |
| 19) C17(170)                       | 27.96    | 1762045m    | 18.18538  | ng     |
| 20) C18(195)                       | 29.04    | 299502      | 2.04184   | ng     |
| 21) C19(206)                       | 30.30    | 251047m     | 1.77867   | ng     |
| 22) C110(209)                      | 30.90    | 86575m      | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 6131265m    | 65.22452  | ng     |
| 26) C13(18) #2                     | 14.99    | 8576391m    | 82.51763  | ng     |
| 28) C13(28) #2                     | 17.76    | 48889886m   | 288.87057 | ng     |
| 29) C14(52) #2                     | 19.14    | 27665406m   | 295.52916 | ng     |
| 30) C14(44) #2                     | 19.95    | 16303513m   | 79.04713  | ng     |
| 31) C14(66) #2                     | 22.35    | 23238807m   | 103.72341 | ng     |
| 32) C15(101) #2                    | 23.22    | 22659318m   | 168.59786 | ng     |
| 35) C15(118) #2                    | 26.33    | e 54814328m | 316.26226 | ng     |
| 36) C16(153) #2                    | 26.93    | 37342177    | 194.75085 | ng     |
| 37) C15(105) #2                    | 27.20    | 25708437    | 94.76289  | ng     |
| 38) C16(138) #2                    | 27.78    | 39431270m   | 199.65045 | ng     |
| 39) C17(187) #2                    | 28.14    | 5229988m    | 24.49769  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7457.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0421\M7457.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:02 pm Operator: RR  
 Sample : M8364-P(2) Inst : INST. M  
 Misc : NBH14-0233 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 14554824m | 50.81251 | ng    |
| 41) | C17(180) #2  | 29.58 | 9510205m  | 36.78065 | ng    |
| 42) | C17(170) #2  | 30.21 | 7227003m  | 25.36170 | ng    |
| 43) | C18(195) #2  | 31.08 | 1053906m  | 2.95855  | ng    |
| 44) | C19(206) #2  | 32.18 | 671130m   | 1.86639  | ng    |
| 45) | C110(209) #2 | 32.62 | 244406m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7458.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0421\M7458.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:47 pm Operator: RR  
 Sample : M8366-P(2) Inst : INST. M  
 Misc : NBH14-0237 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.40    | 2834857m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.20    | 5618364m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 12338344    | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.81    | 22909356m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 7221947     | 355.98679  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 93.71%  |
| 11) s C16(152)                     | 20.49    | 8372003     | 292.98650  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 76.82%  |
| 27) s C13(34) #2                   | 16.48    | 36866173    | 382.05371  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 100.58% |
| 34) s C16(152) #2                  | 23.63    | 40071137    | 309.39347  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 81.12%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | 3499114     | 268.64769  | ng      |
| 3) C13(18)                         | 12.13    | e 7661621   | BelowCal   | ng      |
| 5) C13(28)                         | 14.20    | E 75568694  | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | E 33269254  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | e 15206519  | BelowCal   | ng      |
| 8) C14(66)                         | 18.63    | E 47004455  | BelowCal   | ng      |
| 9) C15(101)                        | 19.72    | E 38429406  | BelowCal   | ng      |
| 12) C15(118)                       | 22.40    | E 53501848  | BelowCal   | ng      |
| 13) C16(153)                       | 23.44    | E 27216830m | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | e 17533709m | BelowCal   | ng      |
| 15) C16(138)                       | 24.55    | E 55035415  | BelowCal   | ng      |
| 16) C17(187)                       | 25.30    | 5448585     | 127.00979  | ng      |
| 17) C16(128)                       | 25.63    | 12162114m   | 275.68163  | ng      |
| 18) C17(180)                       | 27.17    | 9732502m    | 192.83139  | ng      |
| 19) C17(170)                       | 27.97    | 7456195m    | 127.20615  | ng      |
| 20) C18(195)                       | 29.05    | 1130908     | 18.72623   | ng      |
| 21) C19(206)                       | 30.31    | 1158815m    | 20.11147   | ng      |
| 22) C110(209)                      | 30.91    | 416691m     | 7.90742    | ng      |
| 25) C12(8) #2                      | 13.11    | 17826594    | 272.22145  | ng      |
| 26) C13(18) #2                     | 15.00    | e 37261408  | BelowCal   | ng      |
| 28) C13(28) #2                     | 17.77    | E 218004996 | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | E 161958924 | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | e 73476313  | BelowCal   | ng      |
| 31) C14(66) #2                     | 22.36    | E 166349986 | BelowCal   | ng      |
| 32) C15(101) #2                    | 23.23    | E 219991846 | 1216.73164 | ng      |
| 35) C15(118) #2                    | 26.34    | E 247030138 | 2651.95676 | ng      |
| 36) C16(153) #2                    | 26.94    | E 185663764 | 1135.80675 | ng      |
| 37) C15(105) #2                    | 27.21    | e 94525058  | 405.32789  | ng      |
| 38) C16(138) #2                    | 27.78    | E 179117895 | 859.59063  | ng      |
| 39) C17(187) #2                    | 28.14    | 24561778m   | 153.12021  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7458.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0421\M7458.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:47 pm Operator: RR  
 Sample : M8366-P(2) Inst : INST. M  
 Misc : NBH14-0237 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:45:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 65435979  | 277.58687 | ng    |
| 41) | C17(180) #2  | 29.59 | 50874254m | 240.14284 | ng    |
| 42) | C17(170) #2  | 30.22 | 35615427  | 157.48779 | ng    |
| 43) | C18(195) #2  | 31.09 | 5378821m  | 26.05157  | ng    |
| 44) | C19(206) #2  | 32.18 | 4359117m  | 23.37890  | ng    |
| 45) | C110(209) #2 | 32.63 | 1543702m  | 9.76603   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7458.D MM0417C.M Fri Nov 21 11:00:14 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7459.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0421\M7459.D\ECD2B.CH  
 Acq On : 05 Nov 2014 12:31 am Operator: RR  
 Sample : M8367-P(2) Inst : INST. M  
 Misc : NBH14-0241 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.40    | 3094537     | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 3809975m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 11765464    | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 22157415m   | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 4778290     | 178.53802 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 47.00% |
| 11) s C16(152)                     | 20.49    | 5394440     | 275.74899 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 72.30% |
| 27) s C13(34) #2                   | 16.48    | 21411418m   | 197.74295 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 52.06% |
| 34) s C16(152) #2                  | 23.63    | 23521319    | 198.45002 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 52.03% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1463971     | 79.70652  | ng     |
| 3) C13(18)                         | 12.13    | 2631750     | 124.23338 | ng     |
| 5) C13(28)                         | 14.20    | E 29397764  | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | e 10989886  | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | 5433209     | 140.25605 | ng     |
| 8) C14(66)                         | 18.62    | 8967071m    | 218.80206 | ng     |
| 9) C15(101)                        | 19.72    | e 13440174  | 349.09206 | ng     |
| 12) C15(118)                       | 22.40    | E 27536148  | BelowCal  | ng     |
| 13) C16(153)                       | 23.43    | e 11355528m | 544.48605 | ng     |
| 14) C15(105)                       | 23.47    | 4120190m    | 129.47242 | ng     |
| 15) C16(138)                       | 24.54    | e 16509673m | 630.71906 | ng     |
| 16) C17(187)                       | 25.30    | 2396362     | 79.95822  | ng     |
| 17) C16(128)                       | 25.64    | 3935248m    | 119.86279 | ng     |
| 18) C17(180)                       | 27.16    | 3372532m    | 95.20962  | ng     |
| 19) C17(170)                       | 27.97    | 2614152m    | 63.96261  | ng     |
| 20) C18(195)                       | 29.04    | 456947m     | 10.51780  | ng     |
| 21) C19(206)                       | 30.31    | 457011m     | 11.12188  | ng     |
| 22) C110(209)                      | 30.90    | 203935m     | 5.27842   | ng     |
| 25) C12(8) #2                      | 13.10    | 6192159m    | 80.21559  | ng     |
| 26) C13(18) #2                     | 15.00    | 11798179m   | 147.39585 | ng     |
| 28) C13(28) #2                     | 17.76    | e 76969013  | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | e 53090450  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 23125296m   | 141.79833 | ng     |
| 31) C14(66) #2                     | 22.35    | 39074554m   | 227.24629 | ng     |
| 32) C15(101) #2                    | 23.23    | e 78454640  | 580.45553 | ng     |
| 35) C15(118) #2                    | 26.34    | e 81392048  | 643.97940 | ng     |
| 36) C16(153) #2                    | 26.94    | e 66052850  | 443.17144 | ng     |
| 37) C15(105) #2                    | 27.21    | 30019978    | 142.95627 | ng     |
| 38) C16(138) #2                    | 27.78    | 50672506    | 316.25260 | ng     |
| 39) C17(187) #2                    | 28.14    | 12023135    | 77.68905  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7459.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0421\M7459.D\ECD2B.CH  
 Acq On : 05 Nov 2014 12:31 am Operator: RR  
 Sample : M8367-P(2) Inst : INST. M  
 Misc : NBH14-0241 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:45:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 21476837m | 98.13172 | ng    |
| 41) | C17(180) #2  | 29.59 | 16407066m | 83.51144 | ng    |
| 42) | C17(170) #2  | 30.22 | 12472222m | 58.17489 | ng    |
| 43) | C18(195) #2  | 31.08 | 2167400m  | 10.14785 | ng    |
| 44) | C19(206) #2  | 32.18 | 1986004m  | 10.45968 | ng    |
| 45) | C110(209) #2 | 32.62 | 729896m   | 4.02334  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7460.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0421\M7460.D\ECD2B.CH  
 Acq On : 11-5-2014 01:16:01 AM Operator: RR  
 Sample : M8380-P(2) Inst : INST. M  
 Misc : NBH14-0302 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.40    | 3278270m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 5098002m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 13050134m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 29376293    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 8064394     | 336.26724 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 88.52%  |
| 11) s C16(152)                     | 20.49    | 9377575     | 379.50061 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 99.51%  |
| 27) s C13(34) #2                   | 16.48    | 40910129m   | 412.43634 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 108.57% |
| 34) s C16(152) #2                  | 23.63    | 45546452    | 278.56929 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 73.04%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 1945436m    | 103.69472 | ng      |
| 3) C13(18)                         | 12.13    | 3670647     | 175.74763 | ng      |
| 5) C13(28)                         | 14.20    | E 31938930  | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | E 13501951  | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 7828116     | 203.41699 | ng      |
| 8) C14(66)                         | 18.62    | 10061563m   | 235.58313 | ng      |
| 9) C15(101)                        | 19.72    | e 15423539  | 391.27141 | ng      |
| 12) C15(118)                       | 22.40    | E 32829540  | BelowCal  | ng      |
| 13) C16(153)                       | 23.44    | E 29306357  | BelowCal  | ng      |
| 14) C15(105)                       | 23.47    | 6576705m    | 159.33831 | ng      |
| 15) C16(138)                       | 24.54    | e 24940601  | 763.84521 | ng      |
| 16) C17(187)                       | 25.30    | 2343810m    | 57.27033  | ng      |
| 17) C16(128)                       | 25.63    | 5460300m    | 124.64901 | ng      |
| 18) C17(180)                       | 27.16    | 4002940m    | 84.00295  | ng      |
| 19) C17(170)                       | 27.97    | 3136128m    | 57.08023  | ng      |
| 20) C18(195)                       | 29.04    | 531661      | 8.94237   | ng      |
| 21) C19(206)                       | 30.30    | 471463m     | 8.26832   | ng      |
| 22) C110(209)                      | 30.90    | 146982m     | 2.13880   | ng      |
| 25) C12(8) #2                      | 13.10    | 9141841m    | 110.71796 | ng      |
| 26) C13(18) #2                     | 14.99    | 17928516m   | 218.68266 | ng      |
| 28) C13(28) #2                     | 17.76    | e 99013141  | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 70712483  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 38511701    | 230.05892 | ng      |
| 31) C14(66) #2                     | 22.36    | 46517802m   | 247.33151 | ng      |
| 32) C15(101) #2                    | 23.23    | E 102606112 | 661.42250 | ng      |
| 35) C15(118) #2                    | 26.34    | E 111325027 | 666.62225 | ng      |
| 36) C16(153) #2                    | 26.94    | e 80293714  | 407.41678 | ng      |
| 37) C15(105) #2                    | 27.21    | 49158009    | 175.20603 | ng      |
| 38) C16(138) #2                    | 27.78    | e 80343833  | 369.04987 | ng      |
| 39) C17(187) #2                    | 28.14    | 11799582m   | 57.12030  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7460.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0421\M7460.D\ECD2B.CH  
 Acq On : 11-5-2014 01:16:01 AM Operator: RR  
 Sample : M8380-P(2) Inst : INST. M  
 Misc : NBH14-0302 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 30672972  | 105.61992 | ng    |
| 41) | C17(180) #2  | 29.59 | 20763703m | 79.74446  | ng    |
| 42) | C17(170) #2  | 30.22 | 16687149  | 58.70967  | ng    |
| 43) | C18(195) #2  | 31.09 | 2370542m  | 8.14469   | ng    |
| 44) | C19(206) #2  | 32.18 | 2056947m  | 7.92722   | ng    |
| 45) | C110(209) #2 | 32.62 | 641496m   | 2.16782   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7461.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0421\M7461.D\ECD2B.CH  
 Acq On : 11-5-2014 02:00:31 AM Operator: RR  
 Sample : M8381-P(2) Inst : INST. M  
 Misc : NBH14-0306 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:15 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response    | Conc Units    |
|-----------------------------|----------|-------------|---------------|
| Internal Standards          |          |             |               |
| 1) I C15(96)                | 17.40    | 3056162m    | 95.00000 ng   |
| 10) I C16(161)              | 23.20    | 6753049m    | 95.00000 ng   |
| 24) I C15(96) #2            | 20.52    | 10687678m   | 95.00000 ng   |
| 33) I C16(161) #2           | 26.82    | 21667901m   | 95.00000 ng   |
| System Monitoring Compounds |          |             |               |
| 4) s C13(34)                | 13.41    | 7668740     | 347.20289 ng  |
| Spiked Amount               | 379.8670 | Recovery    | = 91.40%      |
| 11) s C16(152)              | 20.49    | 8232317     | 231.67688 ng  |
| Spiked Amount               | 381.3865 | Recovery    | = 60.75%      |
| 27) s C13(34) #2            | 16.48    | 33509336m   | 412.54037 ng  |
| Spiked Amount               | 379.8670 | Recovery    | = 108.60%     |
| 34) s C16(152) #2           | 23.63    | 35361145    | 291.32664 ng  |
| Spiked Amount               | 381.3865 | Recovery    | = 76.39%      |
| Target Compounds            |          |             |               |
| 2) C12(8)                   | 10.21    | e 4344392   | 345.46686 ng  |
| 3) C13(18)                  | 12.13    | e 6853520   | BelowCal ng   |
| 5) C13(28)                  | 14.20    | E 87888897  | BelowCal ng   |
| 6) C14(52)                  | 15.84    | E 28583065  | BelowCal ng   |
| 7) C14(44)                  | 16.71    | e 14297787  | BelowCal ng   |
| 8) C14(66)                  | 18.62    | E 50170075  | BelowCal ng   |
| 9) C15(101)                 | 19.73    | E 36798836  | BelowCal ng   |
| 12) C15(118)                | 22.41    | E 81395303  | BelowCal ng   |
| 13) C16(153)                | 23.44    | E 25715516m | 862.56093 ng  |
| 14) C15(105)                | 23.48    | e 16953652m | 409.46957 ng  |
| 15) C16(138)                | 24.55    | E 52826087  | BelowCal ng   |
| 16) C17(187)                | 25.31    | 5743031m    | 110.31719 ng  |
| 17) C16(128)                | 25.64    | 11908400    | 216.71473 ng  |
| 18) C17(180)                | 27.17    | 9620342m    | 156.79796 ng  |
| 19) C17(170)                | 27.97    | 7597540m    | 107.05438 ng  |
| 20) C18(195)                | 29.05    | 1275154     | 17.46705 ng   |
| 21) C19(206)                | 30.31    | 1467486m    | 21.26544 ng   |
| 22) C110(209)               | 30.91    | 446796m     | 6.88737 ng    |
| 25) C12(8) #2               | 13.11    | 18048728m   | 347.28912 ng  |
| 26) C13(18) #2              | 14.99    | e 29875823  | BelowCal ng   |
| 28) C13(28) #2              | 17.77    | E 227387762 | BelowCal ng   |
| 29) C14(52) #2              | 19.15    | E 125561774 | BelowCal ng   |
| 30) C14(44) #2              | 19.96    | e 61927420  | BelowCal ng   |
| 31) C14(66) #2              | 22.36    | E 177556474 | BelowCal ng   |
| 32) C15(101) #2             | 23.23    | E 204986374 | 1280.81011 ng |
| 35) C15(118) #2             | 26.34    | E 244112525 | 2936.13540 ng |
| 36) C16(153) #2             | 26.94    | E 177614521 | 1147.63802 ng |
| 37) C15(105) #2             | 27.21    | e 97556157  | 438.21813 ng  |
| 38) C16(138) #2             | 27.78    | E 153322193 | 796.88121 ng  |
| 39) C17(187) #2             | 28.14    | 24562056m   | 161.69430 ng  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7461.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0421\M7461.D\ECD2B.CH  
 Acq On : 11-5-2014 02:00:31 AM Operator: RR  
 Sample : M8381-P(2) Inst : INST. M  
 Misc : NBH14-0306 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:15 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 58362636  | 262.80363 | ng    |
| 41) | C17(180) #2  | 29.59 | 45880600m | 229.73615 | ng    |
| 42) | C17(170) #2  | 30.22 | 31763350m | 148.87659 | ng    |
| 43) | C18(195) #2  | 31.09 | 5087263m  | 26.05114  | ng    |
| 44) | C19(206) #2  | 32.19 | 4260484m  | 24.18968  | ng    |
| 45) | C110(209) #2 | 32.63 | 1452178m  | 9.70557   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7462.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0421\M7462.D\ECD2B.CH  
 Acq On : 11-5-2014 02:44:54 AM Operator: RR  
 Sample : M8382-P(2) Inst : INST. M  
 Misc : NBH14-0310 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units  |
|------------------------------------|----------|-------------|-----------|--------|
| <b>Internal Standards</b>          |          |             |           |        |
| 1) I C15(96)                       | 17.39    | 3439824m    | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 5221302m    | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 12234942m   | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 27466020    | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |             |           |        |
| 4) s C13(34)                       | 13.40    | 7810561     | 297.56149 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 78.33% |
| 11) s C16(152)                     | 20.49    | 9442010     | 371.39130 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 97.38% |
| 27) s C13(34) #2                   | 16.48    | 35357361m   | 363.12296 | ng     |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 95.59% |
| 34) s C16(152) #2                  | 23.62    | 40362003    | 265.74492 | ng     |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 69.68% |
| <b>Target Compounds</b>            |          |             |           |        |
| 2) C12(8)                          | 10.21    | 1572746m    | 76.64321  | ng     |
| 3) C13(18)                         | 12.13    | 2907189m    | 123.29212 | ng     |
| 5) C13(28)                         | 14.20    | E 29972412  | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | e 11014651  | BelowCal  | ng     |
| 7) C14(44)                         | 16.70    | 5617787     | 128.92562 | ng     |
| 8) C14(66)                         | 18.61    | 9970521m    | 218.88321 | ng     |
| 9) C15(101)                        | 19.72    | e 14537873  | 336.25964 | ng     |
| 12) C15(118)                       | 22.40    | E 31182594  | BelowCal  | ng     |
| 13) C16(153)                       | 23.44    | e 14447086m | 488.88318 | ng     |
| 14) C15(105)                       | 23.47    | 5745799m    | 132.11917 | ng     |
| 15) C16(138)                       | 24.54    | e 20846267  | 561.16337 | ng     |
| 16) C17(187)                       | 25.30    | 2359060m    | 56.21667  | ng     |
| 17) C16(128)                       | 25.63    | 4774395m    | 105.18301 | ng     |
| 18) C17(180)                       | 27.16    | 3856286m    | 78.79815  | ng     |
| 19) C17(170)                       | 27.97    | 2864152m    | 50.64054  | ng     |
| 20) C18(195)                       | 29.04    | 567507      | 9.38557   | ng     |
| 21) C19(206)                       | 30.31    | 474288m     | 8.09779   | ng     |
| 22) C110(209)                      | 30.91    | 203761m     | 3.43400   | ng     |
| 25) C12(8) #2                      | 13.11    | 6553339m    | 81.80212  | ng     |
| 26) C13(18) #2                     | 14.99    | 12512736m   | 150.94099 | ng     |
| 28) C13(28) #2                     | 17.76    | e 82955434  | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | e 50959237  | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.96    | 24723741m   | 146.36998 | ng     |
| 31) C14(66) #2                     | 22.35    | 41952927m   | 236.06479 | ng     |
| 32) C15(101) #2                    | 23.23    | e 81929493  | 582.41604 | ng     |
| 35) C15(118) #2                    | 26.34    | e 94825535  | 601.39597 | ng     |
| 36) C16(153) #2                    | 26.94    | e 68757196  | 374.02610 | ng     |
| 37) C15(105) #2                    | 27.20    | 38209549    | 146.66395 | ng     |
| 38) C16(138) #2                    | 27.78    | 61649755    | 311.14185 | ng     |
| 39) C17(187) #2                    | 28.14    | 10471074    | 54.12069  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7462.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0421\M7462.D\ECD2B.CH  
 Acq On : 11-5-2014 02:44:54 AM Operator: RR  
 Sample : M8382-P(2) Inst : INST. M  
 Misc : NBH14-0310 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:46:21 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 24086302  | 88.84797 | ng    |
| 41) | C17(180) #2  | 29.59 | 18759001m | 77.07144 | ng    |
| 42) | C17(170) #2  | 30.22 | 13423745m | 50.46189 | ng    |
| 43) | C18(195) #2  | 31.08 | 2116486m  | 7.71872  | ng    |
| 44) | C19(206) #2  | 32.18 | 1951910m  | 8.06238  | ng    |
| 45) | C110(209) #2 | 32.62 | 809279m   | 3.44259  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7463.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0421\M7463.D\ECD2B.CH  
 Acq On : 11-5-2014 03:29:24 AM Operator: RR  
 Sample : M8392-P(2) Inst : INST. M  
 Misc : NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:51:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:51:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3308988   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 6603478   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 16023186m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 37707599  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7082085   | 273.30838 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 71.95% |
| 11) s C16(152)                     | 20.48    | 9849908   | 293.34086 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 76.91% |
| 27) s C13(34) #2                   | 16.48    | 38511655m | 280.55499 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 73.86% |
| 34) s C16(152) #2                  | 23.62    | 53874486  | 259.22026 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 67.97% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 0.00     | 0d        | N.D.      | ng     |
| 3) C13(18)                         | 0.00     | 0d        | N.D.      | ng     |
| 5) C13(28)                         | 14.20    | 127470m   | 0.44306   | ng     |
| 6) C14(52)                         | 15.83    | 159142m   | BelowCal  | ng     |
| 7) C14(44)                         | 16.69    | 50622m    | BelowCal  | ng     |
| 8) C14(66)                         | 18.61    | 155957m   | 0.39213   | ng     |
| 9) C15(101)                        | 19.71    | 165294m   | 1.50784   | ng     |
| 12) C15(118)                       | 22.39    | 222401m   | 1.69975   | ng     |
| 13) C16(153)                       | 23.43    | 149994m   | 2.12028   | ng     |
| 14) C15(105)                       | 23.45    | 81290m    | BelowCal  | ng     |
| 15) C16(138)                       | 24.53    | 248290m   | 1.83293   | ng     |
| 16) C17(187)                       | 25.29    | 32174m    | BelowCal  | ng     |
| 17) C16(128)                       | 25.64    | 38019m    | BelowCal  | ng     |
| 18) C17(180)                       | 27.15    | 36568     | BelowCal  | ng     |
| 19) C17(170)                       | 27.96    | 31291     | BelowCal  | ng     |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng     |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng     |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng     |
| 25) C12(8) #2                      | 0.00     | 0d        | N.D.      | ng     |
| 26) C13(18) #2                     | 0.00     | 0d        | N.D.      | ng     |
| 28) C13(28) #2                     | 17.76    | 561919m   | 0.43448   | ng     |
| 29) C14(52) #2                     | 19.15    | 608920m   | 1.86566   | ng     |
| 30) C14(44) #2                     | 19.96    | 276810m   | BelowCal  | ng     |
| 31) C14(66) #2                     | 22.35    | 634808m   | 0.42467   | ng     |
| 32) C15(101) #2                    | 23.23    | 782635m   | 1.35349   | ng     |
| 35) C15(118) #2                    | 26.33    | 1199051m  | 1.59230   | ng     |
| 36) C16(153) #2                    | 26.93    | 1323548m  | 1.51982   | ng     |
| 37) C15(105) #2                    | 27.20    | 386301m   | BelowCal  | ng     |
| 38) C16(138) #2                    | 27.78    | 758367m   | 2.26218   | ng     |
| 39) C17(187) #2                    | 28.14    | 177562m   | BelowCal  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7463.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0421\M7463.D\ECD2B.CH  
 Acq On : 11-5-2014 03:29:24 AM Operator: RR  
 Sample : M8392-P(2) Inst : INST. M  
 Misc : NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:51:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:51:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 318294m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.59 | 189815m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.22 | 108244m  | BelowCal | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7465.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0421\M7465.D\ECD2B.CH  
 Acq On : 11-5-2014 04:58:24 AM Operator: RR  
 Sample : M8392MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:52:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 3574207   | 100.00000 | ng     |
| 10) I C16(161)              | 23.22    | 7201616   | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.51    | 16039992m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.79    | 37822212  | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 7632332m  | 286.77335 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 71.69% |
| 11) s C16(152)              | 20.48    | 10445747  | 298.67157 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 74.37% |
| 27) s C13(34) #2            | 16.47    | 38803587m | 297.87982 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 74.47% |
| 34) s C16(152) #2           | 23.62    | 67081255  | 329.60981 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 82.07% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 885684    | 40.06998  | ng     |
| 3) C13(18)                  | 12.13    | 1122045   | 40.64676  | ng     |
| 5) C13(28)                  | 14.21    | 2184545   | 45.39473  | ng     |
| 6) C14(52)                  | 15.84    | 1564136   | 42.36176  | ng     |
| 7) C14(44)                  | 16.70    | 2037858m  | 41.78231  | ng     |
| 8) C14(66)                  | 18.60    | 2341926   | 42.52099  | ng     |
| 9) C15(101)                 | 19.74    | 2208815m  | 40.50667  | ng     |
| 12) C15(118)                | 22.39    | 2570945   | 49.49761  | ng     |
| 13) C16(153)                | 23.44 TW | 2276674m  | 45.64596  | ng     |
| 14) C15(105)                | 23.45 TW | 2696400m  | 41.90162  | ng     |
| 15) C16(138)                | 24.54    | 3049013   | 47.80305  | ng     |
| 16) C17(187)                | 25.29    | 2499652   | 44.62899  | ng     |
| 17) C16(128)                | 25.62    | 2142459m  | 34.17759  | ng     |
| 18) C17(180)                | 27.16    | 2947003   | 44.64846  | ng     |
| 19) C17(170)                | 27.96    | 3247076   | 43.40546  | ng     |
| 20) C18(195)                | 29.04    | 3102697   | 44.25486  | ng     |
| 21) C19(206)                | 30.31    | 2840782m  | 41.94535  | ng     |
| 22) C110(209)               | 30.90    | 2412941m  | 43.72856  | ng     |
| 25) C12(8) #2               | 13.10    | 4579916m  | 42.97888  | ng     |
| 26) C13(18) #2              | 14.99    | 5155446m  | 41.38934  | ng     |
| 28) C13(28) #2              | 17.76    | 10519678m | 46.05199  | ng     |
| 29) C14(52) #2              | 19.15    | 6256490m  | 46.03502  | ng     |
| 30) C14(44) #2              | 19.96    | 12356141m | 53.39941  | ng     |
| 31) C14(66) #2              | 22.36    | 11980124m | 46.37736  | ng     |
| 32) C15(101) #2             | 23.24    | 6912784m  | 47.45734  | ng     |
| 35) C15(118) #2             | 26.35    | 11399238m | 47.82382  | ng     |
| 36) C16(153) #2             | 26.94    | 11471308  | 45.61241  | ng     |
| 37) C15(105) #2             | 27.20    | 15649867m | 46.05318  | ng     |
| 38) C16(138) #2             | 27.78    | 12126701m | 52.59547  | ng     |
| 39) C17(187) #2             | 28.14    | 11978835  | 46.96644  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7465.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0421\M7465.D\ECD2B.CH  
 Acq On : 11-5-2014 04:58:24 AM Operator: RR  
 Sample : M8392MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:52:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 16722663  | 46.74349 | ng    |
| 41) | C17(180) #2  | 29.59 | 15022017  | 46.94641 | ng    |
| 42) | C17(170) #2  | 30.21 | 16080609m | 46.12031 | ng    |
| 43) | C18(195) #2  | 31.08 | 14895360m | 46.58714 | ng    |
| 44) | C19(206) #2  | 32.18 | 13344535m | 46.29176 | ng    |
| 45) | C110(209) #2 | 32.62 | 10933215m | 48.72398 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7466.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0421\M7466.D\ECD2B.CH  
 Acq On : 11-5-2014 05:42:50 AM Operator: RR  
 Sample : M8392MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0121 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:52:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 3485171   | 100.00000 | ng     |
| 10) I C16(161)              | 23.21    | 7104913   | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.51    | 16367493m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.79    | 38590284  | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 8568094   | 353.61955 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 88.40% |
| 11) s C16(152)              | 20.48    | 12127140  | 363.70358 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 90.56% |
| 27) s C13(34) #2            | 16.48    | 46098569m | 367.94797 | ng     |
| Spiked Amount               | 400.0000 | Recovery  | =         | 91.99% |
| 34) s C16(152) #2           | 23.62    | 82649957  | 387.16624 | ng     |
| Spiked Amount               | 401.6000 | Recovery  | =         | 96.41% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 949552    | 44.67707  | ng     |
| 3) C13(18)                  | 12.13    | 1211378   | 45.79661  | ng     |
| 5) C13(28)                  | 14.21    | 2409858   | 51.95237  | ng     |
| 6) C14(52)                  | 15.84    | 1731446   | 49.24791  | ng     |
| 7) C14(44)                  | 16.70    | 2311495m  | 49.43431  | ng     |
| 8) C14(66)                  | 18.60    | 2618697   | 49.43440  | ng     |
| 9) C15(101)                 | 19.74    | 2571868m  | 48.96606  | ng     |
| 12) C15(118)                | 22.39    | 2937856   | 58.10203  | ng     |
| 13) C16(153)                | 23.44 TW | 2463719m  | 50.27625  | ng     |
| 14) C15(105)                | 23.45 TW | 3329622m  | 53.60310  | ng     |
| 15) C16(138)                | 24.54    | 3566545   | 57.34599  | ng     |
| 16) C17(187)                | 25.29    | 2982149   | 54.70122  | ng     |
| 17) C16(128)                | 25.62    | 3363759m  | 55.38561  | ng     |
| 18) C17(180)                | 27.16    | 3575960   | 55.51920  | ng     |
| 19) C17(170)                | 27.96    | 3929228   | 53.76087  | ng     |
| 20) C18(195)                | 29.04    | 3783841m  | 55.21067  | ng     |
| 21) C19(206)                | 30.31    | 3501687m  | 52.88345  | ng     |
| 22) C110(209)               | 30.90    | 2950340m  | 54.77527  | ng     |
| 25) C12(8) #2               | 13.10    | 5105016m  | 47.37393  | ng     |
| 26) C13(18) #2              | 14.99    | 6454635m  | 52.51368  | ng     |
| 28) C13(28) #2              | 17.76    | 11671008m | 50.39417  | ng     |
| 29) C14(52) #2              | 19.14    | 7481072m  | 54.80384  | ng     |
| 30) C14(44) #2              | 19.96    | 14709133m | 63.03690  | ng     |
| 31) C14(66) #2              | 22.36    | 14351127m | 55.07904  | ng     |
| 32) C15(101) #2             | 23.24    | 7348860m  | 49.57234  | ng     |
| 35) C15(118) #2             | 26.35    | 14273481m | 59.63127  | ng     |
| 36) C16(153) #2             | 26.93    | 14183669  | 56.10196  | ng     |
| 37) C15(105) #2             | 27.20    | 19700805m | 57.09503  | ng     |
| 38) C16(138) #2             | 27.78    | 14818628m | 62.86173  | ng     |
| 39) C17(187) #2             | 28.14    | 14921080  | 57.80661  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7466.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0421\M7466.D\ECD2B.CH  
 Acq On : 11-5-2014 05:42:50 AM Operator: RR  
 Sample : M8392MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0121 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:52:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:52:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 21074598  | 58.04725 | ng    |
| 41) | C17(180) #2  | 29.59 | 19129878  | 58.82324 | ng    |
| 42) | C17(170) #2  | 30.21 | 20497452m | 57.76748 | ng    |
| 43) | C18(195) #2  | 31.08 | 19120231m | 58.68677 | ng    |
| 44) | C19(206) #2  | 32.18 | 16849597m | 57.33969 | ng    |
| 45) | C110(209) #2 | 32.62 | 13694106m | 59.98286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0421\M7467.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0421\M7467.D\ECD2B.CH  
 Acq On : 11-5-2014 06:27:24 AM Operator: RR  
 Sample : M8393-P(2) Inst : INST. M  
 Misc : NBH14-0125 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units  |
|------------------------------------|----------|------------|-----------|--------|
| <b>Internal Standards</b>          |          |            |           |        |
| 1) I C15(96)                       | 17.39    | 3060362m   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 5292647m   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 13893912m  | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 32098463m  | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |            |           |        |
| 4) s C13(34)                       | 13.40    | 6886330    | 293.64141 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 77.30% |
| 11) s C16(152)                     | 20.49    | 8527574    | 321.90648 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 84.40% |
| 27) s C13(34) #2                   | 16.48    | 36758287m  | 319.64326 | ng     |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 84.15% |
| 34) s C16(152) #2                  | 23.63    | 44456501   | 252.17504 | ng     |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 66.12% |
| <b>Target Compounds</b>            |          |            |           |        |
| 2) C12(8)                          | 10.21    | 1348917    | 73.49039  | ng     |
| 3) C13(18)                         | 12.13    | 2123055    | 97.31097  | ng     |
| 5) C13(28)                         | 14.20    | E 25923195 | BelowCal  | ng     |
| 6) C14(52)                         | 15.84    | e 7742755  | 364.34130 | ng     |
| 7) C14(44)                         | 16.70    | 3688575m   | 91.23319  | ng     |
| 8) C14(66)                         | 18.61    | 6352860m   | 146.04747 | ng     |
| 9) C15(101)                        | 19.72    | 10647186   | 261.21628 | ng     |
| 12) C15(118)                       | 22.40    | E 22181871 | BelowCal  | ng     |
| 13) C16(153)                       | 23.43    | 9532799m   | 283.60109 | ng     |
| 14) C15(105)                       | 23.46    | 4070059m   | 87.94258  | ng     |
| 15) C16(138)                       | 24.53    | 13087923m  | 308.38828 | ng     |
| 16) C17(187)                       | 25.30    | 2006244    | 46.59951  | ng     |
| 17) C16(128)                       | 25.63    | 3000093m   | 63.49461  | ng     |
| 18) C17(180)                       | 27.16    | 2505064m   | 49.44513  | ng     |
| 19) C17(170)                       | 27.96    | 1921231m   | 32.80876  | ng     |
| 20) C18(195)                       | 29.04    | 383921m    | 5.74870   | ng     |
| 21) C19(206)                       | 30.30    | 311007m    | 4.77103   | ng     |
| 22) C110(209)                      | 30.90    | 126081m    | 1.50275   | ng     |
| 25) C12(8) #2                      | 13.11    | 7032073m   | 76.80010  | ng     |
| 26) C13(18) #2                     | 14.99    | 10990690m  | 111.28372 | ng     |
| 28) C13(28) #2                     | 17.76    | e 88968626 | BelowCal  | ng     |
| 29) C14(52) #2                     | 19.15    | e 44260301 | BelowCal  | ng     |
| 30) C14(44) #2                     | 19.95    | 18545823m  | 92.03099  | ng     |
| 31) C14(66) #2                     | 22.36    | 36082257m  | 170.87761 | ng     |
| 32) C15(101) #2                    | 23.23    | 38607734m  | 276.98183 | ng     |
| 35) C15(118) #2                    | 26.34    | e 77156909 | 406.39391 | ng     |
| 36) C16(153) #2                    | 26.94    | 58553963   | 274.15981 | ng     |
| 37) C15(105) #2                    | 27.20    | 26951445   | 89.41210  | ng     |
| 38) C16(138) #2                    | 27.78    | 41918290   | 191.65871 | ng     |
| 39) C17(187) #2                    | 28.14    | 9308767    | 40.67118  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7467.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0421\M7467.D\ECD2B.CH  
 Acq On : 11-5-2014 06:27:24 AM Operator: RR  
 Sample : M8393-P(2) Inst : INST. M  
 Misc : NBH14-0125 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:46:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 18293128m | 57.59246 | ng    |
| 41) | C17(180) #2  | 29.59 | 13111045m | 45.89641 | ng    |
| 42) | C17(170) #2  | 30.22 | 11017075m | 35.19932 | ng    |
| 43) | C18(195) #2  | 31.08 | 1634244m  | 4.65238  | ng    |
| 44) | C19(206) #2  | 32.18 | 1393362m  | 4.48271  | ng    |
| 45) | C110(209) #2 | 32.62 | 553515m   | 1.39976  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7468.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0421\M7468.D\ECD2B.CH  
 Acq On : 11-5-2014 07:11:50 AM Operator: RR  
 Sample : M8394-P(2) Inst : INST. M  
 Misc : NBH14-0129 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response   | Conc      | Units   |
|------------------------------------|----------|------------|-----------|---------|
| <b>Internal Standards</b>          |          |            |           |         |
| 1) I C15(96)                       | 17.39    | 3473344    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 6195680m   | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.51    | 13846314m  | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 31921206m  | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |            |           |         |
| 4) s C13(34)                       | 13.40    | 8587798    | 339.00807 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 89.24%  |
| 11) s C16(152)                     | 20.48    | 10528725   | 343.64067 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 90.10%  |
| 27) s C13(34) #2                   | 16.48    | 41963224m  | 390.61574 | ng      |
| Spiked Amount                      | 379.8670 | Recovery   | =         | 102.83% |
| 34) s C16(152) #2                  | 23.62    | 50364371   | 282.86314 | ng      |
| Spiked Amount                      | 381.3865 | Recovery   | =         | 74.17%  |
| <b>Target Compounds</b>            |          |            |           |         |
| 2) C12(8)                          | 10.21    | 1248021    | 58.19885  | ng      |
| 3) C13(18)                         | 12.13    | 1984924    | 77.51467  | ng      |
| 5) C13(28)                         | 14.20    | E 19276776 | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | e 6516849  | 230.92264 | ng      |
| 7) C14(44)                         | 16.70    | 3635610    | 77.91690  | ng      |
| 8) C14(66)                         | 18.61    | 6098891m   | 120.41521 | ng      |
| 9) C15(101)                        | 19.72    | 8680793    | 176.09692 | ng      |
| 12) C15(118)                       | 22.40    | e 17884713 | 581.51950 | ng      |
| 13) C16(153)                       | 23.43    | 7826043m   | 189.18468 | ng      |
| 14) C15(105)                       | 23.46    | 4806553m   | 88.80974  | ng      |
| 15) C16(138)                       | 24.53    | 11137236m  | 214.71336 | ng      |
| 16) C17(187)                       | 25.29    | 1246924m   | 23.40578  | ng      |
| 17) C16(128)                       | 25.63    | 2749259m   | 49.18388  | ng      |
| 18) C17(180)                       | 27.16    | 2062415    | 34.07644  | ng      |
| 19) C17(170)                       | 27.97    | 1481435m   | 20.98715  | ng      |
| 20) C18(195)                       | 29.04    | 270300m    | 2.84425   | ng      |
| 21) C19(206)                       | 30.30    | 231279m    | 2.55091   | ng      |
| 22) C110(209)                      | 30.90    | 92457m     | 0.37342   | ng      |
| 25) C12(8) #2                      | 13.11    | 5602924m   | 59.95178  | ng      |
| 26) C13(18) #2                     | 14.99    | 8991707m   | 88.52597  | ng      |
| 28) C13(28) #2                     | 17.76    | e 57385396 | 367.77175 | ng      |
| 29) C14(52) #2                     | 19.15    | e 33648985 | 426.91390 | ng      |
| 30) C14(44) #2                     | 19.96    | 17096281m  | 84.50395  | ng      |
| 31) C14(66) #2                     | 22.36    | 25048617m  | 114.27590 | ng      |
| 32) C15(101) #2                    | 23.23    | 21582295m  | 163.14947 | ng      |
| 35) C15(118) #2                    | 26.33    | e 61997452 | 323.98366 | ng      |
| 36) C16(153) #2                    | 26.94    | 41230081   | 194.50054 | ng      |
| 37) C15(105) #2                    | 27.20    | 26643978   | 88.88684  | ng      |
| 38) C16(138) #2                    | 27.78    | 36995541   | 171.72978 | ng      |
| 39) C17(187) #2                    | 28.14    | 5747631m   | 24.33736  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7468.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0421\M7468.D\ECD2B.CH  
 Acq On : 11-5-2014 07:11:50 AM Operator: RR  
 Sample : M8394-P(2) Inst : INST. M  
 Misc : NBH14-0129 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 14498628m | 45.65579 | ng    |
| 41) | C17(180) #2  | 29.59 | 10079980m | 35.20787 | ng    |
| 42) | C17(170) #2  | 30.22 | 7723560m  | 24.47561 | ng    |
| 43) | C18(195) #2  | 31.08 | 1042031m  | 2.50494  | ng    |
| 44) | C19(206) #2  | 32.18 | 888105m   | 2.46086  | ng    |
| 45) | C110(209) #2 | 32.62 | 375467m   | 0.48260  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

M7468.D MM0417C.M Fri Nov 21 11:00:34 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7469.D\ECD1A.CH Vial: 29  
 Signal #2 : I:\M\DATA\SM0421\M7469.D\ECD2B.CH  
 Acq On : 11-5-2014 07:56:22 AM Operator: RR  
 Sample : M8406-P(2) Inst : INST. M  
 Misc : NBH14-0177 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.39    | 3345950m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 6287578m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.51    | 13417130m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 31195851    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 8382033     | 346.26815 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 91.16%  |
| 11) s C16(152)                     | 20.48    | 9894976     | 312.84493 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 82.03%  |
| 27) s C13(34) #2                   | 16.48    | 43218681m   | 431.66791 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 113.64% |
| 34) s C16(152) #2                  | 23.62    | 47570385    | 274.53693 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 71.98%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 2569842     | 141.25871 | ng      |
| 3) C13(18)                         | 12.13    | 3020377     | 133.65436 | ng      |
| 5) C13(28)                         | 14.20    | E 31395907  | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | e 9615373   | 486.44208 | ng      |
| 7) C14(44)                         | 16.70    | 4887653m    | 113.40968 | ng      |
| 8) C14(66)                         | 18.61    | 7616145m    | 162.78539 | ng      |
| 9) C15(101)                        | 19.72    | 10918606    | 241.37515 | ng      |
| 12) C15(118)                       | 22.40    | E 26325145  | BelowCal  | ng      |
| 13) C16(153)                       | 23.43    | e 11797798m | 297.69242 | ng      |
| 14) C15(105)                       | 23.45    | 8855818m    | 177.20687 | ng      |
| 15) C16(138)                       | 24.53    | e 15454416m | 306.22342 | ng      |
| 16) C17(187)                       | 25.30    | 2268816     | 44.20256  | ng      |
| 17) C16(128)                       | 25.63    | 3727860m    | 66.55225  | ng      |
| 18) C17(180)                       | 27.16    | 3088550m    | 51.41298  | ng      |
| 19) C17(170)                       | 27.97    | 2296087m    | 33.01721  | ng      |
| 20) C18(195)                       | 29.04    | 471314      | 5.99207   | ng      |
| 21) C19(206)                       | 30.30    | 563973m     | 7.97938   | ng      |
| 22) C110(209)                      | 30.90    | 161370m     | 1.73672   | ng      |
| 25) C12(8) #2                      | 13.10    | 12387367m   | 152.78519 | ng      |
| 26) C13(18) #2                     | 14.99    | 14904844m   | 166.97266 | ng      |
| 28) C13(28) #2                     | 17.76    | e 102685149 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | e 51115443  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 24669514m   | 131.43596 | ng      |
| 31) C14(66) #2                     | 22.36    | 38430737m   | 191.14485 | ng      |
| 32) C15(101) #2                    | 23.23    | 32055953m   | 241.92991 | ng      |
| 35) C15(118) #2                    | 26.34    | e 99624756  | 552.17587 | ng      |
| 36) C16(153) #2                    | 26.94    | e 69333001  | 332.95632 | ng      |
| 37) C15(105) #2                    | 27.20    | 39049263    | 132.38126 | ng      |
| 38) C16(138) #2                    | 27.78    | 55508467    | 253.48938 | ng      |
| 39) C17(187) #2                    | 28.14    | 10787472    | 48.90716  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7469.D\ECD1A.CH Vial: 29  
 Signal #2 : I:\M\DATA\SM0421\M7469.D\ECD2B.CH  
 Acq On : 11-5-2014 07:56:22 AM Operator: RR  
 Sample : M8406-P(2) Inst : INST. M  
 Misc : NBH14-0177 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 09:47:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 09:47:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 22117793m | 71.82571 | ng    |
| 41) | C17(180) #2  | 29.59 | 17374448m | 62.84607 | ng    |
| 42) | C17(170) #2  | 30.22 | 11305045m | 37.21893 | ng    |
| 43) | C18(195) #2  | 31.08 | 2141728m  | 6.73393  | ng    |
| 44) | C19(206) #2  | 32.18 | 1896265   | 6.73294  | ng    |
| 45) | C110(209) #2 | 32.62 | 557730m   | 1.50582  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7645.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0425\M7645.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:57 am Operator: RR  
 Sample : M8159-P-D(4) Inst : INST. M  
 Misc : NBH14-0029 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 2313055   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 5474608m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15575129m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37002683m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 961922m   | 28.23046 | ng    |
| 6) C14(52)                         | 15.84   | 985232    | 38.96243 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.72   | 1124341m  | 29.74001 | ng    |
| 12) C15(118)                       | 22.40   | 1319701m  | 30.49425 | ng    |
| 13) C16(153)                       | 23.43   | 1046859m  | 25.61148 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.54   | 1465877m  | 27.65422 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 7424309m  | 30.98401 | ng    |
| 29) C14(52) #2                     | 19.15   | 7060950m  | 51.59777 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 5289288m  | 34.82525 | ng    |
| 35) C15(118) #2                    | 26.34   | 8880431m  | 35.40431 | ng    |
| 36) C16(153) #2                    | 26.94   | 8109381   | 30.25194 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 6190698   | 25.93952 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7645.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0425\M7645.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:57 am Operator: RR  
 Sample : M8159-P-D(4) Inst : INST. M  
 Misc : NBH14-0029 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0425\M7647.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0425\M7647.D\ECD2B.CH  
 Acq On : 11-20-2014 01:26:14 PM Operator: RR  
 Sample : M8161-P-D(4) Inst : INST. M  
 Misc : NBH14-0037 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.40   | 2168056   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 5402030   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14491668m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 34633190m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.20   | 318471m   | 20.56187  | ng    |
| 3) C13(18)                         | 12.13   | 839072    | 49.30823  | ng    |
| 5) C13(28)                         | 14.20   | 2595230m  | 90.22464  | ng    |
| 6) C14(52)                         | 15.84   | 2695615   | 137.20682 | ng    |
| 7) C14(44)                         | 16.70   | 1612734   | 53.33303  | ng    |
| 8) C14(66)                         | 18.63   | 1414790m  | 40.21371  | ng    |
| 9) C15(101)                        | 19.72   | 2238745   | 66.62550  | ng    |
| 12) C15(118)                       | 22.39   | 3208099m  | 81.84819  | ng    |
| 13) C16(153)                       | 23.43   | 2402687m  | 61.96418  | ng    |
| 14) C15(105)                       | 23.45   | 1458192m  | 27.72813  | ng    |
| 15) C16(138)                       | 24.54   | 3711277m  | 76.08340  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 25.63   | 1044975m  | 20.75536  | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 2701508m  | 25.41086  | ng    |
| 26) C13(18) #2                     | 14.99   | 5702963m  | 49.76764  | ng    |
| 28) C13(28) #2                     | 17.77   | 18397059m | 89.30950  | ng    |
| 29) C14(52) #2                     | 19.15   | 19765313m | 180.68227 | ng    |
| 30) C14(44) #2                     | 19.96   | 11433397m | 52.05036  | ng    |
| 31) C14(66) #2                     | 22.35   | 8620030m  | 34.48591  | ng    |
| 32) C15(101) #2                    | 23.23   | 9374796m  | 68.87221  | ng    |
| 35) C15(118) #2                    | 26.34   | 19692167m | 89.38835  | ng    |
| 36) C16(153) #2                    | 26.94   | 14946379m | 63.20634  | ng    |
| 37) C15(105) #2                    | 27.21   | 10083077  | 30.34921  | ng    |
| 38) C16(138) #2                    | 27.78   | 17825709m | 79.52145  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7647.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0425\M7647.D\ECD2B.CH  
 Acq On : 11-20-2014 01:26:14 PM Operator: RR  
 Sample : M8161-P-D(4) Inst : INST. M  
 Misc : NBH14-0037 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 7256279m | 20.11558 | ng    |
| 41) | C17(180) #2  | 0.00  | 0d       | N.D.     | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7648.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0425\M7648.D\ECD2B.CH  
 Acq On : 11-20-2014 02:10:38 PM Operator: RR  
 Sample : M8161DUP-P-D(4) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0037 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units |
|------------------------------------|----------|-----------|-----------|-------|
| <b>Internal Standards</b>          |          |           |           |       |
| 1) I C15(96)                       | 17.40    | 2516683   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.22    | 6017147   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52    | 14784349m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.80    | 39026184  | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |          |           |           |       |
| 4) s C13(34)                       | 0.00     | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997  | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00     | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757  | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00     | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997  | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00     | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757  | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |          |           |           |       |
| 2) C12(8)                          | 10.21    | 428862    | 24.58483  | ng    |
| 3) C13(18)                         | 12.13    | 856377    | 42.44090  | ng    |
| 5) C13(28)                         | 14.20    | 2655551m  | 78.45553  | ng    |
| 6) C14(52)                         | 15.84    | 2697330   | 114.92746 | ng    |
| 7) C14(44)                         | 16.71    | 1639248   | 46.02943  | ng    |
| 8) C14(66)                         | 18.64    | 1593874m  | 38.90849  | ng    |
| 9) C15(101)                        | 19.72    | 2187570   | 55.41053  | ng    |
| 12) C15(118)                       | 22.40    | 2843466   | 63.82887  | ng    |
| 13) C16(153)                       | 23.44 TW | 1979909m  | 45.21559  | ng    |
| 14) C15(105)                       | 23.45 TW | 1516508m  | 25.68360  | ng    |
| 15) C16(138)                       | 24.54    | 3520181m  | 64.12831  | ng    |
| 16) C17(187)                       | 0.00     | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 25.63    | 1001573m  | 17.74102  | ng    |
| 18) C17(180)                       | 0.00     | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00     | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11    | 2393353m  | 21.65842  | ng    |
| 26) C13(18) #2                     | 15.00    | 5036392m  | 42.08887  | ng    |
| 28) C13(28) #2                     | 17.77    | 16219548  | 76.20206  | ng    |
| 29) C14(52) #2                     | 19.15    | 16915865m | 146.17430 | ng    |
| 30) C14(44) #2                     | 19.96    | 10449239  | 46.24330  | ng    |
| 31) C14(66) #2                     | 22.36    | 9118259m  | 35.85932  | ng    |
| 32) C15(101) #2                    | 23.23    | 7956046m  | 56.96848  | ng    |
| 35) C15(118) #2                    | 26.34    | 16331535  | 64.63096  | ng    |
| 36) C16(153) #2                    | 26.94    | 12503136  | 45.98322  | ng    |
| 37) C15(105) #2                    | 27.21    | 8199966   | 21.43028  | ng    |
| 38) C16(138) #2                    | 27.78    | 14809920  | 59.02759  | ng    |
| 39) C17(187) #2                    | 0.00     | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7648.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0425\M7648.D\ECD2B.CH  
 Acq On : 11-20-2014 02:10:38 PM Operator: RR  
 Sample : M8161DUP-P-D(4) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0037 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 14:22:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 5955812m | 14.11595 | ng    |
| 41) | C17(180) #2  | 0.00  | 0d       | N.D.     | ng    |
| 42) | C17(170) #2  | 0.00  | 0d       | N.D.     | ng    |
| 43) | C18(195) #2  | 0.00  | 0d       | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d       | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7650.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0425\M7650.D\ECD2B.CH  
 Acq On : 11-20-2014 03:39:36 PM Operator: RR  
 Sample : M8393-P-D(4) Inst : INST. M  
 Misc : NBH14-0125 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:01:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2746676m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6510245m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15423925m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 35308658m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 869658m   | 20.80068 | ng    |
| 6) C14(52)                         | 15.84   | 599762    | 16.65034 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.40   | 1035088m  | 18.98521 | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 5763484m  | 23.74502 | ng    |
| 29) C14(52) #2                     | 19.15   | 3296136m  | 22.38262 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.34   | 5388038m  | 21.17442 | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7650.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0425\M7650.D\ECD2B.CH  
 Acq On : 11-20-2014 03:39:36 PM Operator: RR  
 Sample : M8393-P-D(4) Inst : INST. M  
 Misc : NBH14-0125 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:19 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:01:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7651.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0425\M7651.D\ECD2B.CH  
 Acq On : 11-20-2014 04:24:08 PM Operator: RR  
 Sample : M8394-P-D(4) Inst : INST. M  
 Misc : NBH14-0129 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2692233m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6153614   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15718693m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37075496m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 622909m   | 14.48944 | ng    |
| 6) C14(52)                         | 15.84   | 456613m   | 11.53302 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.40   | 665150m   | 11.92261 | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 4007893m  | 15.49059 | ng    |
| 29) C14(52) #2                     | 19.15   | 2562171m  | 16.38834 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.34   | 4405371m  | 15.68903 | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7651.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0425\M7651.D\ECD2B.CH  
 Acq On : 11-20-2014 04:24:08 PM Operator: RR  
 Sample : M8394-P-D(4) Inst : INST. M  
 Misc : NBH14-0129 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0425\M7652.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0425\M7652.D\ECD2B.CH  
 Acq On : 11-20-2014 05:08:30 PM Operator: RR  
 Sample : M8406-P-D(4) Inst : INST. M  
 Misc : NBH14-0177 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:27 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2642895m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6151539   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15043268m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 35872645  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1087213m  | 27.89202 | ng    |
| 6) C14(52)                         | 15.84   | 671858    | 20.44247 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.40   | 1260391m  | 25.40293 | ng    |
| 13) C16(153)                       | 23.44   | 960657m   | 20.68215 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1098491m  | 17.58692 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 6609602m  | 28.35407 | ng    |
| 29) C14(52) #2                     | 19.15   | 3968873m  | 28.37065 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.34   | 6784761m  | 27.11688 | ng    |
| 36) C16(153) #2                    | 26.94   | 5398847   | 19.55364 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 4050061   | 17.26060 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7652.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0425\M7652.D\ECD2B.CH  
 Acq On : 11-20-2014 05:08:30 PM Operator: RR  
 Sample : M8406-P-D(4) Inst : INST. M  
 Misc : NBH14-0177 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:27 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7653.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0425\M7653.D\ECD2B.CH  
 Acq On : 11-20-2014 05:52:59 PM Operator: RR  
 Sample : M8352-P-D(4) Inst : INST. M  
 Misc : NBH14-0193 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2817234   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6921232m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 14683120m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 36858918m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1153217m  | 27.73934 | ng    |
| 6) C14(52)                         | 15.83   | 940288m   | 28.94640 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 18.61   | 837784m   | 16.54882 | ng    |
| 9) C15(101)                        | 19.72   | 1234686   | 26.59475 | ng    |
| 12) C15(118)                       | 22.40   | 1608067m  | 29.26393 | ng    |
| 13) C16(153)                       | 23.43   | 1330040m  | 25.74498 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.54   | 1763748m  | 26.19005 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.77   | 6889891m  | 30.45886 | ng    |
| 29) C14(52) #2                     | 19.15   | 5171814m  | 39.08542 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 22.36   | 3931708m  | 14.25826 | ng    |
| 32) C15(101) #2                    | 23.23   | 4223378m  | 28.93723 | ng    |
| 35) C15(118) #2                    | 26.34   | 8311658m  | 33.04055 | ng    |
| 36) C16(153) #2                    | 26.94   | 5983159   | 21.39798 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 6453264   | 27.17331 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7653.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0425\M7653.D\ECD2B.CH  
 Acq On : 11-20-2014 05:52:59 PM Operator: RR  
 Sample : M8352-P-D(4) Inst : INST. M  
 Misc : NBH14-0193 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7654.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0425\M7654.D\ECD2B.CH  
 Acq On : 11-20-2014 06:37:36 PM Operator: RR  
 Sample : M8353-P-D(4) Inst : INST. M  
 Misc : NBH14-0197 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:35 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2570630   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 5952392   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 14819030m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 35557684  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 558944m   | 13.46365 | ng    |
| 6) C14(52)                         | 15.84   | 490875    | 13.76851 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.40   | 689447    | 12.99226 | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 3479502m  | 14.09652 | ng    |
| 29) C14(52) #2                     | 19.15   | 2896845m  | 20.22124 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.34   | 3934966m  | 14.36543 | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7654.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0425\M7654.D\ECD2B.CH  
 Acq On : 11-20-2014 06:37:36 PM Operator: RR  
 Sample : M8353-P-D(4) Inst : INST. M  
 Misc : NBH14-0197 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:35 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7656.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0425\M7656.D\ECD2B.CH  
 Acq On : 11-20-2014 08:06:42 PM Operator: RR  
 Sample : M8354-P-D(4) Inst : INST. M  
 Misc : NBH14-0199 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 2497935m  | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 6183577m  | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 14599012m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 35229930m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 10.21   | 372657m   | 20.95282  | ng    |
| 3) C13(18)                         | 12.13   | 906208m   | 45.73435  | ng    |
| 5) C13(28)                         | 14.20   | 2907848m  | 87.47004  | ng    |
| 6) C14(52)                         | 15.84   | 2470099m  | 104.51886 | ng    |
| 7) C14(44)                         | 16.70   | 1914915m  | 55.14232  | ng    |
| 8) C14(66)                         | 18.63   | 2674668m  | 69.30903  | ng    |
| 9) C15(101)                        | 19.72   | 5038504   | 138.14155 | ng    |
| 12) C15(118)                       | 22.39   | 6497382m  | 153.68348 | ng    |
| 13) C16(153)                       | 23.43   | 3642481m  | 83.23267  | ng    |
| 14) C15(105)                       | 23.45   | 3117891m  | 55.17941  | ng    |
| 15) C16(138)                       | 24.54   | 7244040m  | 134.53975 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 25.63   | 1959711m  | 34.67168  | ng    |
| 18) C17(180)                       | 27.16   | 1403131m  | 22.55575  | ng    |
| 19) C17(170)                       | 27.96   | 1039383m  | 14.24055  | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 13.11   | 1822962m  | 16.04315  | ng    |
| 26) C13(18) #2                     | 14.99   | 5288781m  | 45.21480  | ng    |
| 28) C13(28) #2                     | 17.76   | 18890533m | 91.19036  | ng    |
| 29) C14(52) #2                     | 19.15   | 15420821m | 133.08317 | ng    |
| 30) C14(44) #2                     | 19.96   | 11452889m | 51.73347  | ng    |
| 31) C14(66) #2                     | 22.36   | 15088575m | 62.40969  | ng    |
| 32) C15(101) #2                    | 23.23   | 19988109m | 144.28882 | ng    |
| 35) C15(118) #2                    | 26.34   | 36064277m | 165.45836 | ng    |
| 36) C16(153) #2                    | 26.94   | 23370269m | 98.92631  | ng    |
| 37) C15(105) #2                    | 27.21   | 18729003  | 56.51994  | ng    |
| 38) C16(138) #2                    | 27.78   | 32704561  | 139.67245 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7656.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0425\M7656.D\ECD2B.CH  
 Acq On : 11-20-2014 08:06:42 PM Operator: RR  
 Sample : M8354-P-D(4) Inst : INST. M  
 Misc : NBH14-0199 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 11711782m | 32.99748 | ng    |
| 41) | C17(180) #2  | 29.59 | 7992202m  | 24.87340 | ng    |
| 42) | C17(170) #2  | 30.22 | 5346669m  | 14.85292 | ng    |
| 43) | C18(195) #2  | 0.00  | 0d        | N.D.     | ng    |
| 44) | C19(206) #2  | 0.00  | 0d        | N.D.     | ng    |
| 45) | C110(209) #2 | 0.00  | 0d        | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0425\M7657.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0425\M7657.D\ECD2B.CH  
 Acq On : 11-20-2014 08:51:23 PM Operator: RR  
 Sample : M8364-P-D(4) Inst : INST. M  
 Misc : NBH14-0233 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:43 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2831047   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6507986m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15721114m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37602748  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 572927m   | 12.35704 | ng    |
| 6) C14(52)                         | 0.00    | 0d        | N.D.     | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.39   | 762111m   | 13.16897 | ng    |
| 13) C16(153)                       | 0.00    | 0d        | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d        | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 3665549m  | 13.98341 | ng    |
| 29) C14(52) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.33   | 4446397m  | 15.59571 | ng    |
| 36) C16(153) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7657.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0425\M7657.D\ECD2B.CH  
 Acq On : 11-20-2014 08:51:23 PM Operator: RR  
 Sample : M8364-P-D(4) Inst : INST. M  
 Misc : NBH14-0233 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:43 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7658.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0425\M7658.D\ECD2B.CH  
 Acq On : 11-20-2014 09:35:53 PM Operator: RR  
 Sample : M8366-P-D(4) Inst : INST. M  
 Misc : NBH14-0237 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc      | Units |
|------------------------------------|---------|-----------|-----------|-------|
| <b>Internal Standards</b>          |         |           |           |       |
| 1) I C15(96)                       | 17.39   | 2943294   | 95.00000  | ng    |
| 10) I C16(161)                     | 23.21   | 6892389   | 95.00000  | ng    |
| 24) I C15(96) #2                   | 20.52   | 15100282m | 95.00000  | ng    |
| 33) I C16(161) #2                  | 26.79   | 35045531m | 95.00000  | ng    |
| <b>System Monitoring Compounds</b> |         |           |           |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =         | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.      | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =         | 0.00% |
| <b>Target Compounds</b>            |         |           |           |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.      | ng    |
| 3) C13(18)                         | 12.13   | 648159    | 25.25913  | ng    |
| 5) C13(28)                         | 14.20   | 2898269m  | 72.69949  | ng    |
| 6) C14(52)                         | 15.84   | 2472123   | 86.35539  | ng    |
| 7) C14(44)                         | 16.70   | 1167478   | 26.37614  | ng    |
| 8) C14(66)                         | 18.61   | 1651950m  | 34.04379  | ng    |
| 9) C15(101)                        | 19.71   | 2896100   | 63.26911  | ng    |
| 12) C15(118)                       | 22.39   | 3680633m  | 72.90732  | ng    |
| 13) C16(153)                       | 23.43   | 3035276m  | 61.32331  | ng    |
| 14) C15(105)                       | 23.46   | 1260250m  | 17.84922  | ng    |
| 15) C16(138)                       | 24.53   | 3960515   | 62.91529  | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.      | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.      | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.      | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.      | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.      | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.      | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.      | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.      | ng    |
| 26) C13(18) #2                     | 14.99   | 3360551m  | 25.30287  | ng    |
| 28) C13(28) #2                     | 17.76   | 15835118m | 72.56660  | ng    |
| 29) C14(52) #2                     | 19.15   | 13567678m | 110.45262 | ng    |
| 30) C14(44) #2                     | 19.96   | 6379799m  | 26.54431  | ng    |
| 31) C14(66) #2                     | 22.35   | 8507954m  | 32.52302  | ng    |
| 32) C15(101) #2                    | 23.23   | 9103205m  | 64.06912  | ng    |
| 35) C15(118) #2                    | 26.34   | 18294648m | 81.69101  | ng    |
| 36) C16(153) #2                    | 26.94   | 14996411m | 62.64186  | ng    |
| 37) C15(105) #2                    | 27.20   | 6662973m  | 19.22168  | ng    |
| 38) C16(138) #2                    | 27.78   | 13777136  | 61.11420  | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7658.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0425\M7658.D\ECD2B.CH  
 Acq On : 11-20-2014 09:35:53 PM Operator: RR  
 Sample : M8366-P-D(4) Inst : INST. M  
 Misc : NBH14-0237 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7659.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0425\M7659.D\ECD2B.CH  
 Acq On : 20 Nov 2014 10:20 pm Operator: RR  
 Sample : M8367-P-D(4) Inst : INST. M  
 Misc : NBH14-0241 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2759456m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 6301646m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15155810m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 36447075m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1050763m  | 25.59389 | ng    |
| 6) C14(52)                         | 15.84   | 838415m   | 25.73211 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.71   | 999794m   | 21.62557 | ng    |
| 12) C15(118)                       | 22.39   | 1314925m  | 25.93269 | ng    |
| 13) C16(153)                       | 23.43   | 1169794m  | 24.82424 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1261485m  | 20.01916 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 6316535m  | 26.76540 | ng    |
| 29) C14(52) #2                     | 19.15   | 4978575m  | 36.18848 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 3822361m  | 24.89971 | ng    |
| 35) C15(118) #2                    | 26.34   | 6989385m  | 27.54554 | ng    |
| 36) C16(153) #2                    | 26.94   | 6044451m  | 21.94620 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 4519614m  | 19.03875 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7659.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0425\M7659.D\ECD2B.CH  
 Acq On : 20 Nov 2014 10:20 pm Operator: RR  
 Sample : M8367-P-D(4) Inst : INST. M  
 Misc : NBH14-0241 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:51 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7660.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0425\M7660.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:05 pm Operator: RR  
 Sample : M8380-P-D(4) Inst : INST. M  
 Misc : NBH14-0302 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:55 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2986236   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 6866828m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 14586460m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 33530640m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1291955m  | 29.49488 | ng    |
| 6) C14(52)                         | 15.83   | 1009876m  | 29.42201 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.72   | 1234541   | 24.96528 | ng    |
| 12) C15(118)                       | 22.39   | 1705233m  | 31.52135 | ng    |
| 13) C16(153)                       | 23.43   | 1404095m  | 27.48112 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1670043m  | 24.87463 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 6442897m  | 28.51814 | ng    |
| 29) C14(52) #2                     | 19.15   | 5404460m  | 41.32713 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 3542800m  | 23.83436 | ng    |
| 35) C15(118) #2                    | 26.34   | 7582130m  | 33.14264 | ng    |
| 36) C16(153) #2                    | 26.94   | 5925235m  | 23.64060 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 5550120m  | 25.65684 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7660.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0425\M7660.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:05 pm Operator: RR  
 Sample : M8380-P-D(4) Inst : INST. M  
 Misc : NBH14-0302 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:55 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0425\M7661.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0425\M7661.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:49 pm Operator: RR  
 Sample : M8381-P-D(4) Inst : INST. M  
 Misc : NBH14-0306 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:59 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2818250   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6434027   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15651763m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 36533344m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 10.21   | 337521    | 15.96128 | ng    |
| 3) C13(18)                         | 12.13   | 555260    | 22.01214 | ng    |
| 5) C13(28)                         | 14.20   | 3064804m  | 81.11394 | ng    |
| 6) C14(52)                         | 15.84   | 1979881   | 70.15383 | ng    |
| 7) C14(44)                         | 16.70   | 1000157   | 23.21349 | ng    |
| 8) C14(66)                         | 18.61   | 1903384m  | 41.76530 | ng    |
| 9) C15(101)                        | 19.71   | 2548138m  | 57.79417 | ng    |
| 12) C15(118)                       | 22.40   | 3839394m  | 82.27841 | ng    |
| 13) C16(153)                       | 23.43   | 2696921m  | 58.23466 | ng    |
| 14) C15(105)                       | 23.46   | 1291743m  | 19.86855 | ng    |
| 15) C16(138)                       | 24.53   | 3423980m  | 57.97754 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 13.10   | 1680936m  | 13.41140 | ng    |
| 26) C13(18) #2                     | 14.99   | 3039880m  | 21.34808 | ng    |
| 28) C13(28) #2                     | 17.76   | 18372878m | 82.00759 | ng    |
| 29) C14(52) #2                     | 19.15   | 11745637m | 90.12472 | ng    |
| 30) C14(44) #2                     | 19.96   | 6008902m  | 23.91514 | ng    |
| 31) C14(66) #2                     | 22.36   | 12022750m | 45.40497 | ng    |
| 32) C15(101) #2                    | 23.23   | 8956665m  | 60.71793 | ng    |
| 35) C15(118) #2                    | 26.34   | 20327819  | 87.37451 | ng    |
| 36) C16(153) #2                    | 26.94   | 15557954m | 62.32387 | ng    |
| 37) C15(105) #2                    | 27.20   | 7786109   | 21.76243 | ng    |
| 38) C16(138) #2                    | 27.78   | 12775734m | 54.45296 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7661.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0425\M7661.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:49 pm Operator: RR  
 Sample : M8381-P-D(4) Inst : INST. M  
 Misc : NBH14-0306 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:21:59 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7662.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0425\M7662.D\ECD2B.CH  
 Acq On : 21 Nov 2014 12:34 am Operator: RR  
 Sample : M8382-P-D(4) Inst : INST. M  
 Misc : NBH14-0310 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:22:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 2889062   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6611448   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15432279m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37848966  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1187077m  | 27.85546 | ng    |
| 6) C14(52)                         | 15.83   | 804163m   | 23.00916 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.72   | 999837m   | 20.56712 | ng    |
| 12) C15(118)                       | 22.39   | 1334992m  | 24.98632 | ng    |
| 13) C16(153)                       | 23.43   | 1029948m  | 20.62846 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1396743m  | 21.26768 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 6320459m  | 26.25913 | ng    |
| 29) C14(52) #2                     | 19.15   | 4447308m  | 31.30226 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 3736544m  | 23.74772 | ng    |
| 35) C15(118) #2                    | 26.33   | 7364887m  | 28.00433 | ng    |
| 36) C16(153) #2                    | 26.94   | 5848748m  | 20.18197 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 5125108   | 20.86144 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7662.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0425\M7662.D\ECD2B.CH  
 Acq On : 21 Nov 2014 12:34 am Operator: RR  
 Sample : M8382-P-D(4) Inst : INST. M  
 Misc : NBH14-0310 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 21 08:22:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 21 08:21:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7443.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0421\M7443.D\ECD2B.CH  
 Acq On : 04 Nov 2014 12:39 pm Operator: RR  
 Sample : CD584PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:20 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2993064   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15614386m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 0.00  | 0d        | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d        | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7443.D MM0417F.M Tue Dec 09 13:41:59 2014

Signal #1 : I:\M\DATA\SM0421\M7444.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0421\M7444.D\ECD2B.CH  
 Acq On : 11-4-2014 01:23:46 PM Operator: RR  
 Sample : CD585LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:25 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.39 | 2860108m  | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.51 | 15400691m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.73 | 1198289m  | 26.07304  | ng    | 70% |
| 5) C15(101) #2     | 23.22 | 8763171m  | 26.90795  | ng    | 72% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7446.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0421\M7446.D\ECD2B.CH  
 Acq On : 11-4-2014 02:52:46 PM Operator: RR  
 Sample : M8160-P(2) Inst : INST. M  
 Misc : NBH14-0033 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:40:05 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:40:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3290035   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.51 | 14295827  | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 5935929   | 116.24319 | ng    |
| 5) C15(101) #2     | 23.22 | 31422593m | 107.04846 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0421\M7449.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0421\M7449.D\ECD2B.CH  
 Acq On : 11-4-2014 05:06:29 PM Operator: RR  
 Sample : M8162-P(2) Inst : INST. M  
 Misc : NBH14-0041 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:33 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3141055   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14186019m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 5903328   | 121.40177 | ng    |
| 5) C15(101) #2     | 23.23 | 34446233m | 120.45571 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7449.D MM0417F.M Tue Dec 09 13:42:02 2014



Signal #1 : I:\M\DATA\SM0421\M7450.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0421\M7450.D\ECD2B.CH  
 Acq On : 11-4-2014 05:50:54 PM Operator: RR  
 Sample : M8349-P(2) Inst : INST. M  
 Misc : NBH14-0181 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:36 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3359037   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 13764477m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 7455599   | 145.01085 | ng    |
| 5) C15(101) #2     | 23.23 | 40251137  | 151.78506 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7450.D MM0417F.M Tue Dec 09 13:42:05 2014

Signal #1 : I:\M\DATA\SM0421\M7451.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0421\M7451.D\ECD2B.CH  
 Acq On : 11-4-2014 06:35:33 PM Operator: RR  
 Sample : M8350-P(2) Inst : INST. M  
 Misc : NBH14-0185 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:41 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3483908   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14082362m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 6122489   | 113.03977 | ng    |
| 5) C15(101) #2     | 23.23 | 31450762m | 109.06603 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7451.D MM0417F.M Tue Dec 09 13:42:07 2014

Signal #1 : I:\M\DATA\SM0421\M7452.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0421\M7452.D\ECD2B.CH  
 Acq On : 11-4-2014 07:19:59 PM Operator: RR  
 Sample : M8351-P(2) Inst : INST. M  
 Misc : NBH14-0189 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:45 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:39 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3178909m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14270748m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 4987214m  | 100.23254 | ng    |
| 5) C15(101) #2     | 23.23 | 27461006m | 91.85586  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7452.D MM0417F.M Tue Dec 09 13:42:09 2014

Signal #1 : I:\M\DATA\SM0421\M7455.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0421\M7455.D\ECD2B.CH  
 Acq On : 11-4-2014 09:33:36 PM Operator: RR  
 Sample : M8353-P(2) Inst : INST. M  
 Misc : NBH14-0197 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:55 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3328997   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 13452913m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 7436029   | 146.00288 | ng    |
| 5) C15(101) #2     | 23.23 | 41518896m | 162.90016 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7455.D MM0417F.M Wed Dec 10 09:13:32 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7457.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0421\M7457.D\ECD2B.CH  
 Acq On : 04 Nov 2014 11:02 pm Operator: RR  
 Sample : M8364-P(2) Inst : INST. M  
 Misc : NBH14-0233 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:23:59 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3704337   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.51 | 14088093m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 8755766   | 155.15089 | ng    |
| 5) C15(101) #2     | 23.23 | 43397957  | 162.49549 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7457.D MM0417F.M Wed Dec 10 09:13:49 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7463.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0421\M7463.D\ECD2B.CH  
 Acq On : 11-5-2014 03:29:24 AM Operator: RR  
 Sample : M8392-P(2) Inst : INST. M  
 Misc : NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:03 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:23:58 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3287575m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16318212m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 1967773m  | 2.06038  | ng    |
| 5) C15(101) #2     | 23.23 | 907151m   | 3.31660  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7463.D MM0417F.M Wed Dec 10 09:03:27 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7465.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0421\M7465.D\ECD2B.CH  
 Acq On : 11-5-2014 04:58:24 AM Operator: RR  
 Sample : M8392MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0121 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:13 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3574207   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16182679m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 2180960m  | 38.96934  | ng    |
| 5) C15(101) #2     | 23.22 | 14315617m | 42.01612  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7465.D MM0417F.M Tue Dec 09 13:42:21 2014

Signal #1 : I:\M\DATA\SM0421\M7466.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0421\M7466.D\ECD2B.CH  
 Acq On : 11-5-2014 05:42:50 AM Operator: RR  
 Sample : M8392MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0121 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:18 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3485171   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16275277m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 2636680m  | 48.92021  | ng    |
| 5) C15(101) #2     | 23.21 | 17648672m | 51.89592  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7466.D MM0417F.M Tue Dec 09 13:42:22 2014



Signal #1 : I:\M\DATA\SM0421\M7467.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0421\M7467.D\ECD2B.CH  
 Acq On : 11-5-2014 06:27:24 AM Operator: RR  
 Sample : M8393-P(2) Inst : INST. M  
 Misc : NBH14-0125 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:21 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3247963   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 13849536m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 10647186  | 221.60715 | ng    |
| 5) C15(101) #2     | 23.23 | 62646824m | 307.57266 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7467.D MM0417F.M Wed Dec 10 09:13:54 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7468.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0421\M7468.D\ECD2B.CH  
 Acq On : 11-5-2014 07:11:50 AM Operator: RR  
 Sample : M8394-P(2) Inst : INST. M  
 Misc : NBH14-0129 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:25 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3473344   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.51 | 14010319m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 8680793   | 164.77274 | ng    |
| 5) C15(101) #2     | 23.23 | 45215773m | 173.02134 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7468.D MM0417F.M Wed Dec 10 09:13:57 2014 046776CFS

Signal #1 : I:\M\DATA\SM0421\M7469.D\ECD1A.CH Vial: 29  
 Signal #2 : I:\M\DATA\SM0421\M7469.D\ECD2B.CH  
 Acq On : 11-5-2014 07:56:22 AM Operator: RR  
 Sample : M8406-P(2) Inst : INST. M  
 Misc : NBH14-0177 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:24:29 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:24:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3460648   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.51 | 13704738m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 10918606  | 212.44186 | ng    |
| 5) C15(101) #2     | 23.23 | 64230079m | 343.37773 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7469.D MM0417F.M Wed Dec 10 09:13:59 2014 046776CFS

Signal #1 : I:\M\DATA\SM0425\M7645.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0425\M7645.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:57 am Operator: RR  
 Sample : M8159-P-D(4) Inst : INST. M  
 Misc : NBH14-0029 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:19 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2313055   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15695069m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1117678m  | 28.87237 | ng    |
| 5) C15(101) #2     | 23.23 | 8083534m  | 23.16243 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7645.D MM0417F.M Tue Dec 09 13:45:40 2014

Signal #1 : I:\M\DATA\SM0425\M7647.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0425\M7647.D\ECD2B.CH  
 Acq On : 11-20-2014 01:26:14 PM Operator: RR  
 Sample : M8161-P-D(4) Inst : INST. M  
 Misc : NBH14-0037 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:22 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2168056   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14544276m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2238745   | 64.49397 | ng    |
| 5) C15(101) #2     | 23.23 | 17052030m | 53.51781 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7647.D MM0417F.M Tue Dec 09 13:45:43 2014

Signal #1 : I:\M\DATA\SM0425\M7648.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0425\M7648.D\ECD2B.CH  
 Acq On : 11-20-2014 02:10:38 PM Operator: RR  
 Sample : M8161DUP-P-D(4) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0037 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:26 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2470339m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14607828m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2187570   | 54.86311 | ng    |
| 5) C15(101) #2     | 23.23 | 14589493m | 45.24703 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7648.D MM0417F.M Tue Dec 09 13:45:45 2014

Signal #1 : I:\M\DATA\SM0425\M7653.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0425\M7653.D\ECD2B.CH  
 Acq On : 11-20-2014 05:52:59 PM Operator: RR  
 Sample : M8352-P-D(4) Inst : INST. M  
 Misc : NBH14-0193 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:40 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2817234   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14662486m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1234686   | 26.00049 | ng    |
| 5) C15(101) #2     | 23.23 | 6815167m  | 20.94227 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7653.D MM0417F.M Wed Dec 10 10:46:58 2014

Signal #1 : I:\M\DATA\SM0425\M7656.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0425\M7656.D\ECD2B.CH  
 Acq On : 11-20-2014 08:06:42 PM Operator: RR  
 Sample : M8354-P-D(4) Inst : INST. M  
 Misc : NBH14-0199 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:52:57 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 2583983   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14520763m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 4736559m  | 118.21855 | ng    |
| 5) C15(101) #2     | 23.23 | 31560733m | 105.65497 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7656.D MM0417F.M Tue Dec 09 13:45:58 2014



Signal #1 : I:\M\DATA\SM0425\M7658.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0425\M7658.D\ECD2B.CH  
 Acq On : 11-20-2014 09:35:53 PM Operator: RR  
 Sample : M8366-P-D(4) Inst : INST. M  
 Misc : NBH14-0237 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:05 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:52:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2943294   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15076773m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 2896100   | 61.30094 | ng    |
| 5) C15(101) #2     | 23.23 | 16257241m | 49.01138 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7658.D MM0417F.M Tue Dec 09 13:46:02 2014

Signal #1 : I:\M\DATA\SM0425\M7659.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0425\M7659.D\ECD2B.CH  
 Acq On : 20 Nov 2014 10:20 pm Operator: RR  
 Sample : M8367-P-D(4) Inst : INST. M  
 Misc : NBH14-0241 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:10 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2776271m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15080107m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1080748   | 22.87754 | ng    |
| 5) C15(101) #2     | 23.23 | 6226968m  | 18.66296 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7659.D MM0417F.M Tue Dec 09 13:46:04 2014

Signal #1 : I:\M\DATA\SM0425\M7660.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0425\M7660.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:05 pm Operator: RR  
 Sample : M8380-P-D(4) Inst : INST. M  
 Misc : NBH14-0302 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2918591m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14570448m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1234541   | 25.02616 | ng    |
| 5) C15(101) #2     | 23.23 | 6382195m  | 19.76395 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7661.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0425\M7661.D\ECD2B.CH  
 Acq On : 20 Nov 2014 11:49 pm Operator: RR  
 Sample : M8381-P-D(4) Inst : INST. M  
 Misc : NBH14-0306 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:19 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2818250   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15573877m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2571896   | 56.62924 | ng    |
| 5) C15(101) #2     | 23.23 | 15905358m | 46.30954 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0425\M7662.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0425\M7662.D\ECD2B.CH  
 Acq On : 21 Nov 2014 12:34 am Operator: RR  
 Sample : M8382-P-D(4) Inst : INST. M  
 Misc : NBH14-0310 5-128 14-0495 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 08:53:22 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2889062   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15488897m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1025016   | 20.68299 | ng    |
| 5) C15(101) #2     | 23.23 | 6048939m  | 17.68330 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7662.D MM0417F.M Tue Dec 09 13:46:11 2014

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0496*  
*Package DP-14-0678*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061




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**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*

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*Package DP-14-0678*






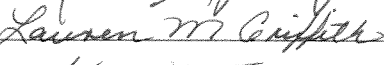

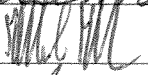



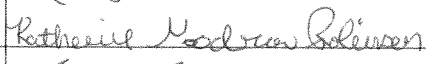





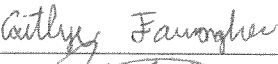



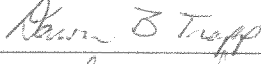




Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061

|                           |   |   |
|---------------------------|---|---|
| Analyst Approval:         |  | Rich Restucci<br>2014.11.24 14:47:55<br>-05'00' |
| QC Chemist Approval:      |  | Carla Devine<br>2014.12.10 10:26:27 -05'00'     |
| Project Manager Approval: |  | Carole McCarthy<br>2014.12.11 07:39:26 -05'00'  |

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## 2014 Signature Page

| Name (print)               | Name (signature)   | Initials  |
|----------------------------|--|---|
| Matt Schumitz              |             | MNS   |
| Ellyn M Webb               |             | EMW   |
| Carla Devine               |             | CRD   |
| Roxanne M. Brackett        |            | RMB   |
| Robert Lizotte, Jr.        |             | BL  |
| Lauren M Griffith          |             | LMG   |
| Kevin M. McInerney         |            | KMC   |
| <del>Michael McGee</del>   | <del></del> |   |
| Rich Restucci              |             | RR  |
| Stephanie Hart             |             | SAH   |
| Kerry Davis                |             | KPD   |
| Katherine Goodrow Robinson |           | KGR   |
| Sam Guimaraes              |           | SAG   |
| Emily Fraser               |           | EF  |
| Denise Schumitz            |           | DAS   |
| Jonathan Thorn             |           | JRT   |
| Christie Usher             |           | CU  |
| Caitlyn Farragher          |           | CNF   |
| Mart J. Benotti            |           |  |
| William H Brown            |           | WB  |
| Dawn Trapp                 |           | DBT   |
| Carolee S. Lynn McLain     |           | CSM   |
| Weidong Li                 |           | W.L   |
| Jeannine Seyfert           |           | JS  |
| FRANCO PALA                |           | FP  |



**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED*  
*Batch 14-0496*  
*Package DP-14-0678*

|          |   |     |
|----------|---|-----|
| <b>1</b> | <b><i>Work Plan</i></b><br>Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.  | 1   |
| <b>2</b> | <b><i>Tables</i></b><br>Analytical Data Tables, Qualifier Definitions.  | 23  |
| <b>3</b> | <b><i>Miscellaneous Documentation</i></b><br>Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.                      | 34  |
| <b>4</b> | <b><i>Sample Preparation Records</i></b><br>Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.  | 49  |
| <b>5</b> | <b><i>Analytical Calibrations</i></b><br>Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check. | 79  |
| <b>6</b> | <b><i>Analytical Data</i></b><br>Raw Data Quantification Reports.   | 137 |
| <b>7</b> | <b><i>Chromatograms</i></b><br>Sample And Standard Chromatograms.   | N/A |
| <b>8</b> | <b><i>Unused Data</i></b>   | N/A |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** USACE-NAE New Bedford Harbor LTM MDL Study  
**Project Number:** 100053747  
**Client:** USACE/NAE  
696 Virginia Road  
Concord, MA 01742  
USA  
**Client Contact Information:** Peter Hugh  
Engineering Technical Lead  
(978) 318-8452(V)  
NA  
NA  
**Effective Date of QAPP:** 10/9/2014  
**Version Number:** 100053747(S)-02  
**Project Manager:** Peven-McCarthy, Carole  
**Laboratory Task Manager:** Peven-McCarthy, Carole  
**Deliverable Due Date:** 11/3/2014

### 2.0 SCOPE OF WORK

**Overview:** A project-specific MDL study is required for this project.  
**Matrix:** Soil/Sediment

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store frozen.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** NA  
**Archiving:** NA  
**Disposal:** NA

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

NA

| Samples Expected: | Samples Per Batch: | Batches Expected: |
|-------------------|--------------------|-------------------|
|                   | 20                 |                   |

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

| Type: | Description:                      | Count:      | Rgt: | Reference:  | Comment: |
|-------|-----------------------------------|-------------|------|---|----------|
| PB    | Laboratory control reagent blank. | 1 per batch | --   | NA  |          |
| LCS   | Laboratory Control Sample         | 1 per batch | No   | NA  |          |
| MDL   | Method Detection Limits           | 8 per batch | Yes  | 140304-02: Mud Dump<br>Reference N4415<br>Lot:N4415 |          |

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

|                           |  |
|---------------------------|--|
| SOP No.-Rev:              | <b>5-192-14</b>  |
| SOP Title:                | <i>Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis</i> |
| Sample Size:              | 10 g   |
| SIS and LCS/MS Compounds: | Defined in Table 2.  |
| Deviations:               | NA   |
| Comments:                 | NA   |

**Table 2: SIS and LCS/MS Spiking Level**

| Standard Type       | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment     |
|---------------------|-------------------|-------------------|-------------|-------------|
| PCB Surrogate       | ID59 SIS          | ~ 100 ng          | 100 uL      | NA          |
| ECD LCS/MS Solution | HX10 LCS/MS       | ~ 38 - 150 ng     | 75 uL       | LCS         |
| PDL spike ECD       | ID73 LCS/MS       | ~ 7.5 - 30.0 ng   | 150 uL      | MDL samples |

#### 2.1.3.2 Cleanup

## WORK/QUALITY ASSURANCE PROJECT PLAN

- |    |              |   |
|----|--------------|---|
| 1) | SOP No.-Rev: | <b>5-328-04</b>   |
|    | SOP Title:   | <i>Removal (cleanup) of Sulfur from Environmental Sample Extracts</i> |
|    | Deviations:  | NA  |
|    | Comments:    | NA  |
| 2) | SOP No.-Rev: | <b>5-327-04</b>   |
|    | SOP Title:   | <i>Florisil Cleanup of Environmental Sample Extracts</i>              |
|    | Deviations:  | Elute with Hexane only  |
|    | Comments:    | NA  |

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

| Standard Type | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment |
|---------------|-------------------|-------------------|-------------|---------|
| PCB IS        | IE11 RIS          | ~ 100 ng          | 100 uL      | NA      |

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- |    |             |   |
|----|-------------|---|
| 1) | SOP_No-Rev: | <b>5-128-13</b>   |
|    | SOP_Title:  | <i>Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection</i> |
|    | Deviations: | NA  |
|    | Comments:   | Report SIS corrected data   |

### 2.2. DELIVERABLES

|                          |           |
|--------------------------|-----------|
| <b>Deliverables Due:</b> | 11/3/2014 |
| <b>LIMS Reports:</b>     | Yes       |
| <b>Histograms:</b>       | No        |
| <b>Excel Tables:</b>     | Yes       |
| <b>EICs:</b>             | No        |
| <b>Chromatograms:</b>    | No        |

## WORK/QUALITY ASSURANCE PROJECT PLAN

**EDDs:** *Yes*

**Comments:**

Required 30 day TAT.

EDD required.

Full data package (pdf) required for external validation.

Detailed quant reports are not required.

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

| Staff Member             | Role                    | Comment |
|--------------------------|-------------------------|---------|
| Carole S. Peven-McCarthy | Project Manager         | NA      |
| Samuel A. Guimaraes      | Sample Preparation      | NA      |
| Richard P. Restucci Jr   | GC/ECD Analysis         | NA      |
| Matt D. Schumitz         | Sample Custody          | NA      |
| Carla R. Devine          | Quality Control Officer | NA      |

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

| Activity:           | Start Date: | End Date:  | TAT (days): | Comment: |
|---------------------|-------------|------------|-------------|----------|
| Sample Receipt      | 10/03/2014  | NA         | 0           | NA       |
| Sample Preparation  | 10/06/2014  | 10/09/2014 | 3           | NA       |
| Instrument Analysis | 10/09/2014  | 10/24/2014 | 15          | NA       |

## WORK/QUALITY ASSURANCE PROJECT PLAN

| Activity:              | Start Date: | End Date:  | TAT<br>(days): | Comment: |
|------------------------|-------------|------------|----------------|----------|
| Quality Control Review | 10/27/2014  | 10/29/2014 | 2              | NA       |
| Final Data Reporting   | 10/29/2014  | 10/31/2014 | 2              | NA       |

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

| Labor Activity:        | Hours/<br>Batch: | Batches: | Total<br>Hours: | Comment: |
|------------------------|------------------|----------|-----------------|----------|
| Sample Receipt         | 1                | 1        | 1               | NA       |
| Sample Preparation     | 24               | 1        | 24              | NA       |
| <i>Extraction</i>      | 20               |          |                 |          |
| <i>glassware</i>       | 4                |          |                 |          |
| Instrument Analysis    | 16               | 1        | 16              | NA       |
| <i>GC/ECD</i>          | 16               |          |                 |          |
| Quality Control Review | 3                | 1        | 3               | NA       |
| Final Data Reporting   | 1                | 1        | 1               | NA       |

### 7.0 STAFF DEVELOPMENT

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**WORK/QUALITY ASSURANCE PROJECT PLAN**

**Attachment 1: Target Samples**

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

|                                |  |
|--------------------------------|--|
| <b>Project Test Code Name:</b> | Master_128   |
| <b>SOP Reference:</b>          | 5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection |
| <b>Description:</b>            | Pesticide / PCB by GC/ECD  |
| <b>Matrix:</b>                 | S - Solid Samples, like soil or sediment, prepared and analyzed under the same class of detection limits.  |
| <b>Detection Limit Study:</b>  | 5-128-2013-ssMDL-SF  |
| <b>Instrument:</b>             | ECD  |
| <b>MQO Criteria</b>            | USACE/NBH LTMP   |
| <b>Standard Report:</b>        | Standard Result Report   |

| Method Specific Reporting    |            | Holding Times (days)        |                    | Data Flags                           |
|------------------------------|------------|-----------------------------|--------------------|--------------------------------------|
| <b>Result Units:</b>         | ng/g       | <b>Unit Conversion:</b>     | (none)             | <b>Sample:</b> 14 <b>DL_Flag:</b> U  |
| <b>Weight Basis:</b>         | DRY        | <b>Result Format:</b>       | Significant Figure | <b>Frozen:</b> 365 <b>RL_Flag:</b> J |
| <b>Standard Basis:</b>       | SIS        | <b># of Figures/Digits:</b> | 3                  | <b>Extract:</b> 40 <b>PB_Flag:</b> B |
| <b>Oil Weight Basis:</b>     | No         | <b>Oil Weight Source:</b>   | Oil Weight         | <b>DIL_Flag:</b> D                   |
| <b>U-Value Substitution:</b> | U-Flag=NED | <b>Histograms:</b>          | No                 | <b>HT_Flag:</b> T                    |
| <b>ECD_Reporting:</b>        | Yes        |                             |                    |                                      |
| <b>ECD_Result:</b>           | Higher     | <b>ECD_Flag</b>             | p                  |                                      |
| <b>RPD_Limit (&lt;%):</b>    | 40         | <b>ECD_Manual_Flag:</b>     | m                  |                                      |

| No: | Analyte: | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|----------|--------------|------|----------|----------|---------|--------|
| 1   | Cl2(8)   | Cl2(8)       | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 2   | Cl3(18)  | Cl3(18)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 3   | Cl3(28)  | Cl3(28)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 4   | Cl4(44)  | Cl4(44)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 5   | Cl4(52)  | Cl4(52)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 6   | Cl4(66)  | Cl4(66)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 7   | Cl5(101) | Cl5(101)     | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 8   | Cl5(105) | Cl5(105)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 9   | Cl5(118) | Cl5(118)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 10  | Cl6(128) | Cl6(128)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 11  | Cl6(138) | Cl6(138)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 12  | Cl6(153) | Cl6(153)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 13  | Cl7(170) | Cl7(170)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 14  | Cl7(180) | Cl7(180)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 15  | Cl7(187) | Cl7(187)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 16  | Cl8(195) | Cl8(195)     | T    | Cl6(161) | Cl6(152) | No      | No     |



# Battelle

*The Business of Innovation*

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

| No: | Analyte:  | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|-----------|--------------|------|----------|----------|---------|--------|
| 17  | CI9(206)  | CI9(206)     | T    | CI6(161) | CI6(152) | No      | No     |
| 18  | CI10(209) | CI10(209)    | T    | CI6(161) | CI6(152) | No      | No     |
| 1   | CI3(34)   | CI3(34)      | SIS  | CI5(96)  |          | No      | No     |
| 2   | CI6(152)  | CI6(152)     | SIS  | CI6(161) |          | No      | No     |

**Total Analytes:** 20

**Subtract Peaks:**

None

**Sum Peaks:**

None

# Battelle

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

**ICAL Acceptance Criteria:**

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

**Continuing Calibration Verification Criteria:**

**CCV Name:** 5-128

| Frequency Hrs: | Mean PD(%): | Individual PD(%): | RIS/SIS RT Window (min): | Area Limit Low(%): | Area Limit High(%): | Comment: |
|----------------|-------------|-------------------|--------------------------|--------------------|---------------------|----------|
| 24 (N)         | 15 (N)      | 20 (N)            | 0.25 (N)                 | -50                | 100 (N)             | NA       |

**Independent Calibration Verification:**

**ICC Name:** 5-128

| Mean PD Limit(%): | Ind. PD Limit(%): | RIS/SIS Window Limit (Secs): | Area Limit High(%): | Area Limit Low(%): | Comment: |
|-------------------|-------------------|------------------------------|---------------------|--------------------|----------|
| 20 (N)            | 20 (N)            | 0.25 (N)                     | -50                 | 100 (N)            | NA       |

**Mass Discrimination Criteria:**

None

**Degradation Check Criteria:**

**Degradation Check Name:** 5-128

| DDT Breakdown Limit (%): | Endrin Breakdown Limit(%): | Total Breakdown Limit(%): | Comment: |
|--------------------------|----------------------------|---------------------------|----------|
| 20 (N)                   | 20 (N)                     | 20 (N)                    |          |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Procedural Blank                       | Samples must be greater than five times the blank concentration (>5xPB).  | B                     | Review with Project Manager; re-analyze or justify results in project records.               |
| PB Measurement Quality Objective       | Organic results in the Procedural Blank are less than the ssRL (<ssRL)  | N                     |  |
| Laboratory Control Sample              | Recovery values 70-130%.  | N                     | Review with project manager; re-analyze or justify reporting the results in project records. |
| Matrix Spike Recovery                  | Organics 70-130%. Analyte concentration in MS must be >5 times reported background concentration. Organics Results in the Target is less than 5 times the Original  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n                     |  |
| Matrix Spike/Spike Duplicate Precision | Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration. Organics Results in the Target is less than 5 times the Original  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n                     |  |
| Standard Reference Material Accuracy   | Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL). Organics Results in the Target is less than 5 times the MDL | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n                     |  |
| Analytical Duplicate Precision         | Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL. Organics Results in the Original is less than 10 times the MDL  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n                     |  |
| Analytical Triplicate Precision        | Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL. Organics Results in the Original is less than 10 times the MDL  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records. |
|  |   | n                     |  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Surrogate Compound Recovery            | Recovery results between 40% and 120%.  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records.   |
| Control Oil                            | RPD < 30% for at least 90% of analytes  | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Instrument Calibration                 | 5-128-13: R-squared greater than or equal to 0.995<br>Mean RSD less than or equal to 15%,<br>Individual RSD less than or equal to 25% | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Independent Calibration Check Solution | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 20%.                              | N                     | Review with Project Manager; re-analyze or justify in project records.   |
| Continuing Calibration Verification    | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 15%.                              | N                     |  |

## Sample Receipt Form

Approved:  Authorized:

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

### SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA

COC Forms:  Shipped with samples  No Forms

### Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler |              | None | Intact         | Intact              | 1.0    | 23   |

### Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0117 (NA) BDO IDs Assigned: M8152 - M8174

Samples logged in by: Schumitz, Matt Date/Time: 09/26/2014 12:00 AM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8152   | NBH14-0001        | 09/22/14 15:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8153   | NBH14-0005        | 09/22/14 14:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8154   | NBH14-0009        | 09/22/14 11:16   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8155   | NBH14-0013        | 09/22/14 12:08   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8156   | NBH14-0017        | 09/22/14 8:13    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8157   | NBH14-0021        | 09/22/14 11:38   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8158   | NBH14-0025        | 09/22/14 9:37    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8159   | NBH14-0029        | 09/22/14 10:40   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8160   | NBH14-0033        | 09/22/14 15:25   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8161   | NBH14-0037        | 09/22/14 14:03   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8162   | NBH14-0041        | 09/22/14 13:06   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8163   | NBH14-0045        | 09/23/14 15:43   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8164   | NBH14-0049        | 09/23/14 14:57   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8165   | NBH14-0053        | 09/23/14 13:53   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8166   | NBH14-0061        | 09/23/14 10:12   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8167   | NBH14-0065        | 09/23/14 9:09    | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8168   | NBH14-0073        | 09/23/14 14:27   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8169   | NBH14-0077        | 09/23/14 13:39   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8170   | NBH14-0081        | 09/23/14 12:26   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8171   | NBH14-0085        | 09/23/14 11:29   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8172   | NBH14-0089        | 09/23/14 10:32   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8173   | NBH14-0093        | 09/23/14 9:53    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8174   | NBH14-0097        | 09/23/14 8:57    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |

Total Samples: 23



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-842

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*J M Joz* 9/26/14 9:15

Received By(name/date/time):

*MW* 9/26/14 9:15



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-843

Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |  |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|--|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |  |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |  |

Relinquished By (name/date/time):

*Sam Jones* 9/26/14 9:15

Received By(name/date/time):

*MMF* 9/26/14



# Sample Receipt Form

Approved:  Authorized

Project Number: 100043429 Client: USACE  
Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM  
No. of Shipping Containers: 1

## SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
COC Forms:  Shipped with samples  No Forms

## Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal          | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|---------------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler | NA           | Custody Seals | Intact         | Intact              | 1.2    | 60   |

## Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.2 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0113 (NA) BDO IDs Assigned: M8347 - M8406  
Samples logged in by: Schumitz, Matt Date/Time: 10/01/2014 12:00 AM  
Approved By: Devine, Carla Approved On: 12/5/2014 9:32:00 AM  
Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8347   | NBH14-0057        | 09/30/14 10:09   | 10/02/14 10:08 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8348   | NBH14-0069        | 09/30/14 10:25   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8349   | NBH14-0181        | 09/26/14 8:36    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8350   | NBH14-0185        | 09/26/14 9:50    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8351   | NBH14-0189        | 09/26/14 11:00   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8352   | NBH14-0193        | 09/26/14 12:49   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8353   | NBH14-0197        | 09/26/14 13:38   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8354   | NBH14-0199        | 09/26/14 14:24   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8355   | NBH14-0203        | 09/26/14 15:17   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8356   | NBH14-0207        | 09/26/14 14:32   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8357   | NBH14-0211        | 09/26/14 13:36   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8358   | NBH14-0215        | 09/26/14 8:21    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8359   | NBH14-0219        | 09/26/14 8:50    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8360   | NBH14-0220        | 09/26/14 9:24    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8361   | NBH14-0224        | 09/26/14 10:54   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8362   | NBH14-0228        | 09/26/14 11:50   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8363   | NBH14-0232        | 09/25/14 14:16   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8364   | NBH14-0233        | 09/26/14 8:56    | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8365   | NBH14-0234        | 09/24/14 14:40   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8366   | NBH14-0237        | 09/29/14 15:14   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8367   | NBH14-0241        | 09/29/14 15:54   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8368   | NBH14-0245        | 09/29/14 8:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8369   | NBH14-0249        | 09/29/14 9:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8370   | NBH14-0253        | 09/29/14 10:01   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8371   | NBH14-0257        | 09/29/14 12:47   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8372   | NBH14-0261        | 09/29/14 14:39   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8373   | NBH14-0265        | 09/29/14 15:26   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8374   | NBH14-0269        | 09/29/14 8:13    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8375   | NBH14-0273        | 09/29/14 9:08    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8376   | NBH14-0277        | 09/29/14 9:52    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8377   | NBH14-0281        | 09/29/14 10:45   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8378   | NBH14-0285        | 09/29/14 11:15   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8379   | NBH14-0289        | 09/29/14 12:27   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8380   | NBH14-0302        | 09/30/14 8:00    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8381   | NBH14-0306        | 09/30/14 9:02    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8382   | NBH14-0310        | 09/30/14 9:59    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8383   | NBH14-0314        | 09/30/14 11:47   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8384   | NBH14-0318        | 09/30/14 12:41   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8385   | NBH14-0322        | 09/30/14 13:44   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8386   | NBH14-0326        | 09/30/14 14:36   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8387   | NBH14-0101        | 09/24/14 10:17   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8388   | NBH14-0105        | 09/24/14 9:18    | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8389   | NBH14-0109        | 09/24/14 10:56   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8390   | NBH14-0113        | 09/24/14 12:10   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8391   | NBH14-0117        | 09/24/14 13:15   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8392   | NBH14-0121        | 09/24/14 14:24   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8393   | NBH14-0125        | 09/25/14 8:15    | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8394   | NBH14-0129        | 09/25/14 9:49    | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8395   | NBH14-0133        | 09/25/14 11:00   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8396   | NBH14-0137        | 09/25/14 11:32   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8397   | NBH14-0141        | 09/25/14 12:58   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8398   | NBH14-0145        | 09/25/14 14:03   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8399   | NBH14-0149        | 09/25/14 14:56   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8400   | NBH14-0153        | 09/25/14 8:19    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8401   | NBH14-0157        | 09/25/14 9:06    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8402   | NBH14-0161        | 09/25/14 9:55    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

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|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8403   | NBH14-0165        | 09/25/14 12:58   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8404   | NBH14-0169        | 09/25/14 14:11   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8405   | NBH14-0173        | 09/25/14 15:14   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8406   | NBH14-0177        | 09/26/14 7:39    | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

Total Samples: 60



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# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | M0347     | SED    | 151-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | " " 48    | SED    | 155-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 49        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 50        | SED    | 241-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 51        | SED    | 237-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 52        | SED    | 236-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 53        | SED    | 231-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 54        | SED    | 230-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 55        | SED    | 117-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 56        | SED    | 114-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 57        | SED    | 111-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 58        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 59        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 60        | SED    | 138-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 61        | SED    | 126-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 62        | SED    | 108-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 63        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 64        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 65        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:14 | NBH14-0237 | 66        | SED    | 222-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



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Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 | M8367     | SED    | 224-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | 68        | SED    | 128-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | 69        | SED    | 123-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | 70        | SED    | 121-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | 71        | SED    | 218-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | 72        | SED    | 208-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | 73        | SED    | 207-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | 74        | SED    | 332-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | 75        | SED    | 338-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | 76        | SED    | 331-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | 77        | SED    | 323-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | 78        | SED    | 324-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | 79        | SED    | 325-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | 80        | SED    | 225-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2104 | 9:02  | NBH14-0306 | 81        | SED    | 226-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | 82        | SED    | 227-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | 83        | SED    | 217-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | 84        | SED    | 212-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | 85        | SED    | 211-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 14:36 | NBH14-0326 | 86        | SED    | 204-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



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Ship to:  
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Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | M8387     | SED    | 349-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | " " 88    | SED    | 352-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 89        | SED    | 345-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 90        | SED    | 318-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 91        | SED    | 311-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 92        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 93        | SED    | 221-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 94        | SED    | 249-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 95        | SED    | 317-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 96        | SED    | 309-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 97        | SED    | 310-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 98        | SED    | 304-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 99        | SED    | 250-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | M8400     | SED    | 105-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | " " 01    | SED    | 109-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 02        | SED    | 115-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 03        | SED    | 154-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 04        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 05        | SED    | 131-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 06        | SED    | 247-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** Procedural Blank

**Battelle ID** CD586PB-P  
**Sample Type** PB  
**Collection Date** 10/31/2014  
**Extraction Date** 10/31/2014  
**Analysis Date** 11/07/2014  
**Analytical Instrument** ECD  
**% Moisture** 1.70  
**% Lipid** NA  
**Matrix** SEDIMENT  
**Sample Size** 9.79  
**Size Unit-Basis** G\_DRY  
**Units** NG/G\_DRY

---

|           |         |
|-----------|---------|
| Cl2(8)    | 0.245 U |
| Cl3(18)   | 0.246 U |
| Cl3(28)   | 0.246 U |
| Cl4(44)   | 0.246 U |
| Cl4(52)   | 0.245 U |
| Cl4(66)   | 0.245 U |
| Cl5(101)  | 0.245 U |
| Cl5(105)  | 0.246 U |
| Cl5(118)  | 0.246 U |
| Cl6(128)  | 0.246 U |
| Cl6(138)  | 0.246 U |
| Cl6(153)  | 0.246 U |
| Cl7(170)  | 0.246 U |
| Cl7(180)  | 0.246 U |
| Cl7(187)  | 0.246 U |
| Cl8(195)  | 0.246 U |
| Cl9(206)  | 0.245 U |
| Cl10(209) | 0.246 U |

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**Surrogate Recoveries (%)**

|          |     |
|----------|-----|
| Cl3(34)  | 98  |
| Cl6(152) | 100 |



# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

|                              |                              |               |              |             |
|------------------------------|------------------------------|---------------|--------------|-------------|
| <b>Client ID</b>             | Laboratory Control<br>Sample |               |              |             |
| <b>Battelle ID</b>           | CD587LCS-P                   |               |              |             |
| <b>Sample Type</b>           | LCS                          |               |              |             |
| <b>Collection Date</b>       | 10/31/2014                   |               |              |             |
| <b>Extraction Date</b>       | 10/31/2014                   |               |              |             |
| <b>Analysis Date</b>         | 11/07/2014                   |               |              |             |
| <b>Analytical Instrument</b> | ECD                          |               |              |             |
| <b>% Moisture</b>            | 1.70                         |               |              |             |
| <b>% Lipid</b>               | NA                           |               |              |             |
| <b>Matrix</b>                | SEDIMENT                     |               |              |             |
| <b>Sample Size</b>           | 9.84                         |               |              |             |
| <b>Size Unit-Basis</b>       | G_DRY                        |               |              |             |
| <b>Units</b>                 | NG/G_DRY                     | <b>Target</b> | <b>% REC</b> | <b>Qual</b> |

|           |      |      |     |
|-----------|------|------|-----|
| Cl2(8)    | 3.35 | 3.81 | 88  |
| Cl3(18)   | 3.26 | 3.81 | 86  |
| Cl3(28)   | 3.33 | 3.81 | 87  |
| Cl4(44)   | 3.69 | 3.81 | 97  |
| Cl4(52)   | 3.66 | 3.81 | 96  |
| Cl4(66)   | 3.59 | 3.81 | 94  |
| Cl5(101)  | 3.68 | 3.81 | 97  |
| Cl5(105)  | 4.11 | 3.81 | 108 |
| Cl5(118)  | 4.15 | 3.81 | 109 |
| Cl6(128)  | 3.84 | 3.81 | 101 |
| Cl6(138)  | 3.75 | 3.81 | 98  |
| Cl6(153)  | 4.26 | 3.81 | 112 |
| Cl7(170)  | 4.52 | 3.81 | 119 |
| Cl7(180)  | 3.87 | 3.81 | 102 |
| Cl7(187)  | 3.87 | 3.81 | 102 |
| Cl8(195)  | 3.85 | 3.81 | 101 |
| Cl9(206)  | 3.74 | 3.81 | 98  |
| Cl10(209) | 3.94 | 3.81 | 103 |

**Surrogate Recoveries (%)**

|          |    |
|----------|----|
| Cl3(34)  | 98 |
| Cl6(152) | 97 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0021 | NBH14-0077 | NBH14-0089 | NBH14-0093 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8157-P    | M8169-P    | M8172-P    | M8173-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/22/2014 | 09/23/2014 | 09/23/2014 | 09/23/2014 |
| <b>Extraction Date</b>       | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analysis Date</b>         | 11/07/2014 | 11/07/2014 | 11/07/2014 | 11/07/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 3.33       | 1.62       | 1.05       | 1.02       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 2.42       | 9.94       | 9.96       | 9.89       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |        |         |         |         |
|-----------|--------|---------|---------|---------|
| Cl2(8)    | 4.86   | 1.60    | 0.709   | 2.65    |
| Cl3(18)   | 10.3   | 1.04    | 0.495   | 1.99    |
| Cl3(28)   | 23.4   | 5.78    | 2.32    | 7.58    |
| Cl4(44)   | 13.6   | 1.33    | 0.665   | 2.37    |
| Cl4(52)   | 36.3   | 3.45    | 1.70 p  | 6.52    |
| Cl4(66)   | 11.3   | 3.35    | 1.89    | 5.74    |
| Cl5(101)  | 18.4   | 3.15    | 1.67    | 5.94    |
| Cl5(105)  | 10.1   | 2.81    | 1.13    | 5.08    |
| Cl5(118)  | 31.4   | 10.9    | 4.58    | 20.0    |
| Cl6(128)  | 6.66   | 2.12    | 0.942   | 3.74    |
| Cl6(138)  | 26.3   | 7.62    | 3.29    | 13.8    |
| Cl6(153)  | 22.6   | 8.26    | 3.42    | 13.6    |
| Cl7(170)  | 2.60   | 0.867   | 0.337   | 1.60    |
| Cl7(180)  | 4.03   | 1.32    | 0.429   | 2.29    |
| Cl7(187)  | 2.47   | 1.34    | 0.439 p | 2.94 p  |
| Cl8(195)  | 1.05 U | 0.255 U | 0.255 U | 0.151 J |
| Cl9(206)  | 1.04 U | 0.128 J | 0.254 U | 0.293   |
| Cl10(209) | 1.05 U | 0.255 U | 0.255 U | 0.257 U |

### Surrogate Recoveries (%)

|          |    |     |    |     |
|----------|----|-----|----|-----|
| Cl3(34)  | 97 | 102 | 96 | 111 |
| Cl6(152) | 92 | 82  | 88 | 82  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0097 | NBH14-0269 | NBH14-0273 | NBH14-0277 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8174-P    | M8374-P    | M8375-P    | M8376-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/23/2014 | 09/29/2014 | 09/29/2014 | 09/29/2014 |
| <b>Extraction Date</b>       | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analysis Date</b>         | 11/07/2014 | 11/07/2014 | 11/08/2014 | 11/08/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 2.16       | 1.03       | 1.04       | 4.47       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 9.83       | 9.99       | 9.90       | 9.55       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |         |         |          |          |
|-----------|---------|---------|----------|----------|
| Cl2(8)    | 2.86    | 0.518   | 2.06     | 2.93     |
| Cl3(18)   | 2.63    | 0.164 J | 1.76     | 2.43     |
| Cl3(28)   | 8.90    | 1.88    | 6.06     | 9.14     |
| Cl4(44)   | 4.46    | 0.535   | 1.72     | 3.39     |
| Cl4(52)   | 7.56    | 1.80 p  | 5.10     | 9.06     |
| Cl4(66)   | 8.54    | 1.53    | 4.63     | 7.21     |
| Cl5(101)  | 7.83    | 1.61    | 4.14     | 6.83     |
| Cl5(105)  | 6.40    | 0.965   | 3.70     | 6.22     |
| Cl5(118)  | 24.2    | 4.22    | 13.9     | 24.8     |
| Cl6(128)  | 4.77    | 0.806   | 2.58     | 4.59     |
| Cl6(138)  | 18.0    | 3.08    | 9.99     | 17.3     |
| Cl6(153)  | 19.4    | 3.31    | 10.0     | 17.5     |
| Cl7(170)  | 2.10    | 0.211 J | 1.13     | 2.13     |
| Cl7(180)  | 3.19    | 0.384   | 1.55     | 2.92     |
| Cl7(187)  | 2.93    | 0.282   | 2.48 p   | 2.75     |
| Cl8(195)  | 0.239 J | 0.254 U | 0.0643 J | 0.254 J  |
| Cl9(206)  | 0.399   | 0.253 U | 0.178 J  | 0.371    |
| Cl10(209) | 0.108 J | 0.254 U | 0.256 U  | 0.189 pJ |

### Surrogate Recoveries (%)

|          |    |    |     |     |
|----------|----|----|-----|-----|
| Cl3(34)  | 83 | 98 | 103 | 107 |
| Cl6(152) | 69 | 83 | 82  | 77  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0281 | NBH14-0285 | NBH14-0289 | NBH14-0109 |
|------------------------------|------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8377-P    | M8378-P    | M8379-P    | M8389-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/29/2014 | 09/29/2014 | 09/29/2014 | 09/24/2014 |
| <b>Extraction Date</b>       | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analysis Date</b>         | 11/08/2014 | 11/08/2014 | 11/08/2014 | 11/08/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 1.61       | 3.63       | 0.52       | 4.66       |
| <b>% Lipid</b>               | NA         | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        | SED        |
| <b>Sample Size</b>           | 9.96       | 9.62       | 9.95       | 9.54       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |          |         |         |         |
|-----------|----------|---------|---------|---------|
| Cl2(8)    | 4.67     | 10.9    | 6.22    | 1.44    |
| Cl3(18)   | 5.36     | 14.1    | 5.87    | 0.863   |
| Cl3(28)   | 13.0 D   | 31.4 D  | 20.6    | 4.16    |
| Cl4(44)   | 3.95     | 18.9    | 7.34    | 1.28    |
| Cl4(52)   | 13.2     | 51.4 D  | 22.0    | 3.52    |
| Cl4(66)   | 12.5     | 23.9 D  | 11.1    | 3.29    |
| Cl5(101)  | 9.96     | 39.0 D  | 15.6    | 3.20    |
| Cl5(105)  | 10.8     | 22.7    | 14.2    | 2.61    |
| Cl5(118)  | 38.6 D   | 77.4 D  | 50.6 D  | 10.1    |
| Cl6(128)  | 7.06     | 14.6    | 9.06    | 2.01    |
| Cl6(138)  | 26.4     | 65.8 D  | 45.2 D  | 7.40    |
| Cl6(153)  | 27.1     | 56.5 D  | 43.9 D  | 7.03    |
| Cl7(170)  | 3.45     | 7.14    | 4.59    | 0.733   |
| Cl7(180)  | 4.72     | 10.9    | 6.35    | 1.07    |
| Cl7(187)  | 4.82 p   | 8.76    | 6.31 p  | 2.42 p  |
| Cl8(195)  | 0.452    | 1.11    | 0.582   | 0.266 U |
| Cl9(206)  | 0.540    | 1.48    | 0.615   | 0.265 U |
| Cl10(209) | 0.173 pJ | 0.829 p | 0.163 J | 0.266 U |

### Surrogate Recoveries (%)

|          |     |     |     |     |
|----------|-----|-----|-----|-----|
| Cl3(34)  | 104 | 115 | 112 | 103 |
| Cl6(152) | 78  | 86  | 79  | 86  |

# Battelle

The Business of Innovation

Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

| Client ID             | NBH14-0113 | NBH14-0117 | NBH14-0133 | NBH14-0137 |
|-----------------------|------------|------------|------------|------------|
| Battelle ID           | M8390-P    | M8391-P    | M8395-P    | M8396-P    |
| Sample Type           | SA         | SA         | SA         | SA         |
| Collection Date       | 09/24/2014 | 09/24/2014 | 09/25/2014 | 09/25/2014 |
| Extraction Date       | 10/31/2014 | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| Analysis Date         | 11/08/2014 | 11/08/2014 | 11/08/2014 | 11/08/2014 |
| Analytical Instrument | ECD        | ECD        | ECD        | ECD        |
| % Moisture            | 0.00       | 0.00       | 1.10       | 3.61       |
| % Lipid               | NA         | NA         | NA         | NA         |
| Matrix                | SED        | SED        | SED        | SED        |
| Sample Size           | 10.06      | 10.07      | 9.90       | 9.67       |
| Size Unit-Basis       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| Units                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |   |       |   |       |          |
|-----------|-------|---|-------|---|-------|----------|
| Cl2(8)    | 0.127 | J | 0.197 | J | 14.7  | 5.84     |
| Cl3(18)   | 0.252 | U | 0.252 | U | 16.0  | 6.10     |
| Cl3(28)   | 0.979 |   | 1.38  |   | 56.7  | D 24.8   |
| Cl4(44)   | 0.279 | p | 0.527 |   | 20.2  | 9.94     |
| Cl4(52)   | 1.16  | p | 1.96  | p | 62.8  | D 28.7   |
| Cl4(66)   | 0.999 |   | 1.03  |   | 31.8  | D 20.1   |
| Cl5(101)  | 1.17  |   | 1.45  |   | 52.8  | D 29.5   |
| Cl5(105)  | 0.386 |   | 0.574 |   | 34.4  | D 21.8   |
| Cl5(118)  | 1.90  |   | 2.54  |   | 116   | D 76.7 D |
| Cl6(128)  | 0.345 |   | 0.487 |   | 21.4  | 13.4     |
| Cl6(138)  | 1.60  |   | 2.01  |   | 96.2  | D 64.4 D |
| Cl6(153)  | 1.69  |   | 2.10  |   | 79.6  | D 56.4 D |
| Cl7(170)  | 0.252 | U | 0.252 | U | 10.7  | 6.84     |
| Cl7(180)  | 0.252 | U | 0.183 | J | 14.8  | 9.54     |
| Cl7(187)  | 0.252 | U | 0.304 | p | 11.1  | 6.81     |
| Cl8(195)  | 0.252 | U | 0.252 | U | 1.64  | 1.09 p   |
| Cl9(206)  | 0.251 | U | 0.251 | U | 2.41  | p 1.29   |
| Cl10(209) | 0.252 | U | 0.252 | U | 0.832 | 0.635 p  |

### Surrogate Recoveries (%)

|          |    |    |     |     |
|----------|----|----|-----|-----|
| Cl3(34)  | 94 | 95 | 101 | 102 |
| Cl6(152) | 90 | 90 | 80  | 69  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0141 | NBH14-0145 | NBH14-0149 |
|------------------------------|------------|------------|------------|
| <b>Battelle ID</b>           | M8397-P    | M8398-P    | M8399-P    |
| <b>Sample Type</b>           | SA         | SA         | SA         |
| <b>Collection Date</b>       | 09/25/2014 | 09/25/2014 | 09/25/2014 |
| <b>Extraction Date</b>       | 10/31/2014 | 10/31/2014 | 10/31/2014 |
| <b>Analysis Date</b>         | 11/08/2014 | 11/08/2014 | 11/08/2014 |
| <b>Analytical Instrument</b> | ECD        | ECD        | ECD        |
| <b>% Moisture</b>            | 0.00       | 0.52       | 0.52       |
| <b>% Lipid</b>               | NA         | NA         | NA         |
| <b>Matrix</b>                | SED        | SED        | SED        |
| <b>Sample Size</b>           | 10.05      | 9.96       | 2.52       |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      | G_DRY      |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |       |       |   |         |
|-----------|-------|-------|---|---------|
| Cl2(8)    | 16.6  | 43.4  | D | 9.45    |
| Cl3(18)   | 17.6  | 39.8  | D | 14.1    |
| Cl3(28)   | 50.5  | 108   | D | 37.8    |
| Cl4(44)   | 16.2  | 32.6  | D | 14.8    |
| Cl4(52)   | 55.7  | 113   | D | 51.8    |
| Cl4(66)   | 19.8  | 46.6  | D | 18.6    |
| Cl5(101)  | 35.8  | 51.5  | D | 23.9    |
| Cl5(105)  | 21.7  | 30.0  |   | 16.0    |
| Cl5(118)  | 71.2  | 108   | D | 58.2    |
| Cl6(128)  | 13.5  | 15.8  |   | 9.90    |
| Cl6(138)  | 52.5  | 72.9  | D | 39.9    |
| Cl6(153)  | 48.0  | 74.4  | D | 41.5    |
| Cl7(170)  | 5.80  | 7.13  |   | 4.40    |
| Cl7(180)  | 7.87  | 10.7  |   | 7.43    |
| Cl7(187)  | 5.84  | 9.33  |   | 6.62 p  |
| Cl8(195)  | 0.826 | 1.12  |   | 0.327 J |
| Cl9(206)  | 0.817 | 1.33  |   | 1.00 U  |
| Cl10(209) | 0.388 | 0.361 | p | 1.01 U  |

### Surrogate Recoveries (%)

|          |     |     |  |     |
|----------|-----|-----|--|-----|
| Cl3(34)  | 114 | 109 |  | 108 |
| Cl6(152) | 95  | 83  |  | 86  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0093 | NBH14-0093 |                 |
|------------------------------|------------|------------|-----------------|
| <b>Battelle ID</b>           | M8173-P    | M8173DUP-P |                 |
| <b>Sample Type</b>           | SA         | QADU       |                 |
| <b>Collection Date</b>       | 09/23/2014 | 09/23/2014 |                 |
| <b>Extraction Date</b>       | 10/31/2014 | 10/31/2014 |                 |
| <b>Analysis Date</b>         | 11/07/2014 | 11/07/2014 |                 |
| <b>Analytical Instrument</b> | ECD        | ECD        |                 |
| <b>% Moisture</b>            | 1.02       | 1.06       |                 |
| <b>% Lipid</b>               | NA         | NA         |                 |
| <b>Matrix</b>                | SED        | SED        |                 |
| <b>Sample Size</b>           | 9.89       | 10.08      |                 |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      |                 |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | <b>RPD Qual</b> |

|           |         |         |      |
|-----------|---------|---------|------|
| Cl2(8)    | 2.65    | 3.09    | 15.3 |
| Cl3(18)   | 1.99    | 2.16    | 8.2  |
| Cl3(28)   | 7.58    | 8.24    | 8.3  |
| Cl4(44)   | 2.37    | 2.52    | 6.1  |
| Cl4(52)   | 6.52    | 7.03    | 7.5  |
| Cl4(66)   | 5.74    | 5.96    | 3.8  |
| Cl5(101)  | 5.94    | 5.80    | 2.4  |
| Cl5(105)  | 5.08    | 5.25    | 3.3  |
| Cl5(118)  | 20.0    | 21.0    | 4.9  |
| Cl6(128)  | 3.74    | 3.65    | 2.4  |
| Cl6(138)  | 13.8    | 14.3    | 3.6  |
| Cl6(153)  | 13.6    | 14.1    | 3.6  |
| Cl7(170)  | 1.60    | 1.61    | 0.6  |
| Cl7(180)  | 2.29    | 2.24    | 2.2  |
| Cl7(187)  | 2.94 p  | 2.96 p  | 0.7  |
| Cl8(195)  | 0.151 J | 0.167 J |      |
| Cl9(206)  | 0.293   | 0.247 J | 17.0 |
| Cl10(209) | 0.257 U | 0.252 U |      |

### Surrogate Recoveries (%)

|          |     |     |  |
|----------|-----|-----|--|
| Cl3(34)  | 111 | 106 |  |
| Cl6(152) | 82  | 82  |  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                | NBH14-0113 | NBH14-0113 |        |       |      |
|--------------------------|------------|------------|--------|-------|------|
| Battelle ID              | M8390-P    | M8390MS-P  |        |       |      |
| Sample Type              | SA         | MS         |        |       |      |
| Collection Date          | 09/24/2014 | 09/24/2014 |        |       |      |
| Extraction Date          | 10/31/2014 | 10/31/2014 |        |       |      |
| Analysis Date            | 11/08/2014 | 11/08/2014 |        |       |      |
| Analytical Instrument    | ECD        | ECD        |        |       |      |
| % Moisture               | 0.00       | 0.53       |        |       |      |
| % Lipid                  | NA         | NA         |        |       |      |
| Matrix                   | SED        | SED        |        |       |      |
| Sample Size              | 10.06      | 5.00       |        |       |      |
| Size Unit-Basis          | G_DRY      | G_DRY      |        |       |      |
| Units                    | NG/G_DRY   | NG/G_DRY   | Target | % REC | Qual |
| Cl2(8)                   | 0.127 J    | 11.0       | 12.50  | 87    |      |
| Cl3(18)                  | 0.252 U    | 10.6       | 12.50  | 85    |      |
| Cl3(28)                  | 0.979      | 12.3       | 12.50  | 91    |      |
| Cl4(44)                  | 0.279 p    | 12.7       | 12.50  | 99    |      |
| Cl4(52)                  | 1.16 p     | 12.2       | 12.50  | 88    |      |
| Cl4(66)                  | 0.999      | 13.2       | 12.50  | 98    |      |
| Cl5(101)                 | 1.17       | 11.2       | 12.50  | 80    |      |
| Cl5(105)                 | 0.386      | 12.4       | 12.50  | 96    |      |
| Cl5(118)                 | 1.90       | 13.6       | 12.50  | 94    |      |
| Cl6(128)                 | 0.345      | 12.6       | 12.50  | 98    |      |
| Cl6(138)                 | 1.60       | 12.6       | 12.50  | 88    |      |
| Cl6(153)                 | 1.69       | 13.2       | 12.50  | 92    |      |
| Cl7(170)                 | 0.252 U    | 12.7       | 12.50  | 102   |      |
| Cl7(180)                 | 0.252 U    | 13.0       | 12.50  | 104   |      |
| Cl7(187)                 | 0.252 U    | 12.5       | 12.50  | 100   |      |
| Cl8(195)                 | 0.252 U    | 13.6       | 12.50  | 109   |      |
| Cl9(206)                 | 0.251 U    | 14.1       | 12.50  | 113   |      |
| Cl10(209)                | 0.252 U    | 15.0       | 12.50  | 120   |      |
| Surrogate Recoveries (%) |            |            |        |       |      |
| Cl3(34)                  | 94         | 98         |        |       |      |
| Cl6(152)                 | 90         | 98         |        |       |      |



# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

**Client ID** NBH14-0113

**Battelle ID** M8390MSD-P

**Sample Type** MSD

**Collection Date** 09/24/2014

**Extraction Date** 10/31/2014

**Analysis Date** 11/08/2014

**Analytical Instrument** ECD

**% Moisture** 0.00

**% Lipid** NA

**Matrix** SED

**Sample Size** 5.14

**Size Unit-Basis** G\_DRY

**Units** NG/G\_DRY **Target % REC Qual RPD Qual**

|           |      | Target | % REC | Qual | RPD  | Qual |
|-----------|------|--------|-------|------|------|------|
| CI2(8)    | 11.0 | 12.16  | 89    |      | 2.3  |      |
| CI3(18)   | 10.6 | 12.16  | 87    |      | 2.3  |      |
| CI3(28)   | 12.5 | 12.16  | 95    |      | 4.3  |      |
| CI4(44)   | 13.7 | 12.16  | 110   |      | 10.5 |      |
| CI4(52)   | 13.1 | 12.16  | 98    |      | 10.8 |      |
| CI4(66)   | 13.4 | 12.16  | 102   |      | 4.0  |      |
| CI5(101)  | 12.2 | 12.16  | 91    |      | 12.9 |      |
| CI5(105)  | 11.9 | 12.16  | 95    |      | 1.0  |      |
| CI5(118)  | 13.4 | 12.16  | 95    |      | 1.1  |      |
| CI6(128)  | 12.1 | 12.16  | 97    |      | 1.0  |      |
| CI6(138)  | 13.2 | 12.16  | 95    |      | 7.7  |      |
| CI6(153)  | 13.8 | 12.16  | 100   |      | 8.3  |      |
| CI7(170)  | 11.8 | 12.16  | 97    |      | 5.0  |      |
| CI7(180)  | 12.0 | 12.16  | 98    |      | 5.9  |      |
| CI7(187)  | 12.0 | 12.16  | 98    |      | 2.0  |      |
| CI8(195)  | 12.1 | 12.16  | 100   |      | 8.6  |      |
| CI9(206)  | 11.9 | 12.16  | 98    |      | 14.2 |      |
| CI10(209) | 12.5 | 12.16  | 103   |      | 15.2 |      |

### Surrogate Recoveries (%)

|          |    |
|----------|----|
| CI3(34)  | 93 |
| CI6(152) | 98 |

## Glossary of Data Qualifiers

**Flag: Application:**

---

- B Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
- D Dilution Run. Initial run outside linear range of instrument.
- E Estimate, result is greater than the highest concentration level in the calibration.
- H Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
- J Analyte detected below the sample-specific Reporting Limit (RL).
- m Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
- ME Significant Matrix Interference - Estimated value.
- MI Significant Matrix Interference - value could not be determined or estimated.
- n Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
- N Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
- NA Not applicable
- p Dual column value exceeds RPD criteria, dual column quantitative analysis only.
- T Holding Time (HT) exceeded.
- U Analyte not detected at 3:1 signal:noise ratio.

**QA/QC Summary  
Batch 14-0496**

|                   |   |
|-------------------|---|
| Project:          | USACE/NAE – New Bedford Harbor Long Term Monitoring |
| Parameters:       | PCB Congeners (NOAA 18)                             |
| Laboratory:       | Battelle, Norwell, MA                               |
| Matrix:           | Sediment  |
| Data Set:         | DP-14-0678  |
| Analytical SOP:   | 5-128   |
| Method Reference: | EPA Method 8081B and 8082A (modified)               |

**Sample Custody**

| Collection Date | Receipt Date    | Temp (°C) |
|-----------------|-----------------|-----------|
| 9/22-30/2014    | 9/26, 10/1/2014 | 1.0, 1.2  |

|                    |   |
|--------------------|---|
| Corrective Actions | NA  |
| Sample Storage     | The sediment samples were stored frozen until extraction. |
| Related samples    | NA  |

**METHOD SUMMARIES**

|                    |  |
|--------------------|--|
| Sample Preparation | Prior to sediment extraction, an aliquot of approximately 30 g of wet sediment was placed on clean, labeled aluminum foil, covered and placed in a laboratory laminar flow hood to dry the sample to <50% moisture. Aliquots of these dried samples were weighed into sample extraction vessels for sample extraction. Approximately 2.5 to 10 g sediment was weighed out for extraction (sample weight based on historical analysis results). The sediments were spiked with surrogates, extracted three times with methylene chloride, and the extracts combined, dried over anhydrous sodium sulfate, and concentrated. The concentrated extracts were processed through Florisil to isolate the PCBs, followed by activated copper treatment to remove sulfur. The cleaned extract was concentrated and fortified with internal standard (IS) compounds prior to analysis by GC/ECD. |
| Prep Comments      | During Florisil columns, sample M8171 did not elute into the 40 mL vial. Per order of project manager, the sample will added to batch 14-0497 and caught up with the rest of the batch.  |

|                   |   |
|-------------------|---|
| Analysis          | PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration. |
| Analysis Comments | <ul style="list-style-type: none"> <li>Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed</li> </ul>   |

**QA/QC Summary  
Batch 14-0496**

|  |   |
|--|---|
|  | <p>inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.</p> <ul style="list-style-type: none"> <li>• In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.</li> <li>• In cases where p qualifiers are present, integrations and data were reviewed.</li> <li>• Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak. Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.</li> </ul> |
|--|---|

| Holding Times | Extraction Date(s) | Analysis Date(s) |
|---------------|--------------------|------------------|
|               | 10/31/2014         | 11/7-9/2014      |

|                       |  |
|-----------------------|--|
| Procedural Blank (PB) | A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination. |
| Blank value <5x ssMDL | No exceedances noted.  |
| Samples >5X PB        | No comments.   |

|                          |   |
|--------------------------|---|
| Laboratory Control Spike | A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. |
| 70-130% recovery         | No exceedances noted.   |
|                          | No comments.  |

|  |   |
|--|---|
| Matrix Spike (MS)/Matrix Spike Duplicate (MSD) | A MS/MSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. |
| 70-130% recovery                               | No exceedances noted  |
| <30% RPD                                       | No comments.  |
| Spike must be >5x bkgd conc.                   |   |

**QA/QC Summary  
Batch 14-0496**

|                                   |   |
|-----------------------------------|---|
| Sample Duplicate (DUP)            | A laboratory duplicate of one sediment was prepared with the analytical batch. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. <b>NOTE: This QC sample was inadvertently included in the sample batch instead of the requested SRM.</b> |
| <30% RPD<br>Conc must be >10X MDL | No exceedances noted.<br>No comments.   |

|                    |   |
|--------------------|---|
| Surrogate Recovery | Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency. |
| 40-120% recovery   | No exceedances noted.<br>No comments.   |

|                            |  |
|----------------------------|--|
| Initial Calibration (ICAL) | The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF). |
| $R^2 \geq 0.995$           | No exceedances noted.<br>No comments.  |

|  |   |
|--|---|
| Independent Calibration Check (ICC)        | The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL. |
| $\leq 20\%$ difference individual and mean | No exceedances noted.<br>No comments.   |

|  |   |
|--|---|
| Continuing Calibration Verification (CCV)                      | Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid. |
| $\leq 20\%$ difference individual; $\leq 15\%$ difference mean | No exceedances noted.<br>No comments.   |

## Report Project Data Set MOOs

**Project Title:** USACE/NAE - New Bedford Harbor LTM

**Data Set Number:** DP-14-0678

**Project Number:** 100053747

**Prep Batch Number:** 14-0496

**Test Code (Matrix Type):** Master\_128(S)

| <b>QC_PARAMETER:</b>                   | <b>Exceed:</b> | <b>Contg.:</b> | <b>JUSTIFICATION:</b> |
|--|----------------|----------------|-----------------------|
| Procedural Blank                       | 0              | 0              | None                  |
| PB Measurement Quality Objective       | 0              | 0              | None                  |
| Laboratory Control Sample              | 0              | 0              | None                  |
| Matrix Spike Recovery                  | 0              | 0              | None                  |
| Matrix Spike/Spike Duplicate Precision | 0              | 0              | None                  |
| Standard Reference Material Accuracy   | NA             | NA             | NA                    |
| Analytical Duplicate Precision         | 0              | 0              | None                  |
| Analytical Triplicate Precision        | NA             | NA             | NA                    |
| Surrogate Compound Recovery            | 0              | 0              | None                  |
| Control Oil                            | NA             | NA             | NA                    |
| Instrument Calibration                 | 0              | 0              | None                  |
| Independent Calibration Check Solution | 0              | 0              | None                  |
| Continuing Calibration Verification    | 0              | 0              | None                  |

## BATTELLE - DUXBURY OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** USACE/NAE - New Bedford Harbor LTM      **Data Set Number:** DP-14-0678  
**Project Number:** 100053747      **Prep Batch Number:** 14-0496  
**Entered By:** Richard Restucci Jr      **Entered On:** 11/24/2014  
**Test Code (Matrix Type):** Master\_128(S)

Integrations by Rich Restucci.  
RR 11/24/14

Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak.

Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.  
RR 12/8/14

Method MM0417C utilizes the quant sheets from MM0417B.  
RR 11/24/14

Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96,161, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.  
RR 11/24/14

In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.  
RR 11/24/14

In cases where p qualifiers are present, integrations and data were reviewed.  
RR 11/24/14

**Task Leader Approval:**  Kevin McInerney  
2014.12.08 14:08:05 -05'00'

**Supervisor Approval:**

**PM Approval:**  Carole McCarthy  
2014.12.09 07:44:02 -05'00'

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2021371 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2857033 |

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| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | Cl5(96) | 3434576 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | Cl5(96) | 3500251 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | Cl5(96) | 3678408 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | Cl5(96) | 3606887 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | Cl5(96) | 3661050 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | Cl5(96) | 3497272 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | Cl5(96) | 3596588 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | Cl5(96) | 3594048 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | Cl5(96) | 3825068 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | Cl5(96) | 3801859 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | Cl5(96) | 3819746 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | Cl5(96) | 3718834 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | Cl5(96) | 3645097 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | Cl5(96) | 3533034 |       |
| SM0423.S  | M7521.D | M8378-P(2)    | SA    | Cl5(96) | 3792004 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | Cl5(96) | 3608786 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | Cl5(96) | 3490502 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | Cl5(96) | 3688374 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | Cl5(96) | 3626221 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | Cl5(96) | 3781855 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | Cl5(96) | 3497694 |       |
| SM0423.S  | M7528.D | M8395-P(2)    | SA    | Cl5(96) | 3530570 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | Cl5(96) | 3751383 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | Cl5(96) | 2980050 |       |
| SM0423.S  | M7531.D | M8397-P(2)    | SA    | Cl5(96) | 3649612 |       |
| SM0423.S  | M7532.D | M8398-P(2)    | SA    | Cl5(96) | 3730211 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | Cl5(96) | 3467952 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | Cl5(96) | 3843679 |       |
| SM0423.S  | M7544.D | M8377-P-D(4)  | SA    | Cl5(96) | 3048730 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | Cl5(96) | 3151053 |       |
| SM0423.S  | M7546.D | M8379-P-D(4)  | SA    | Cl5(96) | 2818436 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 1

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0423.S         | M7550.D      | M8395-P-D(4)  | SA           | CI5(96)      | 2880283      |              |
| SM0423.S         | M7551.D      | IE07          | CCV          | CI5(96)      | 3751725      |              |
| SM0423.S         | M7552.D      | M8396-P-D(4)  | SA           | CI5(96)      | 2961828      |              |
| SM0423.S         | M7553.D      | M8397-P-D(4)  | SA           | CI5(96)      | 2938973      |              |
| SM0423.S         | M7554.D      | M8398-P-D(4)  | SA           | CI5(96)      | 2927377      |              |
| SM0423.S         | M7562.D      | IE08          | CCV          | CI5(96)      | 3623258      |              |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:    | AREA:   |
|-----------|---------|--------|-------|----------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161) | 4304957 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161) | 4562564 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161) | 4815577 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161) | 5366502 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161) | 5424577 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161) | 5785136 |

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 (+) 9631155  
 (-) 2407789

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|---------------|-------|----------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 5353469 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | Cl6(161) | 7932432 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | Cl6(161) | 6760589 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | Cl6(161) | 7211167 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | Cl6(161) | 7126224 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | Cl6(161) | 7429651 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | Cl6(161) | 6819154 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | Cl6(161) | 7718853 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | Cl6(161) | 7577535 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | Cl6(161) | 7975678 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | Cl6(161) | 7960388 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | Cl6(161) | 7523269 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | Cl6(161) | 8628871 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | Cl6(161) | 7762451 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | Cl6(161) | 8356117 |       |
| SM0423.S  | M7521.D | M8378-P(2)    | SA    | Cl6(161) | 7181827 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | Cl6(161) | 8322299 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | Cl6(161) | 7055913 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | Cl6(161) | 7754964 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | Cl6(161) | 7432844 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | Cl6(161) | 7722627 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | Cl6(161) | 7207309 |       |
| SM0423.S  | M7528.D | M8395-P(2)    | SA    | Cl6(161) | 6831259 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | Cl6(161) | 8260707 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | Cl6(161) | 6981212 |       |
| SM0423.S  | M7531.D | M8397-P(2)    | SA    | Cl6(161) | 5855936 |       |
| SM0423.S  | M7532.D | M8398-P(2)    | SA    | Cl6(161) | 6615296 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | Cl6(161) | 7095996 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | Cl6(161) | 8987186 |       |
| SM0423.S  | M7544.D | M8377-P-D(4)  | SA    | Cl6(161) | 7221829 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | Cl6(161) | 7453505 |       |
| SM0423.S  | M7546.D | M8379-P-D(4)  | SA    | Cl6(161) | 6153499 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 1

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA:</b> | <b>FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------|--------------|
| SM0423.S         | M7550.D      | M8395-P-D(4)  | SA           | Cl6(161)     | 6695342      |              |
| SM0423.S         | M7551.D      | IE07          | CCV          | Cl6(161)     | 8549030      |              |
| SM0423.S         | M7552.D      | M8396-P-D(4)  | SA           | Cl6(161)     | 6855590      |              |
| SM0423.S         | M7553.D      | M8397-P-D(4)  | SA           | Cl6(161)     | 6629681      |              |
| SM0423.S         | M7554.D      | M8398-P-D(4)  | SA           | Cl6(161)     | 6728469      |              |
| SM0423.S         | M7562.D      | IE08          | CCV          | Cl6(161)     | 7822875      |              |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 12822282 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 12416297 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 13716870 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 14992953 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 15446142 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 15534608 |

L3 13716870  
(+) 27433739  
(-) 6858435

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl5(96) | 13969685 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | Cl5(96) | 16878951 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | Cl5(96) | 15448268 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | Cl5(96) | 16443161 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | Cl5(96) | 14883017 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | Cl5(96) | 14542091 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | Cl5(96) | 17235230 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | Cl5(96) | 14123699 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | Cl5(96) | 15122669 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | Cl5(96) | 15723574 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | Cl5(96) | 16569354 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | Cl5(96) | 14682150 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | Cl5(96) | 17962544 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | Cl5(96) | 15040396 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | Cl5(96) | 15222855 |       |
| SM0423.S  | M7521.D | M8378-P(2)    | SA    | Cl5(96) | 14022060 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | Cl5(96) | 14026166 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | Cl5(96) | 14601470 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | Cl5(96) | 15499309 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | Cl5(96) | 15829971 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | Cl5(96) | 17075691 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | Cl5(96) | 15935191 |       |
| SM0423.S  | M7528.D | M8395-P(2)    | SA    | Cl5(96) | 12932455 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | Cl5(96) | 19093439 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | Cl5(96) | 12537385 |       |
| SM0423.S  | M7531.D | M8397-P(2)    | SA    | Cl5(96) | 13606181 |       |
| SM0423.S  | M7532.D | M8398-P(2)    | SA    | Cl5(96) | 12952429 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | Cl5(96) | 14430981 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | Cl5(96) | 18028230 |       |
| SM0423.S  | M7544.D | M8377-P-D(4)  | SA    | Cl5(96) | 18877567 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | Cl5(96) | 15019310 |       |
| SM0423.S  | M7546.D | M8379-P-D(4)  | SA    | Cl5(96) | 16473995 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 2

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA: FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------------|
| SM0423.S         | M7550.D      | M8395-P-D(4)  | SA           | CI5(96)      | 14313584           |
| SM0423.S         | M7551.D      | IE07          | CCV          | CI5(96)      | 17039195           |
| SM0423.S         | M7552.D      | M8396-P-D(4)  | SA           | CI5(96)      | 15576981           |
| SM0423.S         | M7553.D      | M8397-P-D(4)  | SA           | CI5(96)      | 15046552           |
| SM0423.S         | M7554.D      | M8398-P-D(4)  | SA           | CI5(96)      | 15823580           |
| SM0423.S         | M7562.D      | IE08          | CCV          | CI5(96)      | 19132613           |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161)   | 28199596 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161)   | 27129752 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161)   | 29503850 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161)   | 34497986 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161)   | 34872167 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161)   | 28894537 |
|           |         |        |       | <b>L3</b>  | 29503850 |
|           |         |        |       | <b>(+)</b> | 59007699 |
|           |         |        |       | <b>(-)</b> | 14751925 |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|---------------|-------|----------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 30447371 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | Cl6(161) | 40450051 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | Cl6(161) | 36429176 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | Cl6(161) | 38220438 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | Cl6(161) | 33506285 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | Cl6(161) | 32696655 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | Cl6(161) | 41696747 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | Cl6(161) | 32817040 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | Cl6(161) | 31356312 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | Cl6(161) | 31987965 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | Cl6(161) | 41560755 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | Cl6(161) | 31868339 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | Cl6(161) | 41916063 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | Cl6(161) | 34424303 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | Cl6(161) | 29078770 |       |
| SM0423.S  | M7521.D | M8378-P(2)    | SA    | Cl6(161) | 27068352 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | Cl6(161) | 30923957 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | Cl6(161) | 33117738 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | Cl6(161) | 36608343 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | Cl6(161) | 38617300 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | Cl6(161) | 40154673 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | Cl6(161) | 37575236 |       |
| SM0423.S  | M7528.D | M8395-P(2)    | SA    | Cl6(161) | 25010599 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | Cl6(161) | 46464449 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | Cl6(161) | 28703854 |       |
| SM0423.S  | M7531.D | M8397-P(2)    | SA    | Cl6(161) | 28428383 |       |
| SM0423.S  | M7532.D | M8398-P(2)    | SA    | Cl6(161) | 24833214 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | Cl6(161) | 33620717 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | Cl6(161) | 44794389 |       |
| SM0423.S  | M7544.D | M8377-P-D(4)  | SA    | Cl6(161) | 41158929 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | Cl6(161) | 37758922 |       |
| SM0423.S  | M7546.D | M8379-P-D(4)  | SA    | Cl6(161) | 42163722 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417C.M

**SIGNAL:** 2

| <b>SEQUENCE:</b> | <b>FILE:</b> | <b>LEVEL:</b> | <b>TYPE:</b> | <b>PEAK:</b> | <b>AREA: FLAG:</b> |
|------------------|--------------|---------------|--------------|--------------|--------------------|
| SM0423.S         | M7550.D      | M8395-P-D(4)  | SA           | Cl6(161)     | 34615467           |
| SM0423.S         | M7551.D      | IE07          | CCV          | Cl6(161)     | 42450268           |
| SM0423.S         | M7552.D      | M8396-P-D(4)  | SA           | Cl6(161)     | 39984413           |
| SM0423.S         | M7553.D      | M8397-P-D(4)  | SA           | Cl6(161)     | 37848133           |
| SM0423.S         | M7554.D      | M8398-P-D(4)  | SA           | Cl6(161)     | 40339284           |
| SM0423.S         | M7562.D      | IE08          | CCV          | Cl6(161)     | 49440212           |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417F.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl5(96) | 2038180 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl5(96) | 2539311 |

L3  
(+)  
(-)

2225995

4451990

1112997

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl5(96) | 2508888 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | Cl5(96) | 3442942 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | Cl5(96) | 3500251 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | Cl5(96) | 3678408 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | Cl5(96) | 3606887 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | Cl5(96) | 3730347 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | Cl5(96) | 3413799 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | Cl5(96) | 3821753 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | Cl5(96) | 3818478 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | Cl5(96) | 3598087 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | Cl5(96) | 3993606 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | Cl5(96) | 3642557 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | Cl5(96) | 3718834 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | Cl5(96) | 3706957 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | Cl5(96) | 3661218 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | Cl5(96) | 3608786 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | Cl5(96) | 3576563 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | Cl5(96) | 3841608 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | Cl5(96) | 3712111 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | Cl5(96) | 3815342 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | Cl5(96) | 3562613 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | Cl5(96) | 3751383 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | Cl5(96) | 3170879 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | Cl5(96) | 3467952 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | Cl5(96) | 3843679 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | Cl5(96) | 3214494 |       |
| SM0423.S  | M7550.D | M8395-P-D(4)  | SA    | Cl5(96) | 2880283 |       |
| SM0423.S  | M7551.D | IE07          | CCV   | Cl5(96) | 3751725 |       |
| SM0423.S  | M7553.D | M8397-P-D(4)  | SA    | Cl5(96) | 2938973 |       |
| SM0423.S  | M7554.D | M8398-P-D(4)  | SA    | Cl5(96) | 2927377 |       |
| SM0423.S  | M7562.D | IE08          | CCV   | Cl5(96) | 3597732 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0496

**METHOD:** MM0417F.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 12872032 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 13386960 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 13612237 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 14869473 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 15494530 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 15194166 |

L3 13612237  
 (+) 27224474  
 (-) 6806118

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13936712 |       |
| SM0423.S  | M7507.D | IE07          | CCV   | CI5(96) | 16878951 |       |
| SM0423.S  | M7508.D | CD586PB-P(0)  | PB    | CI5(96) | 15534506 |       |
| SM0423.S  | M7509.D | CD587LCS-P(0) | LCS   | CI5(96) | 16362055 |       |
| SM0423.S  | M7510.D | M8157-P(2)    | SA    | CI5(96) | 14908515 |       |
| SM0423.S  | M7511.D | M8169-P(2)    | SA    | CI5(96) | 14801084 |       |
| SM0423.S  | M7512.D | M8172-P(2)    | SA    | CI5(96) | 17180107 |       |
| SM0423.S  | M7513.D | M8173-P(2)    | SA    | CI5(96) | 14464983 |       |
| SM0423.S  | M7514.D | M8173DUP-P(2) | QADU  | CI5(96) | 15214332 |       |
| SM0423.S  | M7515.D | M8174-P(2)    | SA    | CI5(96) | 17393537 |       |
| SM0423.S  | M7516.D | M8374-P(2)    | SA    | CI5(96) | 16968250 |       |
| SM0423.S  | M7517.D | M8375-P(2)    | SA    | CI5(96) | 14592652 |       |
| SM0423.S  | M7518.D | IE08          | CCV   | CI5(96) | 17789588 |       |
| SM0423.S  | M7519.D | M8376-P(2)    | SA    | CI5(96) | 15366104 |       |
| SM0423.S  | M7520.D | M8377-P(2)    | SA    | CI5(96) | 17154942 |       |
| SM0423.S  | M7522.D | M8379-P(2)    | SA    | CI5(96) | 14094583 |       |
| SM0423.S  | M7523.D | M8389-P(2)    | SA    | CI5(96) | 15310743 |       |
| SM0423.S  | M7524.D | M8390-P(2)    | SA    | CI5(96) | 15551885 |       |
| SM0423.S  | M7525.D | M8390MS-P(0)  | MS    | CI5(96) | 16394768 |       |
| SM0423.S  | M7526.D | M8390MSD-P(0) | MSD   | CI5(96) | 17197358 |       |
| SM0423.S  | M7527.D | M8391-P(2)    | SA    | CI5(96) | 16022197 |       |
| SM0423.S  | M7529.D | IE08          | CCV   | CI5(96) | 19209692 |       |
| SM0423.S  | M7530.D | M8396-P(2)    | SA    | CI5(96) | 12072108 |       |
| SM0423.S  | M7533.D | M8399-P(2)    | SA    | CI5(96) | 14510531 |       |
| SM0423.S  | M7540.D | IE07          | CCV   | CI5(96) | 17750585 |       |
| SM0423.S  | M7545.D | M8378-P-D(4)  | SA    | CI5(96) | 15073272 |       |
| SM0423.S  | M7550.D | M8395-P-D(4)  | SA    | CI5(96) | 14412344 |       |
| SM0423.S  | M7551.D | IE07          | CCV   | CI5(96) | 17017851 |       |
| SM0423.S  | M7553.D | M8397-P-D(4)  | SA    | CI5(96) | 15072112 |       |
| SM0423.S  | M7554.D | M8398-P-D(4)  | SA    | CI5(96) | 15898942 |       |
| SM0423.S  | M7562.D | IE08          | CCV   | CI5(96) | 19215719 |       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE PREPARATION RECORDS

|   |                              |
|---|------------------------------|
| <b><u>Project Title(s)</u></b>                | <b><u>Project No.(s)</u></b> |
| USACE/NAE - New Bedford Harbor LTM Study      | 100053747                    |
| <b>14-0496</b>                                |                              |
| <b>USACE-NAE New Bedford Harbor LTM Study</b> |                              |
| <b>SED</b>                                    |                              |
| SOP Numbers (see workplan for modifications)  |                              |
| ExtractionSOP No.                             | 5-192                        |
| CleanupSOP No.                                | 5-327                        |
| CleanupSOP No.                                | 5-328                        |

| This Batch Contains The Following Samples: |            |           |            |         |
|--|------------|-----------|------------|---------|
| CD586PB-P                                  | M8173-P    | M8377-P   | M8390MSD-P | M8399-P |
| CD587LCS-P                                 | M8173DUP-P | M8378-P   | M8391-P    |         |
| M8157-P                                    | M8174-P    | M8379-P   | M8395-P    |         |
| M8169-P                                    | M8374-P    | M8389-P   | M8396-P    |         |
| M8171-P                                    | M8375-P    | M8390-P   | M8397-P    |         |
| M8172-P                                    | M8376-P    | M8390MS-P | M8398-P    |         |

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Samuel Guimaraes

| Approved By:     | Date       | Initials |
|------------------|------------|----------|
| Samuel Guimaraes | 11/06/2014 | SG       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|   |  |
|---|--|
| <b>Requested On/By:</b> 10/20/2014 SG         | <b>Purpose:</b> Sample Preparation       |
| <b>Relinquished On/By:</b> 10/20/2014 MDS     | <b>Last Activity:</b> Return             |
| <b>Accepted On/By:</b> 10/20/2014 SG          | <b>Returned On/To:</b> 10/20/2014 MDS    |
| <b>Stored In Facility:</b> Sample Preparation | <b>Returned To Facility:</b> Custody: NA |
| <b>Stored Until:</b> 10/20/2014               |  |
| <b>Stored Comment:</b> NA                     | <b>Returned Comment:</b> NA              |

| No.                  | BDO-ID: | Ctrs | *  | Condition:                 | Custody Comment: |
|----------------------|---------|------|----|----------------------------|------------------|
| 1                    | M8157   | 1    | -- | Intact                     | NA               |
| 2                    | M8169   | 1    | -- | Intact                     | NA               |
| 3                    | M8171   | 1    | -- | Intact                     | NA               |
| 4                    | M8172   | 1    | -- | Intact                     | NA               |
| 5                    | M8173   | 1    | -- | Intact                     | NA               |
| 6                    | M8174   | 1    | -- | Intact                     | NA               |
| 7                    | M8374   | 1    | -- | Intact                     | NA               |
| 8                    | M8375   | 1    | -- | Intact                     | NA               |
| 9                    | M8376   | 1    | -- | Intact                     | NA               |
| 10                   | M8377   | 1    | -- | Intact                     | NA               |
| 11                   | M8378   | 1    | -- | Intact                     | NA               |
| 12                   | M8379   | 1    | -- | Intact                     | NA               |
| 13                   | M8389   | 1    | -- | Intact                     | NA               |
| 14                   | M8390   | 1    | -- | Intact                     | NA               |
| 15                   | M8391   | 1    | -- | Intact                     | NA               |
| 16                   | M8395   | 1    | -- | Intact                     | NA               |
| 17                   | M8396   | 1    | -- | Intact                     | NA               |
| 18                   | M8397   | 1    | -- | Intact                     | NA               |
| 19                   | M8398   | 1    | -- | Intact                     | NA               |
| 20                   | M8399   | 1    | -- | Intact                     | NA               |
| <b>Total Samples</b> |         | 20   |    | * "C" = Consumed Container |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE IDENTIFICATION PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Description                          |
|------------|--------------------------------------|
| CD586PB-P  | Procedural Blank                     |
| CD587LCS-P | Laboratory Control Sample            |
| M8157-P    | NBH14-0021                           |
| M8169-P    | NBH14-0077                           |
| M8171-P    | NBH14-0085                           |
| M8172-P    | NBH14-0089                           |
| M8173-P    | NBH14-0093                           |
| M8173DUP-P | Lab Duplicate of NBH14-0093          |
| M8174-P    | NBH14-0097                           |
| M8374-P    | NBH14-0269                           |
| M8375-P    | NBH14-0273                           |
| M8376-P    | NBH14-0277                           |
| M8377-P    | NBH14-0281                           |
| M8378-P    | NBH14-0285                           |
| M8379-P    | NBH14-0289                           |
| M8389-P    | NBH14-0109                           |
| M8390-P    | NBH14-0113                           |
| M8390MS-P  | Matrix Spike of NBH14-0113           |
| M8390MSD-P | Matrix Spike Duplicate of NBH14-0113 |
| M8391-P    | NBH14-0117                           |
| M8395-P    | NBH14-0133                           |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

**BATTELLE - DUXBURY OPERATIONS  
SAMPLE IDENTIFICATION PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study  
SED**

| <b>Sample ID</b> | <b>Description</b> |
|------------------|--------------------|
| M8396-P          | NBH14-0137         |
| M8397-P          | NBH14-0141         |
| M8398-P          | NBH14-0145         |
| M8399-P          | NBH14-0149         |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD586PB-P  | NA    | -- | NA           | NA              | NA          | 9.96               | 98.30     | 1.70       | 9.79               |
| CD587LCS-P | NA    | -- | NA           | NA              | NA          | 10.01              | 98.30     | 1.70       | 9.84               |
| M8157-P    | 1     | -- | 1.11         | 2.91            | 2.85        | 2.50               | 96.67     | 3.33       | 2.42               |
| M8169-P    | 1     | -- | 1.12         | 2.97            | 2.94        | 10.10              | 98.38     | 1.62       | 9.94               |
| M8171-P    | 1     | -- | 1.11         | 3.09            | 3.05        | 10.06              | 97.98     | 2.02       | 9.86               |
| M8172-P    | 1     | -- | 1.11         | 3.01            | 2.99        | 10.07              | 98.95     | 1.05       | 9.96               |
| M8173-P    | 1     | -- | 1.09         | 3.06            | 3.04        | 9.99               | 98.98     | 1.02       | 9.89               |
| M8173DUP-P | 1     | -- | 1.11         | 2.99            | 2.97        | 10.19              | 98.94     | 1.06       | 10.08              |
| M8174-P    | 1     | -- | 1.11         | 2.96            | 2.92        | 10.05              | 97.84     | 2.16       | 9.83               |
| M8374-P    | 1     | -- | 1.11         | 3.06            | 3.04        | 10.09              | 98.97     | 1.03       | 9.99               |
| M8375-P    | 1     | -- | 1.10         | 3.03            | 3.01        | 10.00              | 98.96     | 1.04       | 9.90               |
| M8376-P    | 1     | -- | 1.10         | 2.89            | 2.81        | 10.00              | 95.53     | 4.47       | 9.55               |
| M8377-P    | 1     | -- | 1.11         | 2.97            | 2.94        | 10.12              | 98.39     | 1.61       | 9.96               |
| M8378-P    | 1     | -- | 1.10         | 3.03            | 2.96        | 9.98               | 96.37     | 3.63       | 9.62               |
| M8379-P    | 1     | -- | 1.10         | 3.04            | 3.03        | 10.00              | 99.48     | 0.52       | 9.95               |
| M8389-P    | 1     | -- | 1.10         | 3.03            | 2.94        | 10.01              | 95.34     | 4.66       | 9.54               |
| M8390-P    | 1     | -- | 1.11         | 3.06            | 3.06        | 10.06              | 100.00    | 0.00       | 10.06              |
| M8390MS-P  | 1     | -- | 1.12         | 3.01            | 3.00        | 5.03               | 99.47     | 0.53       | 5.00               |
| M8390MSD-P | 1     | -- | 1.09         | 2.98            | 2.98        | 5.14               | 100.00    | 0.00       | 5.14               |
| M8391-P    | 1     | -- | 1.09         | 2.98            | 2.98        | 10.07              | 100.00    | 0.00       | 10.07              |
| M8395-P    | 1     | -- | 1.11         | 2.92            | 2.90        | 10.01              | 98.90     | 1.10       | 9.90               |
| M8396-P    | 1     | -- | 1.11         | 3.05            | 2.98        | 10.03              | 96.39     | 3.61       | 9.67               |
| M8397-P    | 1     | -- | 1.10         | 2.98            | 2.98        | 10.05              | 100.00    | 0.00       | 10.05              |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| M8398-P    | 1     | -- | 1.09         | 3.02            | 3.01        | 10.01              | 99.48     | 0.52       | 9.96               |
| M8399-P    | 1     | -- | 1.10         | 3.02            | 3.01        | 2.53               | 99.48     | 0.52       | 2.52               |

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>Validation of:</b><br>Wet Wt. | <b>Performed:</b><br>11/06/14 SG |
|----------------------------------|----------------------------------|

| Sample ID: | Comments:   | Reference: |
|------------|---|------------|
| CD586PB-P  | Average of percent dry weights from authentic samples in Batch No. 14-0496 USACE-NAE New Bedford Harbor LTM Study | NA         |
| CD587LCS-P | Average of percent dry weights from authentic samples in Batch No. 14-0496 USACE-NAE New Bedford Harbor LTM Study | NA         |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| CD586PB-P  | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| CD587LCS-P | HX10        | LCS/MS | 8        | 75             | 10/31/14 SG               | KAW       | NA      |
| CD587LCS-P | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8157-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8169-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8171-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8172-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8173-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8173DUP-P | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8174-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8374-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8375-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8376-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8377-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8378-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8379-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8389-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8390-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8390MS-P  | HX10        | LCS/MS | 8        | 125            | 10/31/14 SG               | KAW       | NA      |
| M8390MS-P  | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8390MSD-P | HX10        | LCS/MS | 8        | 125            | 10/31/14 SG               | KAW       | NA      |
| M8390MSD-P | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8391-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8395-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8396-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8397-P    | ID59        | SIS    | 4        | 400            | 10/31/14 SG               | KAW       | NA      |



## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | Standard ID | Type | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|-----------|-------------|------|----------|----------------|---------------------------|-----------|---------|
| M8398-P   | ID59        | SIS  | 4        | 400            | 10/31/14 SG               | KAW       | NA      |
| M8399-P   | ID59        | SIS  | 4        | 400            | 10/31/14 SG               | KAW       | NA      |

Syringes/Pipettes Used:

| Std ID | Type    | Syr/Pip   |
|--------|---------|-----------|
| HX10   | Pipette | G0400231B |
| ID59   | Pipette | B1100330B |



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**BATTELLE - DUXBURY OPERATIONS  
SAMPLE EXTRACTION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID  | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|------------|------------------|-------------------|------------------|----------|-----------|-------|---------|
| CD586PB-P  | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| CD587LCS-P | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8157-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8169-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8171-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8172-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8173-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8173DUP-P | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8174-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8374-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8375-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8376-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8377-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8378-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8379-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8389-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8390-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8390MS-P  | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8390MSD-P | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8391-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8395-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8396-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8397-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8398-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |
| M8399-P    | 10/31/14 KAW     | 10/31/14 KAW      | 10/31/14 SG      | NA       | NA        | NA    | NA      |

## BATTELLE - DUXBURY OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|

**Reagents:**

| Name           | Expires  | Lot No     | Procedure  | Comments |
|----------------|----------|------------|--|----------|
| Sodium Sulfate | 11/10/14 | 0000084928 | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |

**Solvents:**

| Name            | Lot No     | Comments                                |
|-----------------|------------|---|
| DCM cycletainer | 0000093995 |   |
| Hexane          | 0000078260 | Solvent exchanged during concentration. |



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**BATTELLE - DUXBURY OPERATIONS  
EXTRACT CLEANUP FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| CD586PB-P(0)  | 11/04/14 | SG    | NA       |
| CD587LCS-P(0) | 11/04/14 | SG    | NA       |
| M8157-P(0)    | 11/04/14 | SG    | NA       |
| M8169-P(0)    | 11/04/14 | SG    | NA       |
| M8172-P(0)    | 11/04/14 | SG    | NA       |
| M8173-P(0)    | 11/04/14 | SG    | NA       |
| M8173DUP-P(0) | 11/04/14 | SG    | NA       |
| M8174-P(0)    | 11/04/14 | SG    | NA       |
| M8374-P(0)    | 11/04/14 | SG    | NA       |
| M8375-P(0)    | 11/04/14 | SG    | NA       |
| M8376-P(0)    | 11/04/14 | SG    | NA       |
| M8377-P(0)    | 11/04/14 | SG    | NA       |
| M8378-P(0)    | 11/04/14 | SG    | NA       |
| M8379-P(0)    | 11/04/14 | SG    | NA       |
| M8389-P(0)    | 11/04/14 | SG    | NA       |
| M8390-P(0)    | 11/04/14 | SG    | NA       |
| M8390MS-P(0)  | 11/04/14 | SG    | NA       |
| M8390MSD-P(0) | 11/04/14 | SG    | NA       |

## BATTELLE - DUXBURY OPERATIONS EXTRACT CLEANUP FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id | Date     | Init. | Comments |
|------------|----------|-------|----------|
| M8391-P(0) | 11/04/14 | SG    | NA       |
| M8395-P(0) | 11/04/14 | SG    | NA       |
| M8396-P(0) | 11/04/14 | SG    | NA       |
| M8397-P(0) | 11/04/14 | SG    | NA       |
| M8398-P(0) | 11/04/14 | SG    | NA       |
| M8399-P(0) | 11/04/14 | SG    | NA       |

**Cleanup:**

Copper Cleanup

**Reagents:**

| Name                         | Expires  | Lot No    | Procedure                                  |
|------------------------------|----------|-----------|--|
| Copper, granular, 10-40 mesh | 10/22/19 | MKBT0084V | NA   |
| Activated Copper             | 11/05/14 | MKBT0084V | Activated according to Cleanup SOP (5-328) |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| CD586PB-P(0)  | 11/03/14 | SG    | NA                       |
| CD587LCS-P(0) | 11/03/14 | SG    | NA                       |
| M8157-P(0)    | 11/03/14 | SG    | NA                       |
| M8169-P(0)    | 11/03/14 | SG    | NA                       |
| M8171-P(0)    | 11/03/14 | SG    | NA                       |
| M8172-P(0)    | 11/03/14 | SG    | NA                       |
| M8173-P(0)    | 11/03/14 | SG    | NA                       |
| M8173DUP-P(0) | 11/03/14 | SG    | NA                       |
| M8174-P(0)    | 11/03/14 | SG    | NA                       |
| M8374-P(0)    | 11/03/14 | SG    | NA                       |
| M8375-P(0)    | 11/03/14 | SG    | NA                       |
| M8376-P(0)    | 11/03/14 | SG    | NA                       |
| M8377-P(0)    | 11/03/14 | SG    | NA                       |
| M8378-P(0)    | 11/03/14 | SG    | NA                       |
| M8379-P(0)    | 11/03/14 | SG    | NA                       |
| M8389-P(0)    | 11/03/14 | SG    | NA                       |
| M8390-P(0)    | 11/03/14 | SG    | NA                       |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| M8390MS-P(0)  | 11/03/14 | SG    | NA                       |
| M8390MSD-P(0) | 11/03/14 | SG    | NA                       |
| M8391-P(0)    | 11/03/14 | SG    | NA                       |
| M8395-P(0)    | 11/03/14 | SG    | NA                       |
| M8396-P(0)    | 11/03/14 | SG    | NA                       |
| M8397-P(0)    | 11/03/14 | SG    | NA                       |
| M8398-P(0)    | 11/03/14 | SG    | NA                       |
| M8399-P(0)    | 11/03/14 | SG    | NA                       |

**Column Diameter:** 13 mm **Procedure Comment:**

**Elution Volume:** 15 mL

**Solvents**

| Name   | Lot No     |
|--------|------------|
| Hexane | 0000078260 |

**Reagents**

| Weight g | Name     | Expires  | Lot No         | Procedure  |
|----------|----------|----------|----------------|--|
| 1.00     | Florisil | 11/05/14 | 801139-1991484 | Baked at 110 °C for more than 24 hours (SPE columns not baked) |

**Fractions**



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| CD586PB-P  | 0 | -- | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| CD587LCS-P | 0 | -- | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8157-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8157-P    | 2 | -- | 11/5/2014 11:21:00 AM  | M8157-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8157-P-D  | 3 | C  | 11/5/2014 11:21:00 AM  | M8157-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8157-P-D  | 4 | -- | 11/5/2014 11:38:00 AM  | M8157-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8157-P-D  | 5 | -- | 11/5/2014 11:38:00 AM  | M8157-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8169-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8169-P    | 2 | -- | 11/5/2014 11:21:00 AM  | M8169-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8169-P-D  | 3 | C  | 11/5/2014 11:21:00 AM  | M8169-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8169-P-D  | 4 | -- | 11/5/2014 11:38:00 AM  | M8169-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8169-P-D  | 5 | -- | 11/5/2014 11:38:00 AM  | M8169-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8171-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8172-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract      |   | *  | Extract Date           | Source       |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|--------------|---|----|------------------------|--------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name         | # |    |                        | Name         | # |                          |               |               |                |               |
| M8172-P      | 2 | -- | 11/5/2014 11:21:00 AM  | M8172-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8172-P-D    | 3 | C  | 11/5/2014 11:21:00 AM  | M8172-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8172-P-D    | 4 | -- | 11/5/2014 11:38:00 AM  | M8172-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8172-P-D    | 5 | -- | 11/5/2014 11:38:00 AM  | M8172-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8173-P      | 0 | C  | 10/31/2014 10:36:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8173-P      | 2 | -- | 11/5/2014 11:21:00 AM  | M8173-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8173-P-D    | 3 | C  | 11/5/2014 11:21:00 AM  | M8173-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8173-P-D    | 4 | -- | 11/5/2014 11:38:00 AM  | M8173-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8173-P-D    | 5 | -- | 11/5/2014 11:38:00 AM  | M8173-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8173DUP-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8173DUP-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8173DUP-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8173DUP-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8173DUP-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8173DUP-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8173DUP-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8173DUP-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8173DUP-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8174-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8174-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8174-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8174-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8174-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8174-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8174-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8174-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8174-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8374-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8374-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8374-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8374-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8374-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8374-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8374-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8374-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8374-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8375-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8375-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8375-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8375-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8375-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8375-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8375-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8375-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8375-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8376-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8376-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8376-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8376-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8376-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8376-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8376-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8376-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8376-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8377-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8377-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8377-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8377-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8377-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8377-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8377-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8377-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8377-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8378-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8378-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8378-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8378-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8378-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8378-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8378-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8378-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8378-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8379-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8379-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8379-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8379-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8379-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8379-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8379-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8379-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8379-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8389-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8389-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8389-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8389-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8389-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8389-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8389-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8389-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8389-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8390-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8390-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8390-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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## BATTELLE - DUXBURY OPERATIONS PREPARATION EXTRACT SPLIT FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract    |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                        | Name      | # |                          |               |               |                |               |
| M8390-P-D  | 3 | C  | 11/5/2014 11:21:00 AM  | M8390-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8390-P-D  | 4 | -- | 11/5/2014 11:38:00 AM  | M8390-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8390-P-D  | 5 | -- | 11/5/2014 11:38:00 AM  | M8390-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8390MS-P  | 0 | -- | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8390MSD-P | 0 | -- | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8391-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8391-P    | 2 | -- | 11/5/2014 11:21:00 AM  | M8391-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8391-P-D  | 3 | C  | 11/5/2014 11:21:00 AM  | M8391-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8391-P-D  | 4 | -- | 11/5/2014 11:38:00 AM  | M8391-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8391-P-D  | 5 | -- | 11/5/2014 11:38:00 AM  | M8391-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8395-P    | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8395-P    | 2 | -- | 11/5/2014 11:21:00 AM  | M8395-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8395-P-D  | 3 | C  | 11/5/2014 11:21:00 AM  | M8395-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8395-P-D  | 4 | -- | 11/5/2014 11:38:00 AM  | M8395-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8395-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8395-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8396-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8396-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8396-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8396-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8396-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8396-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8396-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8396-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8396-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8397-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8397-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8397-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8397-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8397-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8397-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8397-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8397-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8397-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8398-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8398-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8398-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8398-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8398-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



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BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Extract   |   | *  | Extract Date           | Source    |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|-----------|---|----|------------------------|-----------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name      | # |    |                        | Name      | # |                          |               |               |                |               |
| M8398-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8398-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8398-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8398-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |
| M8399-P   | 0 | C  | 10/31/2014 10:36:00 AM | NA        |   | NA                       | NA            | 1.000         | 1.000          | 10/31/14 KAW  |
| M8399-P   | 2 | -- | 11/5/2014 11:21:00 AM  | M8399-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/05/14 SG   |
| M8399-P-D | 3 | C  | 11/5/2014 11:21:00 AM  | M8399-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/05/14 SG   |
| M8399-P-D | 4 | -- | 11/5/2014 11:38:00 AM  | M8399-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/05/14 SG   |
| M8399-P-D | 5 | -- | 11/5/2014 11:38:00 AM  | M8399-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/05/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| CD586PB-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| CD587LCS-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8157-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8157-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8157-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8169-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8169-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8169-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8172-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8172-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8172-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8173-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8173-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8173-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8173DUP-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8173DUP-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8173DUP-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8174-P(0)      | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8174-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| M8174-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8374-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8374-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8374-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8375-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8375-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8375-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8376-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8376-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8376-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8377-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8377-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8377-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8378-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8378-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8378-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8379-P(0)   | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8379-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8379-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| M8389-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8389-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8389-P-D(5)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8390-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8390-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8390-P-D(5)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8390MS-P(0)  | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8390MSD-P(0) | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8391-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8391-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8391-P-D(5)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8395-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8395-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8395-P-D(5)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8396-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8396-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |
| M8396-P-D(5)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/05/14 SG            | JCT       |
| M8397-P(0)    | 900             | 100        | IE11    | 100        | 1        | 1000                | 1.000           | 11/05/14 SG            | JCT       |
| M8397-P-D(3)  | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/05/14 SG            | JCT       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

**(N/A Fraction)**

| Extract Id   | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|--------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8397-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/05/14 SG            | JCT       |
| M8398-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 11/05/14 SG            | JCT       |
| M8398-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 11/05/14 SG            | JCT       |
| M8398-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/05/14 SG            | JCT       |
| M8399-P(0)   | 900             | 100        | IE11    | 100         | 1        | 1000                | 1.000            | 11/05/14 SG            | JCT       |
| M8399-P-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 11/05/14 SG            | JCT       |
| M8399-P-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/05/14 SG            | JCT       |

Syringes/Pipettes Used:

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



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**BATTELLE - DUXBURY OPERATIONS  
SAMPLE SPECIFIC COMMENTS**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

| Sample ID: | Comment:   | Date/Initials: |
|------------|--|----------------|
| CD586PB-P  | NA   | NA             |
| CD587LCS-P | NA   | NA             |
| M8157-P    | NA   | NA             |
| M8169-P    | NA   | NA             |
| M8171-P    | During Florisil columns, the sample did not elute into the 40 mL vial. Per order of project manager, the sample will added to batch 14-0497 and caught out with the rest of the batch. | 11/03/14 SG    |
| M8172-P    | NA   | NA             |
| M8173-P    | NA   | NA             |
| M8173DUP-P | NA   | NA             |
| M8174-P    | NA   | NA             |
| M8374-P    | NA   | NA             |
| M8375-P    | NA   | NA             |
| M8376-P    | NA   | NA             |
| M8377-P    | NA   | NA             |
| M8378-P    | NA   | NA             |
| M8379-P    | NA   | NA             |
| M8389-P    | NA   | NA             |
| M8390-P    | NA   | NA             |
| M8390MS-P  | NA   | NA             |
| M8390MSD-P | NA   | NA             |
| M8391-P    | NA   | NA             |
| M8395-P    | NA   | NA             |
| M8396-P    | NA   | NA             |
| M8397-P    | NA   | NA             |
| M8398-P    | NA   | NA             |
| M8399-P    | NA   | NA             |



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BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|                            |                        |                           |                      |
|----------------------------|------------------------|---------------------------|----------------------|
| <b>Purpose:</b>            | GC/ECD TRANSFER        | <b>Last Activity:</b>     | Prep->Inst           |
| <b>Relinquished On/By:</b> | Nov 5 2014 2:03PM SG   | <b>Received On/By:</b>    | Nov 5 2014 2:03PM RR |
| <b>Relinquished From:</b>  | Sample Preparation: NA | <b>Received Location:</b> | GC Laboratory: NA    |
| <b>Relinquish Comment:</b> | NA                     | <b>Received Comment:</b>  | NA                   |

| No. | BDO-ID:         | PIV: | DF:    | Condition: | Custody Comment: |
|-----|-----------------|------|--------|------------|------------------|
| 1   | CD586PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 2   | CD587LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 3   | M8157-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 4   | M8157-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 5   | M8157-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 6   | M8169-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 7   | M8169-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 8   | M8169-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 9   | M8172-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 10  | M8172-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 11  | M8172-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 12  | M8173-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 13  | M8173-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 14  | M8173-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 15  | M8173DUP-P(2)   | 1000 | 1.053  | Intact     | NA               |
| 16  | M8173DUP-P-D(4) | 1000 | 21.053 | Intact     | NA               |
| 17  | M8173DUP-P-D(5) | 1000 | 400    | Intact     | NA               |
| 18  | M8174-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 19  | M8174-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 20  | M8174-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 21  | M8374-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 22  | M8374-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 23  | M8374-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 24  | M8375-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 25  | M8375-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 26  | M8375-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 27  | M8376-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 28  | M8376-P-D(4)    | 1000 | 21.053 | Intact     | NA               |



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

|    |               |      |        |        |    |
|----|---------------|------|--------|--------|----|
| 29 | M8376-P-D(5)  | 1000 | 400    | Intact | NA |
| 30 | M8377-P(2)    | 1000 | 1.053  | Intact | NA |
| 31 | M8377-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 32 | M8377-P-D(5)  | 1000 | 400    | Intact | NA |
| 33 | M8378-P(2)    | 1000 | 1.053  | Intact | NA |
| 34 | M8378-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 35 | M8378-P-D(5)  | 1000 | 400    | Intact | NA |
| 36 | M8379-P(2)    | 1000 | 1.053  | Intact | NA |
| 37 | M8379-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 38 | M8379-P-D(5)  | 1000 | 400    | Intact | NA |
| 39 | M8389-P(2)    | 1000 | 1.053  | Intact | NA |
| 40 | M8389-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 41 | M8389-P-D(5)  | 1000 | 400    | Intact | NA |
| 42 | M8390-P(2)    | 1000 | 1.053  | Intact | NA |
| 43 | M8390-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 44 | M8390-P-D(5)  | 1000 | 400    | Intact | NA |
| 45 | M8390MS-P(0)  | 1000 | 1      | Intact | NA |
| 46 | M8390MSD-P(0) | 1000 | 1      | Intact | NA |
| 47 | M8391-P(2)    | 1000 | 1.053  | Intact | NA |
| 48 | M8391-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 49 | M8391-P-D(5)  | 1000 | 400    | Intact | NA |
| 50 | M8395-P(2)    | 1000 | 1.053  | Intact | NA |
| 51 | M8395-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 52 | M8395-P-D(5)  | 1000 | 400    | Intact | NA |
| 53 | M8396-P(2)    | 1000 | 1.053  | Intact | NA |
| 54 | M8396-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 55 | M8396-P-D(5)  | 1000 | 400    | Intact | NA |
| 56 | M8397-P(2)    | 1000 | 1.053  | Intact | NA |
| 57 | M8397-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 58 | M8397-P-D(5)  | 1000 | 400    | Intact | NA |
| 59 | M8398-P(2)    | 1000 | 1.053  | Intact | NA |
| 60 | M8398-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 61 | M8398-P-D(5)  | 1000 | 400    | Intact | NA |
| 62 | M8399-P(2)    | 1000 | 1.053  | Intact | NA |
| 63 | M8399-P-D(4)  | 1000 | 21.053 | Intact | NA |
| 64 | M8399-P-D(5)  | 1000 | 400    | Intact | NA |

**Total Extracts:** 64

**BATTELLE - DUXBURY OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0496**

**USACE-NAE New Bedford Harbor LTM Study**

**SED**

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Entered By:

On:

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Task Leader Approval:

On:

Supervisor Approval:

On:

PM Approval:

On:

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## INJECTION LOG

Directory I:\M\DATA\SM0417\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous             | Injected                       |
|-----|-----|---------|-----------------|---------------------------|--------------------------------|
| 1   | 1   | M7203.D | HEXANE          |                           | 10-20-2014 05:18 PM            |
| 2   | 2   | M7204.D | HF94            |                           | 10-20-2014 06:02 PM            |
| 3   | 3   | M7205.D | IE03            |                           | 10-20-2014 06:46 PM            |
| 4   | 4   | M7206.D | IE04            | Level not used.           | <del>10-20-2014 07:31 PM</del> |
| 5   | 5   | M7207.D | IE05            |                           | 10-20-2014 08:16 PM            |
| 6   | 6   | M7208.D | IE06            | RR 11/18/14               | 10-20-2014 09:00 PM            |
| 7   | 7   | M7209.D | IE07            |                           | 10-20-2014 09:45 PM            |
| 8   | 8   | M7210.D | IE08            |                           | 10-20-2014 10:29 PM            |
| 9   | 9   | M7211.D | IE09            | Level not used.           | <del>10-20-2014 11:14 PM</del> |
| 10  | 10  | M7212.D | IE10            |                           | 10-20-2014 11:58 PM            |
| 11  | 11  | M7213.D | HY06 ICC        |                           | 10-21-2014 12:43 AM            |
| 12  | 12  | M7214.D | HF94            |                           | 10-21-2014 01:28 AM            |
| 13  | 13  | M7215.D | IE08 mid        |                           | 10-21-2014 02:12 AM            |
| 14  | 14  | M7216.D | CD598PB-P(3)    | Procedural Blank 5-128 14 | 10-21-2014 02:57 AM            |
| 15  | 15  | M7217.D | CD599LCS-P(5)   | Laboratory Control Sample | 10-21-2014 03:42 AM            |
| 16  | 16  | M7218.D | CD600SRM-P(5)   | Standard Reference Materi | 10-21-2014 04:26 AM            |
| 17  | 17  | M7219.D | M7754-P(5)      | B537PreMnA 5-128 14-0498  | 10-21-2014 05:11 AM            |
| 18  | 18  | M7220.D | M7755-P(5)      | B537PreMnB 5-128 14-0498  | 10-21-2014 05:55 AM            |
| 19  | 19  | M7221.D | M7756-P(5)      | B537PreMnC 5-128 14-0498  | 10-21-2014 06:40 AM            |
| 20  | 20  | M7222.D | M7756MS-P(5)    | Matrix Spike of B537PreMn | 10-21-2014 07:25 AM            |
| 21  | 21  | M7223.D | M7756MSD-P(5)   | Matrix Spike Duplicate of | 10-21-2014 08:09 AM            |
| 22  | 22  | M7224.D | M7757-P(5)      | B537R01MnA 5-128 14-0498  | 10-21-2014 08:54 AM            |
| 23  | 23  | M7225.D | M7758-P(5)      | B537R01MnB 5-128 14-0498  | 10-21-2014 09:38 AM            |
| 24  | 24  | M7226.D | HF94            |                           | 10-21-2014 10:22 AM            |
| 25  | 25  | M7227.D | IE08 mid        |                           | 10-21-2014 11:07 AM            |
| 26  | 26  | M7228.D | M7759-P(5)      | B537R01MnC 5-128 14-0498  | 10-21-2014 11:52 AM            |
| 27  | 27  | M7229.D | M7760-P(5)      | B537R01MnD 5-128 14-0498  | 10-21-2014 12:36 PM            |
| 28  | 28  | M7230.D | M7761-P(5)      | B537R01MnE 5-128 14-0498  | 10-21-2014 01:21 PM            |
| 29  | 29  | M7231.D | M7762-P(5)      | B537S01MnA 5-128 14-0498  | 10-21-2014 02:05 PM            |
| 30  | 30  | M7232.D | M7763-P(5)      | B537S01MnB 5-128 14-0498  | 10-21-2014 02:50 PM            |
| 31  | 31  | M7233.D | M7764-P(5)      | B537S01MnC 5-128 14-0498  | 10-21-2014 03:35 PM            |
| 32  | 32  | M7234.D | M7765-P(5)      | B537S01MnD 5-128 14-0498  | 10-21-2014 04:19 PM            |
| 33  | 33  | M7235.D | M7766-P(5)      | B537S01MnE 5-128 14-0498  | 10-21-2014 05:04 PM            |
| 34  | 34  | M7236.D | M7767-P(5)      | B537S02MnA 5-128 14-0498  | 10-21-2014 05:48 PM            |
| 35  | 35  | M7237.D | M7768-P(5)      | B537S02MnB 5-128 14-0498  | 10-21-2014 06:33 PM            |
| 36  | 36  | M7238.D | HF94            |                           | 10-21-2014 07:17 PM            |
| 37  | 37  | M7239.D | IE07 mid        |                           | 10-21-2014 08:02 PM            |
| 38  | 38  | M7240.D | M7768DUP-P(5)   | Lab Duplicate of B537S02M | 10-21-2014 08:46 PM            |
| 39  | 39  | M7241.D | M7769-P(5)      | B537S02MnC 5-128 14-0498  | 10-21-2014 09:31 PM            |
| 40  | 40  | M7242.D | M7770-P(5)      | B537S02MnD 5-128 14-0498  | 10-21-2014 10:16 PM            |
| 41  | 41  | M7243.D | M7771-P(5)      | B537S02MnE 5-128 14-0498  | 10-21-2014 11:00 PM            |
| 42  | 42  | M7244.D | CD669PB-P(0)    | Procedural Blank 5-128 14 | 10-21-2014 11:45 PM            |
| 43  | 43  | M7245.D | CD670LCS-P(0)   | Laboratory Control Sample | 10-22-2014 12:29 AM            |
| 44  | 44  | M7246.D | CD671LCS-D-P(0) | Laboratory Control Sample | 10-22-2014 01:14 AM            |
| 45  | 45  | M7247.D | M8926-P(0)      | FLD20141014OSHCO-7-14-7E  | 10-22-2014 01:58 AM            |
| 46  | 46  | M7248.D | M8928-P(0)      | FSW20141014OSHCO-7-14-1 5 | 10-22-2014 02:43 AM            |
| 47  | 47  | M7249.D | HF94            |                           | 10-22-2014 03:28 AM            |
| 48  | 48  | M7250.D | IE07 mid        |                           | 10-22-2014 04:12 AM            |



INJECTION LOG

Directory I:\M\DATA\SM0423\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous                            | Injected           |
|-----|-----|---------|-----------------|--|--------------------|
| 1   | 1   | M7506.D | HEXANE          |  | 11-7-2014 04:27 PM |
| 2   | 2   | M7507.D | IE07 mid        |  | 11-7-2014 05:12 PM |
| 3   | 3   | M7508.D | CD586PB-P(0)    | Procedural Blank 5-128 14                | 11-7-2014 05:56 PM |
| 4   | 4   | M7509.D | CD587LCS-P(0)   | Laboratory Control Sample                | 11-7-2014 06:40 PM |
| 5   | 5   | M7510.D | M8157-P(2)      | NBH14-0021 5-128 14-0496                 | 11-7-2014 07:25 PM |
| 6   | 6   | M7511.D | M8169-P(2)      | NBH14-0077 5-128 14-0496                 | 11-7-2014 08:09 PM |
| 7   | 7   | M7512.D | M8172-P(2)      | NBH14-0089 5-128 14-0496                 | 11-7-2014 08:54 PM |
| 8   | 8   | M7513.D | M8173-P(2)      | NBH14-0093 5-128 14-0496                 | 11-7-2014 09:39 PM |
| 9   | 9   | M7514.D | M8173DUP-P(2)   | Lab Duplicate of NBH14-00                | 11-7-2014 10:24 PM |
| 10  | 10  | M7515.D | M8174-P(2)      | NBH14-0097 5-128 14-0496                 | 11-7-2014 11:09 PM |
| 11  | 11  | M7516.D | M8374-P(2)      | NBH14-0269 5-128 14-0496                 | 11-7-2014 11:54 PM |
| 12  | 12  | M7517.D | M8375-P(2)      | NBH14-0273 5-128 14-0496                 | 11-8-2014 12:38 AM |
| 13  | 13  | M7518.D | IE08 mid        |  | 11-8-2014 01:23 AM |
| 14  | 14  | M7519.D | M8376-P(2)      | NBH14-0277 5-128 14-0496                 | 11-8-2014 02:08 AM |
| 15  | 15  | M7520.D | M8377-P(2)      | NBH14-0281 5-128 14-0496                 | 11-8-2014 02:53 AM |
| 16  | 16  | M7521.D | M8378-P(2)      | NBH14-0285 5-128 14-0496                 | 11-8-2014 03:37 AM |
| 17  | 17  | M7522.D | M8379-P(2)      | NBH14-0289 5-128 14-0496                 | 11-8-2014 04:22 AM |
| 18  | 18  | M7523.D | M8389-P(2)      | NBH14-0109 5-128 14-0496                 | 11-8-2014 05:07 AM |
| 19  | 19  | M7524.D | M8390-P(2)      | NBH14-0113 5-128 14-0496                 | 11-8-2014 05:51 AM |
| 20  | 20  | M7525.D | M8390MS-P(0)    | Matrix Spike of NBH14-011                | 11-8-2014 06:36 AM |
| 21  | 21  | M7526.D | M8390MSD-P(0)   | Matrix Spike Duplicate of                | 11-8-2014 07:21 AM |
| 22  | 22  | M7527.D | M8391-P(2)      | NBH14-0117 5-128 14-0496                 | 11-8-2014 08:05 AM |
| 23  | 23  | M7528.D | M8395-P(2)      | NBH14-0133 5-128 14-0496                 | 11-8-2014 08:50 AM |
| 24  | 24  | M7529.D | IE08 mid        |  | 11-8-2014 09:35 AM |
| 25  | 25  | M7530.D | M8396-P(2)      | NBH14-0137 5-128 14-0496                 | 11-8-2014 10:20 AM |
| 26  | 26  | M7531.D | M8397-P(2)      | NBH14-0141 5-128 14-0496                 | 11-8-2014 11:05 AM |
| 27  | 27  | M7532.D | M8398-P(2)      | NBH14-0145 5-128 14-0496                 | 11-8-2014 11:49 AM |
| 28  | 28  | M7533.D | M8399-P(2)      | NBH14-0149 5-128 14-0496                 | 11-8-2014 12:34 PM |
| 29  | 29  | M7534.D | M8157-P-D(4)    | NBH14-0021 5-128 14-0496                 | 11-8-2014 01:19 PM |
| 30  | 30  | M7535.D | M8169-P-D(4)    | NBH14-0077 5-128 14-0496                 | 11-8-2014 02:03 PM |
| 31  | 31  | M7536.D | M8172-P-D(4)    | NBH14-0089 5-128 14-0496                 | 11-8-2014 02:47 PM |
| 32  | 32  | M7537.D | M8173-P-D(4)    | NBH14-0093 5-128 14-0496                 | 11-8-2014 03:32 PM |
| 33  | 33  | M7538.D | M8173DUP-P-D(4) | Lab Duplicate of NBH14-00                | 11-8-2014 04:17 PM |
| 34  | 34  | M7539.D | M8174-P-D(4)    | NBH14-0097 5-128 14-0496                 | 11-8-2014 05:01 PM |
| 35  | 35  | M7540.D | IE07 mid        |  | 11-8-2014 05:45 PM |
| 36  | 36  | M7541.D | M8374-P-D(4)    | NBH14-0269 5-128 14-0496                 | 11-8-2014 06:30 PM |
| 37  | 37  | M7542.D | M8375-P-D(4)    | NBH14-0273 5-128 14-0496                 | 11-8-2014 07:15 PM |
| 38  | 38  | M7543.D | M8376-P-D(4)    | NBH14-0277 5-128 14-0496                 | 11-8-2014 07:59 PM |
| 39  | 39  | M7544.D | M8377-P-D(4)    | NBH14-0281 5-128 14-0496                 | 11-8-2014 08:44 PM |
| 40  | 40  | M7545.D | M8378-P-D(4)    | NBH14-0285 5-128 14-0496                 | 11-8-2014 09:29 PM |
| 41  | 41  | M7546.D | M8379-P-D(4)    | NBH14-0289 5-128 14-0496                 | 11-8-2014 10:14 PM |
| 42  | 42  | M7547.D | M8389-P-D(4)    | NBH14-0109 5-128 14-0496                 | 11-8-2014 10:59 PM |
| 43  | 43  | M7548.D | M8390-P-D(4)    | NBH14-0113 5-128 14-0496                 | 11-8-2014 11:44 PM |
| 44  | 44  | M7549.D | M8391-P-D(4)    | NBH14-0117 5-128 14-0496                 | 11-9-2014 12:28 AM |
| 45  | 45  | M7550.D | M8395-P-D(4)    | NBH14-0133 5-128 14-0496                 | 11-9-2014 01:13 AM |
| 46  | 46  | M7551.D | IE07 mid        |  | 11-9-2014 01:58 AM |
| 47  | 47  | M7552.D | M8396-P-D(4)    | NBH14-0137 5-128 14-0496                 | 11-9-2014 02:43 AM |
| 48  | 48  | M7553.D | M8397-P-D(4)    | NBH14-0141 5-128 14-0496                 | 11-9-2014 03:27 AM |
| 49  | 49  | M7554.D | M8398-P-D(4)    | NBH14-0145 5-128 14-0496                 | 11-9-2014 04:12 AM |
| 50  | 50  | M7555.D | M8399-P-D(4)    | NBH14-0149 5-128 14-0496                 | 11-9-2014 04:57 AM |
| 51  | 51  | M7556.D | M8157-P-D(5)    | NBH14-0021 5-128 14-0496                 | 11-9-2014 05:42 AM |
| 52  | 52  | M7557.D | M8169-P-D(5)    |  | 11-9-2014 06:26 AM |
| 53  | 53  | M7558.D | M8172-P-D(5)    |  | 11-9-2014 07:11 AM |
| 54  | 54  | M7559.D | M8173-P-D(5)    |  | 11-9-2014 07:55 AM |
| 55  | 55  | M7560.D | M8173DUP-P-D(5) |  | 11-9-2014 08:40 AM |
| 56  | 56  | M7561.D | M8174-P-D(5)    |  | 11-9-2014 09:24 AM |
| 57  | 57  | M7562.D | IE08 mid        | (1) Dilutions not needed.<br>RR 11/24/14 | 11-9-2014 10:09 AM |
| 58  | 58  | M7563.D | M8374-P-D(5)    |  | 11-9-2014 10:53 AM |
| 59  | 59  | M7564.D | M8375-P-D(5)    |  | 11-9-2014 11:38 AM |
| 60  | 60  | M7565.D | M8376-P-D(5)    |  | 11-9-2014 12:22 PM |
| 61  | 61  | M7566.D | M8377-P-D(5)    |  | 11-9-2014 01:07 PM |

## Calibration Response Factor Report

**Batch:** 14-0496 **Project Test Code:** Master 128(S) **RFs validated CRD** 12/10/2014  
**Data Set:** DP-14-0678 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M **Responses Via** Initial Calibration **Last Updated** 11/14/2014 9:30:00 AM **Title:** NBH  
**Instrument:** Inst. M **Operator:** RR **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Type: | Column: | MAD:    | 1<br>IE03<br>M7205.D | 2<br>IE05<br>M7207.D | 3<br>IE06<br>M7208.D | 4<br>IE07<br>M7209.D | 5<br>IE08<br>M7210.D | 6<br>IE10<br>M7212.D | 7 | 8 | Curve Fit: | (A)      | (B)      | (C)     | Stat<br>(r <sup>2</sup> /RSD): | Qual:   |  |
|-----|-----------|-------|---------|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|------------|----------|----------|---------|--------------------------------|---------|--|
| 1   | Cl5(96)   | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 2   | Cl2(8)    | 1     | Y       | 1.02677 | 0.82499              | 0.74685              | 0.63118              | 0.55904              | 0.41512              | -                    | - | 6 | Q          | -0.05406 | 0.58100  | 0.02367 | 0.99968                        |         |  |
| 3   | Cl3(18)   | 1     | Y       | 1.31210 | 1.10482              | 0.96661              | 0.78724              | 0.69070              | 0.50395              | -                    | - | 6 | Q          | -0.06844 | 0.71262  | 0.03558 | 0.99947                        |         |  |
| 4   | Cl3(34)   | s     | 1       | Y       | 2.47273              | 1.36117              | 1.18217              | 1.03139              | 0.92191              | 0.71999              | - | - | 6          | Q        | -0.06938 | 0.92761 | 0.04587                        | 0.99994 |  |
| 5   | Cl3(28)   | 1     | Y       | 1.88563 | 1.62148              | 1.53903              | 1.39969              | 1.26450              | 1.01381              | -                    | - | 6 | Q          | -0.09842 | 1.31978  | 0.03237 | 0.99986                        |         |  |
| 6   | Cl4(52)   | 1     | Y       | 2.67460 | 1.50893              | 1.27188              | 1.06050              | 0.93014              | 0.70933              | -                    | - | 6 | Q          | -0.07364 | 0.92696  | 0.05816 | 0.99983                        |         |  |
| 7   | Cl4(44)   | 1     | Y       | 1.96878 | 1.69047              | 1.60648              | 1.42175              | 1.25645              | 1.00372              | -                    | - | 6 | Q          | -0.09818 | 1.30598  | 0.04163 | 0.99973                        |         |  |
| 8   | Cl4(66)   | 1     | Y       | 2.14003 | 1.91334              | 1.75148              | 1.60565              | 1.43266              | 1.15511              | -                    | - | 6 | Q          | -0.10876 | 1.49082  | 0.04098 | 0.99982                        |         |  |
| 9   | Cl5(101)  | 1     | Y       | 1.87327 | 1.59373              | 1.70864              | 1.61385              | 1.42978              | 1.22422              | -                    | - | 6 | Q          | -0.08750 | 1.49635  | 0.02623 | 0.99975                        |         |  |
| 10  | Cl6(161)  | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 11  | Cl6(152)  | s     | 1       | Y       | 1.02184              | 0.73169              | 0.67623              | 0.59438              | 0.54889              | 0.47996              | - | - | 6          | Q        | -0.02339 | 0.54921 | 0.01882                        | 0.99992 |  |
| 12  | Cl5(118)  | 1     | Y       | 1.02402 | 0.91463              | 0.85020              | 0.75415              | 0.68354              | 0.58350              | -                    | - | 6 | Q          | -0.03737 | 0.69686  | 0.02122 | 0.99982                        |         |  |
| 13  | Cl6(153)  | 1     | Y       | 0.88266 | 0.81935              | 0.60192              | 0.77537              | 0.66030              | 0.59647              | -                    | - | 6 | Q          | -0.02991 | 0.69018  | 0.00733 | 0.99932                        |         |  |
| 14  | Cl5(105)  | 1     | Y       | 1.20312 | 1.04021              | 0.99965              | 0.96015              | 0.82296              | 0.65909              | -                    | - | 6 | Q          | -0.06789 | 0.87004  | 0.02177 | 0.99963                        |         |  |
| 15  | Cl6(138)  | 1     | Y       | 1.22541 | 1.06675              | 1.00587              | 0.91669              | 0.84817              | 0.76297              | -                    | - | 6 | Q          | -0.03117 | 0.85646  | 0.02109 | 0.99991                        |         |  |
| 16  | Cl7(187)  | 1     | Y       | 1.07415 | 0.94434              | 0.88498              | 0.79082              | 0.74346              | 0.66512              | -                    | - | 6 | Q          | -0.02786 | 0.74881  | 0.01846 | 0.99992                        |         |  |
| 17  | Cl6(128)  | 1     | Y       | 1.16100 | 0.91667              | 0.89359              | 0.85607              | 0.84318              | 0.73247              | -                    | - | 6 | Q          | -0.04270 | 0.86786  | 0.00587 | 0.99999                        |         |  |
| 18  | Cl7(180)  | 1     | Y       | 1.23170 | 1.08198              | 0.99753              | 0.93689              | 0.88497              | 0.82624              | -                    | - | 6 | Q          | -0.02031 | 0.88592  | 0.01772 | 0.99996                        |         |  |
| 19  | Cl7(170)  | 1     | Y       | 1.33635 | 1.19973              | 1.11853              | 1.05917              | 1.00487              | 0.94111              | -                    | - | 6 | Q          | -0.02267 | 1.00845  | 0.01743 | 0.99997                        |         |  |
| 20  | Cl8(195)  | 1     | Y       | 1.24821 | 1.10061              | 1.05076              | 0.99234              | 0.94476              | 0.89153              | -                    | - | 6 | Q          | -0.01887 | 0.94735  | 0.01528 | 0.99997                        |         |  |
| 21  | Cl9(206)  | 1     | Y       | 1.18038 | 1.03661              | 0.99467              | 0.96457              | 0.91081              | 0.85789              | -                    | - | 6 | Q          | -0.02022 | 0.91869  | 0.01268 | 0.99997                        |         |  |
| 22  | Cl10(209) | 1     | Y       | 0.99002 | 0.86426              | 0.82007              | 0.78889              | 0.73849              | 0.67758              | -                    | - | 6 | Q          | -0.02343 | 0.74907  | 0.01198 | 0.99996                        |         |  |
| 23  | Signal    | 2     | -       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 24  | Cl5(96)   | I     | 2       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                              | -       |  |
| 25  | Cl2(8)    | 2     | Y       | 0.94637 | 0.83650              | 0.76620              | 0.67202              | 0.62199              | 0.48595              | -                    | - | 6 | Q          | -0.05185 | 0.64681  | 0.01712 | 0.99988                        |         |  |
| 26  | Cl3(18)   | 2     | Y       | 1.39241 | 1.13741              | 1.00550              | 0.76551              | 0.70491              | 0.54182              | -                    | - | 6 | Q          | -0.05533 | 0.70768  | 0.03799 | 0.99943                        |         |  |
| 27  | Cl3(34)   | s     | 2       | Y       | 2.23518              | 1.39531              | 1.20146              | 1.04748              | 0.98379              | 0.79730              | - | - | 6          | Q        | -0.06315 | 0.98749 | 0.03800                        | 0.99996 |  |
| 28  | Cl3(28)   | 2     | Y       | 2.05612 | 1.73008              | 1.59254              | 1.42520              | 1.36560              | 1.12979              | -                    | - | 6 | Q          | -0.08759 | 1.40224  | 0.02866 | 0.99996                        |         |  |
| 29  | Cl4(52)   | 2     | Y       | 1.32543 | 1.01634              | 1.04226              | 0.82635              | 0.80598              | 0.62728              | -                    | - | 6 | Q          | -0.06549 | 0.83027  | 0.02172 | 0.99971                        |         |  |
| 30  | Cl4(44)   | 2     | Y       | 2.26696 | 1.68554              | 1.62828              | 1.44775              | 1.40139              | 1.13801              | -                    | - | 6 | Q          | -0.09853 | 1.44647  | 0.02603 | 0.99996                        |         |  |

## Calibration Response Factor Report

**Batch:** 14-0496                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0678                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M        **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|---------|-----------------------------|-------|
|     |           |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |          |         |         |                             |       |
|     |           |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |         |                             |       |
| 31  | Cl4(66)   |              | Y       | 2.28150 | 1.94181 | 1.76289 | 1.65364 | 1.54066 | 1.31516 | - | - | 6 Q        | -0.08582 | 1.58007 | 0.03256 | 0.99996                     |       |
| 32  | Cl5(101)  |              | Y       | 1.56754 | 1.17777 | 1.01633 | 1.01029 | 0.86410 | 0.96534 | - | - | 6 Q        | 0.04538  | 0.80794 | 0.03732 | 0.99968                     |       |
| 33  | Cl6(161)  | I            | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -       | -                           |       |
| 34  | Cl6(152)  | s            | Y       | 0.69735 | 0.69234 | 0.57622 | 0.54795 | 0.47409 | 0.53607 | - | - | 6 Q        | 0.02791  | 0.43955 | 0.02156 | 0.99966                     |       |
| 35  | Cl5(118)  |              | Y       | 1.37021 | 0.63622 | 0.73177 | 0.70795 | 0.59017 | 0.57149 | - | - | 6 Q        | -0.00725 | 0.58778 | 0.02195 | 0.99943                     |       |
| 36  | Cl6(153)  |              | Y       | 1.07545 | 0.86632 | 0.79677 | 0.69128 | 0.63279 | 0.63321 | - | - | 6 Q        | 0.00578  | 0.60663 | 0.02539 | 0.99983                     |       |
| 37  | Cl5(105)  |              | Y       | 1.20126 | 1.01455 | 0.97857 | 0.92200 | 0.88341 | 0.94009 | - | - | 6 Q        | 0.02686  | 0.84840 | 0.01736 | 0.99996                     |       |
| 38  | Cl6(138)  |              | Y       | 0.67940 | 0.66822 | 0.62305 | 0.61544 | 0.61172 | 0.68345 | - | - | 6 Q        | 0.03117  | 0.58132 | 0.00625 | 0.99999                     |       |
| 39  | Cl7(187)  |              | Y       | 0.98245 | 0.80842 | 0.76633 | 0.69224 | 0.65688 | 0.68482 | - | - | 6 Q        | 0.01569  | 0.62875 | 0.01795 | 0.99993                     |       |
| 40  | Cl6(128)  |              | Y       | 1.29556 | 1.08544 | 1.04052 | 0.96581 | 0.92997 | 0.98492 | - | - | 6 Q        | 0.02722  | 0.89128 | 0.01958 | 0.99996                     |       |
| 41  | Cl7(180)  |              | Y       | 1.15986 | 0.95311 | 0.92022 | 0.85738 | 0.83699 | 0.89707 | - | - | 6 Q        | 0.02897  | 0.79906 | 0.01566 | 0.99998                     |       |
| 42  | Cl7(170)  |              | Y       | 1.17715 | 1.00944 | 0.98379 | 0.93732 | 0.91404 | 0.98260 | - | - | 6 Q        | 0.03138  | 0.87743 | 0.01381 | 0.99998                     |       |
| 43  | Cl8(195)  |              | Y       | 1.05313 | 0.90773 | 0.89676 | 0.85979 | 0.84072 | 0.91395 | - | - | 6 Q        | 0.03255  | 0.80577 | 0.01137 | 0.99998                     |       |
| 44  | Cl9(206)  |              | Y       | 0.94156 | 0.80488 | 0.80171 | 0.77400 | 0.75899 | 0.82033 | - | - | 6 Q        | 0.02717  | 0.73041 | 0.00888 | 0.99999                     |       |
| 45  | Cl10(209) |              | Y       | 0.76301 | 0.64557 | 0.63678 | 0.60540 | 0.58689 | 0.62005 | - | - | 6 Q        | 0.01548  | 0.56751 | 0.00888 | 0.99998                     |       |

## Calibration Response Factor Report

**Batch:** 14-0496                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0678                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte: | Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A) | (B) | (C) | Stat (r^2/RSD): | Qual: |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|-----|-----|-----|-----------------|-------|
|     |          |       | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - |            |     |     |     |                 |       |
|     |          |       |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D | - | - |            |     |     |     |                 |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0496 **Project Test Code:** Master 128(S) **RFs validated CRD 12/10/2014**  
**Data Set:** DP-14-0678 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417F.M **Responses Via** Initial Calibration **Last Updated** 12/5/2014 3:22:00 PM **Title:** NBH 101 only to compliment B method  
**Instrument:** Inst. M **Operator:** RR **Path:** I:\M\DATA\MM0417F.M

| No: | Analyte: | Type: | Column: | MQO: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A) | (B)      | (C)     | Stat (r^2/RSD): | Qual:   |
|-----|----------|-------|---------|------|---------|---------|---------|---------|---------|---------|---|---|------------|-----|----------|---------|-----------------|---------|
|     |          |       |         |      | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |     |          |         |                 |         |
|     |          |       |         |      | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |     |          |         |                 |         |
| 1   | Cl5(96)  | I     | 1       | -    | -       | -       | -       | -       | -       | -       | - | - | -          | -   | -        | -       | -               | -       |
| 2   | Cl5(101) | Y     | 1       | Y    | 2.10045 | 1.55920 | 1.68988 | 1.70104 | 1.46973 | 1.35619 | - | - | 6          | Q   | -0.05296 | 1.51726 | 0.02697         | 0.99964 |
| 3   | Signal   |       | 2       | -    | -       | -       | -       | -       | -       | -       | - | - | -          | -   | -        | -       | -               | -       |
| 4   | Cl5(96)  | I     | 2       | -    | -       | -       | -       | -       | -       | -       | - | - | -          | -   | -        | -       | -               | -       |
| 5   | Cl5(101) | Y     | 2       | Y    | 1.67256 | 2.33575 | 1.99479 | 1.98711 | 2.06595 | 1.40514 | - | - | 6          | Q   | -0.26866 | 2.27420 | -0.02348        | 0.99966 |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0496                      **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0678              **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

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**Method:** I:\M\DATA\MM0417C.M  
**Title:** NBH  
**Last Update:** Fri Nov 14 9:30 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

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| No: | ID:  | Path\File:               | Update Time:     | Quant Time:      | Acquisition Time:    |
|-----|------|--------------------------|------------------|------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Oct 28 9:02 2014 | Oct 28 8:27 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 11:58 PM |

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**Method:** I:\M\DATA\MM0417F.M  
**Title:** NBH 101 only to compliment B method  
**Last Update:** Fri Dec 05 15:22 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

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| No: | ID:  | Path\File:               | Update Time:      | Quant Time:       | Acquisition Time:    |
|-----|------|--------------------------|-------------------|-------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Dec 05 15:22 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 11:58 PM |

## ICC Summary Report

**Batch:** 14-0496 **Data Set:** DP-14-0678  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0496 **Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04000 | 0.04325 | 8.3    |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04000 | 0.04152 | 3.8    |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04104 | 2.5    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04000 | 0.04097 | 2.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04000 | 0.04111 | 2.8    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04000 | 0.04166 | 4.3    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04000 | 0.04028 | 0.8    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04000 | 0.03706 | 7.3    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04020 | 0.04329 | 7.8    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04000 | 0.04151 | 3.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04000 | 0.03933 | 1.8    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04000 | 0.03777 | 5.5    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04000 | 0.04232 | 5.8    |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04000 | 0.04280 | 7.0    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04000 | 0.03934 | 1.8    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04000 | 0.04137 | 3.5    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04000 | 0.04068 | 1.8    |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04000 | 0.03988 | 0.3    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04000 | 0.03884 | 3.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04000 | 0.03908 | 2.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04000 | 0.04248 | 6.3    |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04000 | 0.03989 | 0.3    |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04170 | 4.3    |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04000 | 0.04093 | 2.3    |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04000 | 0.04057 | 1.5    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04000 | 0.04125 | 3.3    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04000 | 0.04095 | 2.5    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04000 | 0.03828 | 4.3    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04020 | 0.04128 | 2.8    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04000 | 0.03951 | 1.3    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04000 | 0.04346 | 8.8    |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04000 | 0.04078 | 2.0    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04000 | 0.04108 | 2.8    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04000 | 0.04269 | 6.8    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04000 | 0.04136 | 3.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04000 | 0.04073 | 1.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04000 | 0.04050 | 1.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04000 | 0.03956 | 1.0    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04000 | 0.03878 | 3.0    |

## ICC Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
Project Test Code: Master\_128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0496 Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.04000 | 0.03893 | 2.8    |

MQO: Only compounds flagged with "Y" will be counted towards  
MQO exceedences.

Mean PD: 3.49  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |



## ICC Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0496 Matrix: SED  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte: | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)  | I     | 1    | -    |         |         |        |
| 2   | Cl5(101) |       | 1    | Y    | 0.04000 | 0.03858 | 3.5    |
| 4   | Cl5(96)  | I     | 2    | -    |         |         |        |
| 5   | Cl5(101) |       | 2    | Y    | 0.04000 | 0.03850 | 3.8    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 3.65  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0496 **Data Set:** DP-14-0678  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7507.D          |                  | M7540.D          |       | M7551.D  |       |
|-----|-----------|-------|------|------|---------|------------------|------------------|------------------|-------|----------|-------|
|     |           |       |      |      |         | IE07 mid         |                  | IE07 mid         |       | IE07 mid |       |
|     |           |       |      |      |         | 11/07/2014 17:12 | 11/08/2014 17:46 | 11/09/2014 01:58 |       |          |       |
|     |           |       |      |      | MID     | % Diff           | MID              | % Diff           | MID   | % Diff   |       |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |                  |                  |       |          |       |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.03883          | -3.1             | 0.03875          | -3.3  | 0.03750  | -6.4  |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.03791          | -5.6             | 0.03806          | -5.2  | 0.03750  | -6.6  |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03840          | -4.0             | 0.03871          | -3.2  | 0.03821  | -4.5  |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.03970          | -1.1             | 0.04070          | 1.3   | 0.03931  | -2.1  |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03787          | -5.4             | 0.03887          | -2.9  | 0.03790  | -5.3  |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.03960          | -1.4             | 0.04022          | 0.1   | 0.03953  | -1.6  |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.03783          | -5.6             | 0.03986          | -0.5  | 0.03820  | -4.7  |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.03780          | -5.7             | 0.03755          | -6.3  | 0.03845  | -4.1  |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |                  |                  |       |          |       |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.04040          | 0.6              | 0.04038          | 0.5   | 0.04021  | 0.1   |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.03675          | -8.5             | 0.03561          | -11.3 | 0.03509  | -12.6 |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.04063          | 1.2              | 0.03843          | -4.3  | 0.03889  | -3.2  |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.03737          | -6.9             | 0.03749          | -6.6  | 0.03950  | -1.5  |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.03867          | -3.7             | 0.03827          | -4.7  | 0.03838  | -4.4  |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04000          | -0.4             | 0.03922          | -2.3  | 0.03966  | -1.2  |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.03690          | -8.1             | 0.03618          | -9.9  | 0.03805  | -5.3  |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.04050          | 0.8              | 0.04081          | 1.6   | 0.03955  | -1.5  |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.04072          | 1.4              | 0.03940          | -1.9  | 0.03947  | -1.7  |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04200          | 4.6              | 0.04087          | 1.8   | 0.04095  | 2.0   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.04174          | 4.1              | 0.04120          | 2.8   | 0.04139  | 3.3   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04222          | 5.1              | 0.04200          | 4.6   | 0.04208  | 4.8   |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |                  |                  |       |          |       |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03829          | -4.5             | 0.03794          | -5.3  | 0.03814  | -4.8  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03773          | -6.1             | 0.03696          | -8.0  | 0.03693  | -8.0  |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03935          | -1.6             | 0.03846          | -3.8  | 0.03849  | -3.8  |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.03677          | -8.4             | 0.03776          | -6.0  | 0.03604  | -10.3 |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.03935          | -1.7             | 0.03930          | -1.8  | 0.03724  | -7.0  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.04156          | 3.5              | 0.04187          | 4.3   | 0.03885  | -3.3  |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.04167          | 4.0              | 0.04065          | 1.4   | 0.03997  | -0.3  |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.04113          | 2.6              | 0.03592          | -10.4 | 0.03941  | -1.7  |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |                  |                  |       |          |       |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04132          | 2.9              | 0.04206          | 4.7   | 0.04397  | 9.5   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.04113          | 2.4              | 0.04013          | -0.1  | 0.03746  | -6.7  |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.04147          | 3.3              | 0.04210          | 4.8   | 0.03711  | -7.6  |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03983          | -0.7             | 0.03871          | -3.5  | 0.03755  | -6.4  |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.03882          | -3.3             | 0.04054          | 0.9   | 0.04333  | 7.9   |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04163          | 3.7              | 0.04212          | 4.9   | 0.04183  | 4.2   |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04213          | 4.9              | 0.04194          | 4.4   | 0.03978  | -0.9  |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04340          | 8.1              | 0.04143          | 3.2   | 0.04101  | 2.1   |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.04282          | 6.6              | 0.04177          | 4.0   | 0.04103  | 2.2   |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04355          | 8.4              | 0.04284          | 6.7   | 0.04257  | 6.0   |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.04406          | 9.9              | 0.04353          | 8.6   | 0.04347  | 8.5   |

## CCV Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7507.D     |        | M7540.D |        | M7551.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.04448     | 10.8   | 0.04431 | 10.3   | 0.04440 | 10.6   |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 4.4    | 4.3     | 4.7    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
 Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
 Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
 Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7518.D          |        | M7529.D          |        | M7562.D          |        |
|-----|-----------|-------|------|------|---------|------------------|--------|------------------|--------|------------------|--------|
|     |           |       |      |      |         | MID              | % Diff | MID              | % Diff | MID              | % Diff |
|     |           |       |      |      |         | 11/08/2014 01:24 |        | 11/08/2014 09:35 |        | 11/09/2014 10:09 |        |
|     |           |       |      |      |         |                  |        |                  |        |                  |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |        |                  |        |                  |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.07671          | -4.3   | 0.07745          | -3.4   | 0.07404          | -7.6   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.07444          | -7.3   | 0.07550          | -6.0   | 0.07509          | -6.5   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07847          | -1.9   | 0.07819          | -2.3   | 0.07662          | -4.2   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.08257          | 2.8    | 0.08129          | 1.2    | 0.07546          | -6.1   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07759          | -3.1   | 0.07761          | -3.1   | 0.07380          | -7.8   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07894          | -1.7   | 0.07844          | -2.3   | 0.07568          | -5.8   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.08018          | 0.0    | 0.07801          | -2.7   | 0.07187          | -10.3  |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.08219          | 2.5    | 0.07273          | -9.3   | 0.07507          | -6.3   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |        |                  |        |                  |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.07442          | -7.3   | 0.07823          | -2.6   | 0.08183          | 1.9    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.07356          | -8.4   | 0.07197          | -10.4  | 0.06975          | -13.2  |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.07771          | -3.2   | 0.08117          | 1.1    | 0.07556          | -5.9   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.08462          | 5.5    | 0.07349          | -8.4   | 0.08058          | 0.4    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07628          | -5.0   | 0.07681          | -4.4   | 0.07805          | -2.8   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.07675          | -4.4   | 0.07728          | -3.8   | 0.07789          | -3.0   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.07635          | -4.9   | 0.07919          | -1.4   | 0.07981          | -0.6   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07785          | -3.1   | 0.07733          | -3.7   | 0.07768          | -3.3   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07736          | -3.7   | 0.07665          | -4.6   | 0.07745          | -3.6   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.07952          | -1.0   | 0.07764          | -3.3   | 0.08022          | -0.1   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.07900          | -1.4   | 0.07609          | -5.1   | 0.08021          | 0.1    |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.07953          | -1.0   | 0.07613          | -5.2   | 0.08135          | 1.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |        |                  |        |                  |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.07280          | -9.2   | 0.07463          | -6.9   | 0.07317          | -8.7   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07241          | -9.8   | 0.07581          | -5.6   | 0.07356          | -8.4   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07662          | -4.2   | 0.07771          | -2.9   | 0.07542          | -5.7   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.07798          | -2.9   | 0.07854          | -2.2   | 0.07340          | -8.6   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.07126          | -11.0  | 0.07544          | -5.8   | 0.07100          | -11.3  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.07428          | -7.5   | 0.08572          | 6.7    | 0.08630          | 7.4    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.08202          | 2.3    | 0.08241          | 2.8    | 0.08160          | 1.8    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.07506          | -6.4   | 0.07358          | -8.2   | 0.07853          | -2.0   |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |        |                  |        |                  |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.08632          | 7.5    | 0.08032          | 0.0    | 0.08278          | 3.1    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.07681          | -4.4   | 0.07650          | -4.8   | 0.06794          | -15.4  |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.08130          | 1.2    | 0.07924          | -1.3   | 0.07023          | -12.6  |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.08131          | 1.3    | 0.08028          | 0.0    | 0.07333          | -8.6   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.07930          | -1.3   | 0.08573          | 6.7    | 0.08170          | 1.7    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.08067          | 0.4    | 0.08064          | 0.4    | 0.07658          | -4.7   |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.08245          | 2.7    | 0.07925          | -1.3   | 0.07711          | -4.0   |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08330          | 3.7    | 0.08098          | 0.8    | 0.08070          | 0.5    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08298          | 3.3    | 0.07875          | -2.0   | 0.08156          | 1.5    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08555          | 6.5    | 0.08739          | 8.8    | 0.08504          | 5.9    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.08571          | 6.9    | 0.08987          | 12.1   | 0.08952          | 11.7   |

## CCV Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7518.D     |        | M7529.D |        | M7562.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.08032 | 0.08881     | 10.6   | 0.09298 | 15.8   | 0.09065 | 12.9   |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 4.4    | 4.5     | 5.7    |         |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    | < 24   |         |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

|  |   |
|--|---|
| <b>Batch:</b> <u>14-0496</u>   | <b>Data Set:</b> <u>DP-14-0678</u>      |
| <b>Project Test Code:</b> <u>Master 128(S)</u>                       | <b>SOP_NO:</b> <u>5-128-13</u>          |
| <b>Project Name:</b> <u>USACE/NAE - New Bedford Harbor LTM Study</u> | <b>Project Number:</b> <u>100053747</u> |

**Matrix:** SED  
**Calibration File:** MM0417F.M      **Last Updated:** 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7507.D<br>IE07 mid<br>11/07/2014 17:12 |        | M7540.D<br>IE07 mid<br>11/08/2014 17:46 |        | M7551.D<br>IE07 mid<br>11/09/2014 01:58 |        |
|--|----------|-------|------|------|---------|---|--------|---|--------|---|--------|
|  |          |       |      |      |         | MID                                     | % Diff | MID                                     | % Diff | MID                                     | % Diff |
| 1  | Cl5(96)  | I     | 1    | -    |         |   |        |   |        |   |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.04008 | 0.04057                                 | 1.2    | 0.03739                                 | -6.7   | 0.03982                                 | -0.6   |
| 4  | Cl5(96)  | I     | 2    | -    |         |   |        |   |        |   |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.04008 | 0.03692                                 | -7.9   | 0.03994                                 | -0.3   | 0.04041                                 | 0.8    |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b> <b>4.6</b>              |        | <b>3.5</b>                              |        | <b>0.7</b>                              |        |
|  |          |       |      |      |         | <b>Time Check:</b> <b>&lt; 24</b>       |        | <b>&lt; 24</b>                          |        | <b>&lt; 24</b>                          |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | 24        | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0496 Data Set: DP-14-0678  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED

Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7518.D            |                | M7529.D          |                | M7562.D          |        |
|--|----------|-------|------|------|---------|--------------------|----------------|------------------|----------------|------------------|--------|
|  |          |       |      |      |         | MID                | % Diff         | MID              | % Diff         | MID              | % Diff |
|  |          |       |      |      |         | 11/08/2014 01:24   |                | 11/08/2014 09:35 |                | 11/09/2014 10:09 |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                    |                |                  |                |                  |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.08016 | 0.08778            | 9.5            | 0.08119          | 1.3            | 0.07953          | -0.8   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                    |                |                  |                |                  |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.08016 | 0.08153            | 1.7            | 0.08610          | 7.4            | 0.07480          | -6.7   |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>    | <b>5.6</b>     | <b>4.4</b>       | <b>3.8</b>     |                  |        |
|  |          |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b> | <b>&lt; 24</b>   | <b>&lt; 24</b> |                  |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : NA  
 Total Cpnds : 45

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound |              | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------|--------------|---------|---------|---------|---------|---------|---------|
| 1 I      | C15(96)      | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2        | C12(8)       | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3        | C13(18)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 4 s      | C13(34)      | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 5        | C13(28)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 6        | C14(52)      | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 7        | C14(44)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 8        | C14(66)      | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 9        | C15(101)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 10 I     | C16(161)     | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 11 s     | C16(152)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 12       | C15(118)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 13       | C16(153)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 14       | C15(105)     | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 15       | C16(138)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 16       | C17(187)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 17       | C16(128)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 18       | C17(180)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 19       | C17(170)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 20       | C18(195)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 21       | C19(206)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 22       | C110(209)    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 23       | Signal #2    | -----   | -----   | -----   | -----   | -----   | -----   |
| 24 I     | C15(96) #2   | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 25       | C12(8) #2    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 26       | C13(18) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 27 s     | C13(34) #2   | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 28       | C13(28) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 29       | C14(52) #2   | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 30       | C14(44) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 31       | C14(66) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 32       | C15(101) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 33 I     | C16(161) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 34 s     | C16(152) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 35       | C15(118) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 36       | C16(153) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 37       | C15(105) #2  | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 38       | C16(138) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 39       | C17(187) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 40       | C16(128) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 41       | C17(180) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 42       | C17(170) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 43       | C18(195) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 44       | C19(206) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 45       | C110(209) #2 | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015



Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 5

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound       | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C15(101)     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 Signal #2    | -----   | -----   | -----   | -----   | -----   | -----   |
| 4 I C15(96) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 5 C15(101) #2  | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2021371m  | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4304957   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12822282m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 28199596m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.40    | 119959m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 106015    | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.48    | 687843m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.58    | 473925m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 49812m    | BelowCal | ng    |
| 3) C13(18)                  | 12.13    | 63919m    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 91859m    | BelowCal | ng    |
| 6) C14(52)                  | 15.84    | 129752    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 95909     | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 103819m   | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 90878m    | BelowCal | ng    |
| 12) C15(118)                | 22.40    | 106241m   | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 91576m    | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 124823m   | BelowCal | ng    |
| 15) C16(138)                | 24.53    | 127136m   | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 111442m   | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 120454m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 127788    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 138646m   | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 129501    | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 121956m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 102714m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 291232m   | BelowCal | ng    |
| 26) C13(18) #2              | 15.00    | 430280m   | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 635375m   | BelowCal | ng    |
| 29) C14(52) #2              | 19.15f   | 407881m   | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 700530m   | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 702095m   | BelowCal | ng    |
| 32) C15(101) #2             | 23.30f   | 369053m   | BelowCal | ng    |
| 35) C15(118) #2             | 26.37    | 931211m   | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 730887    | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 816392    | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 461727m   | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 667680    | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 880477m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 788251m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 800002m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 715719m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 637238m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 518551m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc     | Units |
|------------------------------------|----------|-----------|----------|-------|
| <b>Internal Standards</b>          |          |           |          |       |
| 1) I C15(96)                       | 17.39    | 2103011   | 0.10000  | ng    |
| 10) I C16(161)                     | 23.21    | 4562564   | 0.10000  | ng    |
| 24) I C15(96) #2                   | 20.51    | 12416297m | 0.10000  | ng    |
| 33) I C16(161) #2                  | 26.79    | 27129752m | 0.10000  | ng    |
| <b>System Monitoring Compounds</b> |          |           |          |       |
| 4) s C13(34)                       | 13.39    | 297705    | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 20.48    | 348526    | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 16.47    | 1801754m  | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 23.57    | 1960933m  | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |          |           |          |       |
| 2) C12(8)                          | 10.21    | 180784    | BelowCal | ng    |
| 3) C13(18)                         | 12.12    | 242567    | BelowCal | ng    |
| 5) C13(28)                         | 14.21    | 356002    | BelowCal | ng    |
| 6) C14(52)                         | 15.83    | 330341    | BelowCal | ng    |
| 7) C14(44)                         | 16.70    | 371149    | BelowCal | ng    |
| 8) C14(66)                         | 18.60    | 419278    | BelowCal | ng    |
| 9) C15(101)                        | 19.73    | 349240m   | BelowCal | ng    |
| 12) C15(118)                       | 22.39    | 435665    | BelowCal | ng    |
| 13) C16(153)                       | 23.43 TW | 390283m   | BelowCal | ng    |
| 14) C15(105)                       | 23.44 TW | 495013m   | BelowCal | ng    |
| 15) C16(138)                       | 24.54    | 508129    | BelowCal | ng    |
| 16) C17(187)                       | 25.29    | 449817    | BelowCal | ng    |
| 17) C16(128)                       | 25.63    | 436637m   | BelowCal | ng    |
| 18) C17(180)                       | 27.16    | 515383    | BelowCal | ng    |
| 19) C17(170)                       | 27.96    | 571467    | BelowCal | ng    |
| 20) C18(195)                       | 29.04    | 524255m   | BelowCal | ng    |
| 21) C19(206)                       | 30.30    | 492822m   | BelowCal | ng    |
| 22) C110(209)                      | 30.90    | 411674m   | BelowCal | ng    |
| 25) C12(8) #2                      | 13.11    | 1082243m  | BelowCal | ng    |
| 26) C13(18) #2                     | 14.99    | 1474380m  | BelowCal | ng    |
| 28) C13(28) #2                     | 17.76    | 2242630m  | BelowCal | ng    |
| 29) C14(52) #2                     | 19.14    | 1313663m  | BelowCal | ng    |
| 30) C14(44) #2                     | 19.96    | 2184906m  | BelowCal | ng    |
| 31) C14(66) #2                     | 22.36    | 2512274m  | BelowCal | ng    |
| 32) C15(101) #2                    | 23.22f   | 2401459m  | BelowCal | ng    |
| 35) C15(118) #2                    | 26.34    | 1802006m  | BelowCal | ng    |
| 36) C16(153) #2                    | 26.93    | 2453717   | BelowCal | ng    |
| 37) C15(105) #2                    | 27.20    | 2870795   | BelowCal | ng    |
| 38) C16(138) #2                    | 27.78    | 1892629m  | BelowCal | ng    |
| 39) C17(187) #2                    | 28.14    | 2289736   | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3074334  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 2699532  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 2859094m | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 2571011m | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 2275330m | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 1828475m | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc          | Units |
|------------------------------------|----------|-----------|---------------|-------|
| <b>Internal Standards</b>          |          |           |               |       |
| 1) I C15(96)                       | 17.39    | 2225995   | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21    | 4815577   | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51    | 13716870m | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79    | 29503850m | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |          |           |               |       |
| 4) s C13(34)                       | 13.40    | 526303    | BelowCal      | ng    |
| Spiked Amount                      | 0.0200   | Recovery  | =             | 0.00% |
| 11) s C16(152)                     | 20.48    | 653892    | BelowCal      | ng    |
| Spiked Amount                      | 0.0201   | Recovery  | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47    | 3296041m  | BelowCal      | ng    |
| Spiked Amount                      | 0.0200   | Recovery  | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58    | 3413733m  | BelowCal      | ng    |
| Spiked Amount                      | 0.0201   | Recovery  | =             | 0.00% |
| <b>Target Compounds</b>            |          |           |               |       |
| 2) C12(8)                          | 10.20    | 333163    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12    | 432057    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21    | 687914    | BelowCal      | ng    |
| 6) C14(52)                         | 15.83    | 566807    | BelowCal      | ng    |
| 7) C14(44)                         | 16.70    | 718063    | BelowCal      | ng    |
| 8) C14(66)                         | 18.60    | 781317    | BelowCal      | ng    |
| 9) C15(101)                        | 19.73    | 762207m   | BelowCal      | ng    |
| 12) C15(118)                       | 22.39    | 822121    | 0.03093       | ng    |
| 13) C16(153)                       | 23.43 TW | 582042m   | BelowCal      | ng    |
| 14) C15(105)                       | 23.44 TW | 965663m   | BelowCal      | ng    |
| 15) C16(138)                       | 24.53    | 972641    | BelowCal      | ng    |
| 16) C17(187)                       | 25.29    | 855745    | BelowCal      | ng    |
| 17) C16(128)                       | 25.63    | 864076m   | BelowCal      | ng    |
| 18) C17(180)                       | 27.16    | 964577    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96    | 1081580   | BelowCal      | ng    |
| 20) C18(195)                       | 29.04    | 1016052   | 0.02214       | ng    |
| 21) C19(206)                       | 30.30 e  | 959902m   | BelowCal      | ng    |
| 22) C110(209)                      | 30.90    | 792978    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10    | 2106184m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99    | 2769502m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76    | 4386422m  | BelowCal      | ng    |
| 29) C14(52) #2                     | 19.14    | 2862174m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96    | 4484836m  | BelowCal      | ng    |
| 31) C14(66) #2                     | 22.35    | 4845930m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.22f   | 5513291m  | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35    | 4335255m  | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93    | 4720338   | 1858066.56915 | ng    |
| 37) C15(105) #2                    | 27.20    | 5791618   | 1122307.10620 | ng    |
| 38) C16(138) #2                    | 27.78    | 3691173m  | BelowCal      | ng    |
| 39) C17(187) #2                    | 28.14    | 4540027   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc          | Units |
|-----|--------------|-------|----------|---------------|-------|
| 40) | C16(128) #2  | 28.54 | 6164428  | BelowCal      | ng    |
| 41) | C17(180) #2  | 29.58 | 5451699  | BelowCal      | ng    |
| 42) | C17(170) #2  | 30.21 | 5828332m | 1341992.36163 | ng    |
| 43) | C18(195) #2  | 31.08 | 5312720  | BelowCal      | ng    |
| 44) | C19(206) #2  | 32.18 | 4740147m | BelowCal      | ng    |
| 45) | C110(209) #2 | 32.62 | 3772500m | 1559880.63544 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response    | Conc          | Units |
|------------------------------------|--------|-------------|---------------|-------|
| <b>Internal Standards</b>          |        |             |               |       |
| 1) I C15(96)                       | 17.39  | 2400478     | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5366502     | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 14992953m   | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34497986    | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |             |               |       |
| 4) s C13(34)                       | 13.40  | 990336      | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 1280995     | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 6281919m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58  | 7591525m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| <b>Target Compounds</b>            |        |             |               |       |
| 2) C12(8)                          | 10.21  | e 607269    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | e 758928    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | e 1349346   | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | e 1019304   | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | e 1370610   | 4937947.47625 | ng    |
| 8) C14(66)                         | 18.60  | e 1544814   | BelowCal      | ng    |
| 9) C15(101)                        | 19.73  | e 1552699m  | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | e 1625326   | BelowCal      | ng    |
| 13) C16(153)                       | 23.43  | TW 1671077m | BelowCal      | ng    |
| 14) C15(105)                       | 23.44  | TW 2067241m | BelowCal      | ng    |
| 15) C16(138)                       | 24.53  | E 1975640   | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | e 1704362m  | BelowCal      | ng    |
| 17) C16(128)                       | 25.63  | e 1845001m  | BelowCal      | ng    |
| 18) C17(180)                       | 27.16  | E 2019174m  | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 2282709   | 3008040.19192 | ng    |
| 20) C18(195)                       | 29.04  | E 2138682m  | BelowCal      | ng    |
| 21) C19(206)                       | 30.30  | E 2074698m  | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 1700197m  | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | e 4038278m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | e 4609294m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | e 8581359m  | 2635734.36911 | ng    |
| 29) C14(52) #2                     | 19.14  | e 4960711m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96  | e 8717176m  | 1574158.07943 | ng    |
| 31) C14(66) #2                     | 22.36  | e 9936993m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | e 12947398m | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | 9808234m    | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 9577231   | 5152267.10485 | ng    |
| 37) C15(105) #2                    | 27.20  | E 12760987  | 3375570.13183 | ng    |
| 38) C16(138) #2                    | 27.78  | e 8526537m  | 1389497.67562 | ng    |
| 39) C17(187) #2                    | 28.14  | E 9590626   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units            |
|-----|--------------|-------|----------|-----------|------------------|
| 40) | C16(128) #2  | 28.54 | E        | 13380771  | BelowCal ng      |
| 41) | C17(180) #2  | 29.58 | E        | 11878441m | BelowCal ng      |
| 42) | C17(170) #2  | 30.21 | E        | 12986040m | 4087411.97930 ng |
| 43) | C18(195) #2  | 31.08 | E        | 11911883m | BelowCal ng      |
| 44) | C19(206) #2  | 32.18 | E        | 10701956m | BelowCal ng      |
| 45) | C110(209) #2 | 32.62 | E        | 8387432m  | 5983940.61406 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response      | Conc          | Units |
|------------------------------------|--------|---------------|---------------|-------|
| <b>Internal Standards</b>          |        |               |               |       |
| 1) I C15(96)                       | 17.39  | 2523572       | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5424577       | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 15446142m     | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34872167      | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |               |               |       |
| 4) s C13(34)                       | 13.40  | 1861197       | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 2391536       | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 12156621m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 13279030m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| <b>Target Compounds</b>            |        |               |               |       |
| 2) C12(8)                          | 10.21  | E 1130878     | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | E 1399997     | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | E 2563059     | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | E 1879706     | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | E 2546734m    | 8209713.15303 | ng    |
| 8) C14(66)                         | 18.60  | E 2898127     | BelowCal      | ng    |
| 9) C15(101)                        | 19.74  | E 2892299m    | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | E 2978206     | BelowCal      | ng    |
| 13) C16(153)                       | 23.44  | TW e 2876946m | BelowCal      | ng    |
| 14) C15(105)                       | 23.45  | TW e 3582092m | 1460512.29312 | ng    |
| 15) C16(138)                       | 24.54  | E 3695490     | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | E 3239289     | BelowCal      | ng    |
| 17) C16(128)                       | 25.64  | E 3673746m    | 3005443.36077 | ng    |
| 18) C17(180)                       | 27.15  | E 3855848m    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 4378231     | 5123824.53354 | ng    |
| 20) C18(195)                       | 29.04  | E 4116319m    | BelowCal      | ng    |
| 21) C19(206)                       | 30.31  | E 3960506m    | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 3217630m    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | E 7701304     | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | E 8745402m    | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | E 16942159    | 4721046.44848 | ng    |
| 29) C14(52) #2                     | 19.14  | E 9969394     | 3586542.90657 | ng    |
| 30) C14(44) #2                     | 19.96  | E 17386149m   | 5402544.89334 | ng    |
| 31) C14(66) #2                     | 22.35  | E 19075871m   | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | E 25811518m   | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 16530172m   | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 17723976    | 8475069.04022 | ng    |
| 37) C15(105) #2                    | 27.20  | E 24719069    | 5584053.95798 | ng    |
| 38) C16(138) #2                    | 27.78  | E 17133888m   | 4026737.36316 | ng    |
| 39) C17(187) #2                    | 28.14  | E 18398636    | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 26047859  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 23443478m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 25601551m | 6820215.95092 ng  |
| 43) | C18(195) #2  | 31.08 | E        | 23548017m | BelowCal ng       |
| 44) | C19(206) #2  | 32.18 | E        | 21216572m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 16438463m | 10094597.27940 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response       | Conc           | Units |
|------------------------------------|--------|----------------|----------------|-------|
| <b>Internal Standards</b>          |        |                |                |       |
| 1) I C15(96)                       | 17.39  | 2857033m       | 0.10000        | ng    |
| 10) I C16(161)                     | 23.21  | 5785136        | 0.10000        | ng    |
| 24) I C15(96) #2                   | 20.51  | 15534608m      | 0.10000        | ng    |
| 33) I C16(161) #2                  | 26.79  | 28894537       | 0.10000        | ng    |
| <b>System Monitoring Compounds</b> |        |                |                |       |
| 4) s C13(34)                       | 13.40  | 6582490m       | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 11) s C16(152)                     | 20.48  | 8920810        | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 39634387m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 49764814m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| <b>Target Compounds</b>            |        |                |                |       |
| 2) C12(8)                          | 10.21  | E 3802803      | BelowCal       | ng    |
| 3) C13(18)                         | 12.12  | E 4625770      | BelowCal       | ng    |
| 5) C13(28)                         | 14.20  | E 9305861      | BelowCal       | ng    |
| 6) C14(52)                         | 15.83  | E 6491550m     | BelowCal       | ng    |
| 7) C14(44)                         | 16.70  | E 9213228m     | 16878676.73504 | ng    |
| 8) C14(66)                         | 18.60  | E 10581706     | BelowCal       | ng    |
| 9) C15(101)                        | 19.74  | E 11214785m    | BelowCal       | ng    |
| 12) C15(118)                       | 22.39  | E 10845273     | BelowCal       | ng    |
| 13) C16(153)                       | 23.44  | TW E 11086255m | BelowCal       | ng    |
| 14) C15(105)                       | 23.45  | TW E 12238036m | 4834222.71684  | ng    |
| 15) C16(138)                       | 24.54  | E 14181010     | BelowCal       | ng    |
| 16) C17(187)                       | 25.28  | E 12362255m    | BelowCal       | ng    |
| 17) C16(128)                       | 25.63  | E 13614003m    | 7619432.15592  | ng    |
| 18) C17(180)                       | 27.16  | E 15356923     | BelowCal       | ng    |
| 19) C17(170)                       | 27.96  | E 17491960     | 11231671.25949 | ng    |
| 20) C18(195)                       | 29.04  | E 16570469m    | BelowCal       | ng    |
| 21) C19(206)                       | 30.30  | E 15913312m    | BelowCal       | ng    |
| 22) C110(209)                      | 30.90  | E 12593895m    | BelowCal       | ng    |
| 25) C12(8) #2                      | 13.10  | E 24205484m    | BelowCal       | ng    |
| 26) C13(18) #2                     | 14.99  | E 27041957m    | BelowCal       | ng    |
| 28) C13(28) #2                     | 17.76  | E 56387566m    | 9817113.52330  | ng    |
| 29) C14(52) #2                     | 19.14  | E 31213496m    | 8327658.06829  | ng    |
| 30) C14(44) #2                     | 19.96  | E 56797595m    | 12385262.50102 | ng    |
| 31) C14(66) #2                     | 22.36  | E 65508405m    | BelowCal       | ng    |
| 32) C15(101) #2                    | 23.21f | E 73990498m    | BelowCal       | ng    |
| 35) C15(118) #2                    | 26.34  | E 53052856m    | BelowCal       | ng    |
| 36) C16(153) #2                    | 26.93  | E 58782173     | 19272949.92145 | ng    |
| 37) C15(105) #2                    | 27.20  | E 87183647     | 12882056.53676 | ng    |
| 38) C16(138) #2                    | 27.78  | E 63446136m    | 10766758.70710 | ng    |
| 39) C17(187) #2                    | 28.14  | E 63573730     | BelowCal       | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 91431997  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 83277221m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 91217127m | 15760612.61828 ng |
| 43) | C18(195) #2  | 31.08 | E        | 84844015m | BelowCal ng       |
| 44) | C19(206) #2  | 32.17 | E        | 76001510m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 57560994m | 23285632.07742 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |      |
|-----------------------------|--------|-----------|---------|---------|------|
| Internal Standards          |        |           |         |         |      |
| 1) I C15(96)                | 17.39  | 2508888   | 0.10000 | ng      |      |
| 10) I C16(161)              | 23.21  | 5353469   | 0.10000 | ng      |      |
| 24) I C15(96) #2            | 20.51  | 13969685m | 0.10000 | ng      |      |
| 33) I C16(161) #2           | 26.78  | 30447371  | 0.10000 | ng      |      |
| System Monitoring Compounds |        |           |         |         |      |
| 4) s C13(34)                | 13.40  | 1040909   | 0.04104 | ng      | 2.6  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 102.60% |      |
| 11) s C16(152)              | 20.48  | 1350202   | 0.04329 | ng      | 7.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 107.79% |      |
| 27) s C13(34) #2            | 16.47  | 6131122m  | 0.04171 | ng      | 4.3  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 104.27% |      |
| 34) s C16(152) #2           | 23.57  | 6327177m  | 0.04129 | ng      | 2.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 102.81% |      |
| Target Compounds            |        |           |         |         |      |
| 2) C12(8)                   | 10.21  | 664551    | 0.04326 | ng      | 8.1  |
| 3) C13(18)                  | 12.12  | 802051    | 0.04152 | ng      | 3.8  |
| 5) C13(28)                  | 14.21  | 1396518   | 0.04098 | ng      | 2.5  |
| 6) C14(52)                  | 15.83  | 1070948   | 0.04112 | ng      | 2.8  |
| 7) C14(44)                  | 16.70  | 1426889m  | 0.04167 | ng      | 4.2  |
| 8) C14(66)                  | 18.60  | 1565208   | 0.04028 | ng      | 0.7  |
| 9) C15(101)                 | 19.73  | 1426993m  | 0.03706 | ng      | -7.3 |
| 12) C15(118)                | 22.39  | 1627776   | 0.04151 | ng      | 3.8  |
| 13) C16(153)                | 23.43  | 1467714m  | 0.03933 | ng      | -1.7 |
| 14) C15(105)                | 23.45  | 1824192m  | 0.03778 | ng      | -5.5 |
| 15) C16(138)                | 24.53  | 2023467   | 0.04232 | ng      | 5.8  |
| 16) C17(187)                | 25.29  | 1787515   | 0.04281 | ng      | 7.0  |
| 17) C16(128)                | 25.63  | 1824156m  | 0.03935 | ng      | -1.6 |
| 18) C17(180)                | 27.15  | 2038700   | 0.04138 | ng      | 3.4  |
| 19) C17(170)                | 27.96  | 2269675   | 0.04068 | ng      | 1.7  |
| 20) C18(195)                | 29.04  | 2088594m  | 0.03989 | ng      | -0.3 |
| 21) C19(206)                | 30.30  | 1961931m  | 0.03884 | ng      | -2.9 |
| 22) C110(209)               | 30.90  | 1612364m  | 0.03909 | ng      | -2.3 |
| 25) C12(8) #2               | 13.10  | 3947204m  | 0.04248 | ng      | 6.2  |
| 26) C13(18) #2              | 14.99  | 4351305m  | 0.03989 | ng      | -0.3 |
| 28) C13(28) #2              | 17.76  | 8214453m  | 0.04094 | ng      | 2.3  |
| 29) C14(52) #2              | 19.14  | 4859257m  | 0.04058 | ng      | 1.4  |
| 30) C14(44) #2              | 19.96  | 8466239m  | 0.04126 | ng      | 3.1  |
| 31) C14(66) #2              | 22.35  | 9294328m  | 0.04096 | ng      | 2.4  |
| 32) C15(101) #2             | 23.24  | 4934904m  | 0.03828 | ng      | -4.3 |
| 35) C15(118) #2             | 26.35  | 7705344m  | 0.03951 | ng      | -1.2 |
| 36) C16(153) #2             | 26.93  | 8835029   | 0.04347 | ng      | 8.7  |
| 37) C15(105) #2             | 27.20  | 11200960m | 0.04079 | ng      | 2.0  |
| 38) C16(138) #2             | 27.78  | 7622194m  | 0.04108 | ng      | 2.7  |
| 39) C17(187) #2             | 28.14  | 8806327   | 0.04269 | ng      | 6.7  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |      |
|-----|--------------|-------|-----------|---------|-------|------|
| 40) | C16(128) #2  | 28.54 | 11964334m | 0.04137 | ng    | 3.4  |
| 41) | C17(180) #2  | 29.58 | 10533125m | 0.04073 | ng    | 1.8  |
| 42) | C17(170) #2  | 30.21 | 11398863m | 0.04051 | ng    | 1.3  |
| 43) | C18(195) #2  | 31.08 | 10207239m | 0.03956 | ng    | -1.1 |
| 44) | C19(206) #2  | 32.18 | 9021058m  | 0.03879 | ng    | -3.0 |
| 45) | C110(209) #2 | 32.62 | 7069806m  | 0.03894 | ng    | -2.6 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7507.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0423\M7507.D\ECD2B.CH  
 Acq On : 11-7-2014 05:12:01 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:03:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.40    | 3434576m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.23    | 7932432m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 16878951  | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.80    | 40450051m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.41    | 1345940m  | 0.03840 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 96.00%  |
| 11) s C16(152)                     | 20.49    | 1878869m  | 0.04040 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 100.60% |
| 27) s C13(34) #2                   | 16.48    | 7035644m  | 0.03935 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 98.38%  |
| 34) s C16(152) #2                  | 23.58    | 8412302m  | 0.04132 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 102.89% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.22    | 828154    | 0.03883 | ng      |
| 3) C13(18)                         | 12.13    | 1016227m  | 0.03791 | ng      |
| 5) C13(28)                         | 14.21    | 1857620m  | 0.03970 | ng      |
| 6) C14(52)                         | 15.84    | 1369136m  | 0.03787 | ng      |
| 7) C14(44)                         | 16.71    | 1866523m  | 0.03960 | ng      |
| 8) C14(66)                         | 18.61    | 2024244m  | 0.03783 | ng      |
| 9) C15(101)                        | 19.74    | 1989996m  | 0.03780 | ng      |
| 12) C15(118)                       | 22.41    | 2159804m  | 0.03675 | ng      |
| 13) C16(153)                       | 23.45 TW | 2243151m  | 0.04063 | ng      |
| 14) C15(105)                       | 23.46 TW | 2676520m  | 0.03737 | ng      |
| 15) C16(138)                       | 24.55    | 2757784m  | 0.03867 | ng      |
| 16) C17(187)                       | 25.30    | 2487183m  | 0.04000 | ng      |
| 17) C16(128)                       | 25.65    | 2540700m  | 0.03690 | ng      |
| 18) C17(180)                       | 27.17    | 2960065m  | 0.04050 | ng      |
| 19) C17(170)                       | 27.97    | 3365575m  | 0.04072 | ng      |
| 20) C18(195)                       | 29.05    | 3250677m  | 0.04200 | ng      |
| 21) C19(206)                       | 30.31    | 3114117m  | 0.04174 | ng      |
| 22) C110(209)                      | 30.91    | 2570692m  | 0.04222 | ng      |
| 25) C12(8) #2                      | 13.11    | 4340429m  | 0.03829 | ng      |
| 26) C13(18) #2                     | 15.00    | 5014734m  | 0.03773 | ng      |
| 28) C13(28) #2                     | 17.77    | 8987385m  | 0.03677 | ng      |
| 29) C14(52) #2                     | 19.15    | 5709588m  | 0.03935 | ng      |
| 30) C14(44) #2                     | 19.97    | 10299812m | 0.04156 | ng      |
| 31) C14(66) #2                     | 22.37    | 11411106  | 0.04167 | ng      |
| 32) C15(101) #2                    | 23.25    | 6368316m  | 0.04113 | ng      |
| 35) C15(118) #2                    | 26.36    | 10616046m | 0.04113 | ng      |
| 36) C16(153) #2                    | 26.94    | 11244174  | 0.04147 | ng      |
| 37) C15(105) #2                    | 27.21    | 14542492  | 0.03983 | ng      |
| 38) C16(138) #2                    | 27.79    | 9570574m  | 0.03882 | ng      |
| 39) C17(187) #2                    | 28.15    | 11423817  | 0.04163 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7507.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0423\M7507.D\ECD2B.CH  
 Acq On : 11-7-2014 05:12:01 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:03:03 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 14:22:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.55 | 16176264  | 0.04213 | ng    |
| 41) | C17(180) #2  | 29.59 | 14883135  | 0.04340 | ng    |
| 42) | C17(170) #2  | 30.22 | 15987498m | 0.04282 | ng    |
| 43) | C18(195) #2  | 31.09 | 14903408m | 0.04355 | ng    |
| 44) | C19(206) #2  | 32.19 | 13588641m | 0.04406 | ng    |
| 45) | C110(209) #2 | 32.63 | 10694268m | 0.04448 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7518.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0423\M7518.D\ECD2B.CH  
 Acq On : 11-8-2014 01:23:37 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:25:48 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:25:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response  | Conc    | Units   |
|------------------------------------|--------|-----------|---------|---------|
| <b>Internal Standards</b>          |        |           |         |         |
| 1) I C15(96)                       | 17.40  | 3718834   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22  | 8628871   | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52  | 17962544m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79  | 41916063  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |        |           |         |         |
| 4) s C13(34)                       | 13.40  | 2718622   | 0.07847 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 98.09%  |
| 11) s C16(152)                     | 20.48  | 3577380   | 0.07442 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 92.65%  |
| 27) s C13(34) #2                   | 16.48  | 13607833m | 0.07662 | ng      |
| Spiked Amount                      | 0.0800 | Recovery  | =       | 95.77%  |
| 34) s C16(152) #2                  | 23.58  | 17679634m | 0.08632 | ng      |
| Spiked Amount                      | 0.0803 | Recovery  | =       | 107.47% |
| <b>Target Compounds</b>            |        |           |         |         |
| 2) C12(8)                          | 10.21  | 1627162   | 0.07671 | ng      |
| 3) C13(18)                         | 12.13  | 1964116   | 0.07444 | ng      |
| 5) C13(28)                         | 14.21  | 3923441   | 0.08257 | ng      |
| 6) C14(52)                         | 15.84  | 2726227   | 0.07759 | ng      |
| 7) C14(44)                         | 16.70  | 3761148m  | 0.07894 | ng      |
| 8) C14(66)                         | 18.60  | 4337655   | 0.08018 | ng      |
| 9) C15(101)                        | 19.74  | 4451065m  | 0.08219 | ng      |
| 12) C15(118)                       | 22.40  | 4431957   | 0.07356 | ng      |
| 13) C16(153)                       | 23.44  | 4535137m  | 0.07771 | ng      |
| 14) C15(105)                       | 23.46  | 6121187m  | 0.08462 | ng      |
| 15) C16(138)                       | 24.54  | 5663078   | 0.07628 | ng      |
| 16) C17(187)                       | 25.29  | 4976982   | 0.07675 | ng      |
| 17) C16(128)                       | 25.64  | 5553168m  | 0.07635 | ng      |
| 18) C17(180)                       | 27.16  | 5997935   | 0.07785 | ng      |
| 19) C17(170)                       | 27.96  | 6765145m  | 0.07736 | ng      |
| 20) C18(195)                       | 29.04  | 6529139   | 0.07952 | ng      |
| 21) C19(206)                       | 30.31  | 6263048m  | 0.07900 | ng      |
| 22) C110(209)                      | 30.90  | 5116127m  | 0.07953 | ng      |
| 25) C12(8) #2                      | 13.10  | 8271979m  | 0.07280 | ng      |
| 26) C13(18) #2                     | 15.00  | 9365664m  | 0.07241 | ng      |
| 28) C13(28) #2                     | 17.76  | 19199890m | 0.07798 | ng      |
| 29) C14(52) #2                     | 19.15  | 10419691m | 0.07126 | ng      |
| 30) C14(44) #2                     | 19.96  | 18791051m | 0.07428 | ng      |
| 31) C14(66) #2                     | 22.36  | 22827851m | 0.08202 | ng      |
| 32) C15(101) #2                    | 23.24  | 12023050m | 0.07506 | ng      |
| 35) C15(118) #2                    | 26.35  | 19665028m | 0.07681 | ng      |
| 36) C16(153) #2                    | 26.94  | 21897808  | 0.08130 | ng      |
| 37) C15(105) #2                    | 27.21  | 30386997  | 0.08131 | ng      |
| 38) C16(138) #2                    | 27.78  | 20406752m | 0.07930 | ng      |
| 39) C17(187) #2                    | 28.14  | 22441148  | 0.08067 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7518.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0423\M7518.D\ECD2B.CH  
 Acq On : 11-8-2014 01:23:37 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:25:48 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:25:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 32397053  | 0.08245 | ng    |
| 41) | C17(180) #2  | 29.59 | 29398040  | 0.08330 | ng    |
| 42) | C17(170) #2  | 30.22 | 32001753  | 0.08298 | ng    |
| 43) | C18(195) #2  | 31.09 | 30370110m | 0.08555 | ng    |
| 44) | C19(206) #2  | 32.18 | 27450045m | 0.08571 | ng    |
| 45) | C110(209) #2 | 32.62 | 22009598m | 0.08881 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7529.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0423\M7529.D\ECD2B.CH  
 Acq On : 11-8-2014 09:35:22 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:44:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:44:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.39    | 3751383   | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22    | 8260707m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 19093439m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 46464449  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 2733749m  | 0.07819 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 97.74%  |
| 11) s C16(152)                     | 20.48    | 3586354   | 0.07823 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 97.40%  |
| 27) s C13(34) #2                   | 16.48    | 14649316m | 0.07771 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 97.14%  |
| 34) s C16(152) #2                  | 23.57    | 18241756m | 0.08032 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 100.00% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 1655156   | 0.07745 | ng      |
| 3) C13(18)                         | 12.13    | 2005445   | 0.07550 | ng      |
| 5) C13(28)                         | 14.21    | 3901937m  | 0.08129 | ng      |
| 6) C14(52)                         | 15.84    | 2750707   | 0.07761 | ng      |
| 7) C14(44)                         | 16.70    | 3772695m  | 0.07844 | ng      |
| 8) C14(66)                         | 18.60    | 4268081   | 0.07801 | ng      |
| 9) C15(101)                        | 19.73    | 4007140m  | 0.07273 | ng      |
| 12) C15(118)                       | 22.40    | 4158587m  | 0.07197 | ng      |
| 13) C16(153)                       | 23.45 TW | 4525673m  | 0.08117 | ng      |
| 14) C15(105)                       | 23.46 TW | 5158869m  | 0.07349 | ng      |
| 15) C16(138)                       | 24.54    | 5456408   | 0.07681 | ng      |
| 16) C17(187)                       | 25.29    | 4795518m  | 0.07728 | ng      |
| 17) C16(128)                       | 25.64    | 5504651m  | 0.07919 | ng      |
| 18) C17(180)                       | 27.16    | 5705032m  | 0.07733 | ng      |
| 19) C17(170)                       | 27.96    | 6419413   | 0.07665 | ng      |
| 20) C18(195)                       | 29.04    | 6108166m  | 0.07764 | ng      |
| 21) C19(206)                       | 30.31    | 5782376m  | 0.07609 | ng      |
| 22) C110(209)                      | 30.90    | 4697678m  | 0.07613 | ng      |
| 25) C12(8) #2                      | 13.11    | 8992569m  | 0.07463 | ng      |
| 26) C13(18) #2                     | 14.99    | 10361432m | 0.07581 | ng      |
| 28) C13(28) #2                     | 17.76    | 20544618m | 0.07854 | ng      |
| 29) C14(52) #2                     | 19.15    | 11662090m | 0.07544 | ng      |
| 30) C14(44) #2                     | 19.96    | 22789369m | 0.08572 | ng      |
| 31) C14(66) #2                     | 22.36    | 24370433m | 0.08241 | ng      |
| 32) C15(101) #2                    | 23.24    | 12531871m | 0.07358 | ng      |
| 35) C15(118) #2                    | 26.35    | 21715136m | 0.07650 | ng      |
| 36) C16(153) #2                    | 26.94    | 23683075  | 0.07924 | ng      |
| 37) C15(105) #2                    | 27.20    | 33255856  | 0.08028 | ng      |
| 38) C16(138) #2                    | 27.78    | 24510129m | 0.08573 | ng      |
| 39) C17(187) #2                    | 28.14    | 24866000  | 0.08064 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7529.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0423\M7529.D\ECD2B.CH  
 Acq On : 11-8-2014 09:35:22 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:44:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:44:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 34524821m | 0.07925 | ng    |
| 41) | C17(180) #2  | 29.59 | 31678245m | 0.08098 | ng    |
| 42) | C17(170) #2  | 30.22 | 33650252m | 0.07875 | ng    |
| 43) | C18(195) #2  | 31.09 | 34402027m | 0.08739 | ng    |
| 44) | C19(206) #2  | 32.18 | 31930702m | 0.08987 | ng    |
| 45) | C110(209) #2 | 32.62 | 25551568m | 0.09298 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7540.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0423\M7540.D\ECD2B.CH  
 Acq On : 11-8-2014 05:45:56 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:54:20 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:54:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc    | Units   |
|-----------------------------|----------|-----------|---------|---------|
| Internal Standards          |          |           |         |         |
| 1) I C15(96)                | 17.40    | 3843679   | 0.10000 | ng      |
| 10) I C16(161)              | 23.22    | 8987186m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.52    | 18028230m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79    | 44794389  | 0.10000 | ng      |
| System Monitoring Compounds |          |           |         |         |
| 4) s C13(34)                | 13.40    | 1516634   | 0.03871 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 96.78%  |
| 11) s C16(152)              | 20.48    | 2127789   | 0.04038 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 100.55% |
| 27) s C13(34) #2            | 16.48    | 7363848m  | 0.03846 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 96.15%  |
| 34) s C16(152) #2           | 23.58    | 9469126m  | 0.04206 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 104.73% |
| Target Compounds            |          |           |         |         |
| 2) C12(8)                   | 10.21    | 925151    | 0.03875 | ng      |
| 3) C13(18)                  | 12.13    | 1141257   | 0.03806 | ng      |
| 5) C13(28)                  | 14.21    | 2126251   | 0.04070 | ng      |
| 6) C14(52)                  | 15.84    | 1565620   | 0.03887 | ng      |
| 7) C14(44)                  | 16.70    | 2117750m  | 0.04022 | ng      |
| 8) C14(66)                  | 18.60    | 2375299   | 0.03986 | ng      |
| 9) C15(101)                 | 19.73    | 2213208m  | 0.03755 | ng      |
| 12) C15(118)                | 22.39    | 2378441m  | 0.03561 | ng      |
| 13) C16(153)                | 23.44 TW | 2410025m  | 0.03843 | ng      |
| 14) C15(105)                | 23.45 TW | 3041500m  | 0.03749 | ng      |
| 15) C16(138)                | 24.54    | 3094517m  | 0.03827 | ng      |
| 16) C17(187)                | 25.29    | 2766445m  | 0.03922 | ng      |
| 17) C16(128)                | 25.64    | 2824581m  | 0.03618 | ng      |
| 18) C17(180)                | 27.16    | 3377834   | 0.04081 | ng      |
| 19) C17(170)                | 27.96    | 3696153m  | 0.03940 | ng      |
| 20) C18(195)                | 29.05    | 3588802m  | 0.04087 | ng      |
| 21) C19(206)                | 30.31    | 3484572m  | 0.04120 | ng      |
| 22) C110(209)               | 30.90    | 2897952   | 0.04200 | ng      |
| 25) C12(8) #2               | 13.11    | 4598089m  | 0.03794 | ng      |
| 26) C13(18) #2              | 14.99    | 5263764m  | 0.03696 | ng      |
| 28) C13(28) #2              | 17.76    | 9836953m  | 0.03776 | ng      |
| 29) C14(52) #2              | 19.15    | 6092092m  | 0.03930 | ng      |
| 30) C14(44) #2              | 19.97    | 11077464m | 0.04187 | ng      |
| 31) C14(66) #2              | 22.36    | 11909972m | 0.04065 | ng      |
| 32) C15(101) #2             | 23.25    | 6010830m  | 0.03592 | ng      |
| 35) C15(118) #2             | 26.36    | 11496904m | 0.04013 | ng      |
| 36) C16(153) #2             | 26.94    | 12623965  | 0.04210 | ng      |
| 37) C15(105) #2             | 27.20    | 15668336m | 0.03871 | ng      |
| 38) C16(138) #2             | 27.78    | 11066995m | 0.04054 | ng      |
| 39) C17(187) #2             | 28.14    | 12790846  | 0.04212 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7540.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0423\M7540.D\ECD2B.CH  
 Acq On : 11-8-2014 05:45:56 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:54:20 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:54:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 17835996  | 0.04194 | ng    |
| 41) | C17(180) #2  | 29.59 | 15752102m | 0.04143 | ng    |
| 42) | C17(170) #2  | 30.22 | 17279447m | 0.04177 | ng    |
| 43) | C18(195) #2  | 31.09 | 16239128m | 0.04284 | ng    |
| 44) | C19(206) #2  | 32.18 | 14870479m | 0.04353 | ng    |
| 45) | C110(209) #2 | 32.62 | 11797428m | 0.04431 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7551.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0423\M7551.D\ECD2B.CH  
 Acq On : 11-9-2014 01:58:24 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:11:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:11:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.    | Response  | Conc    | Units   |
|-----------------------------|---------|-----------|---------|---------|
| Internal Standards          |         |           |         |         |
| 1) I C15(96)                | 17.39   | 3751725   | 0.10000 | ng      |
| 10) I C16(161)              | 23.22   | 8549030m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.51   | 17039195m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79   | 42450268  | 0.10000 | ng      |
| System Monitoring Compounds |         |           |         |         |
| 4) s C13(34)                | 13.40   | 1463762   | 0.03821 | ng      |
| Spiked Amount               | 0.0400  | Recovery  | =       | 95.53%  |
| 11) s C16(152)              | 20.48   | 2016269m  | 0.04021 | ng      |
| Spiked Amount               | 0.0402  | Recovery  | =       | 100.12% |
| 27) s C13(34) #2            | 16.48   | 6964107m  | 0.03849 | ng      |
| Spiked Amount               | 0.0400  | Recovery  | =       | 96.23%  |
| 34) s C16(152) #2           | 23.57   | 9348477m  | 0.04397 | ng      |
| Spiked Amount               | 0.0402  | Recovery  | =       | 109.49% |
| Target Compounds            |         |           |         |         |
| 2) C12(8)                   | 10.21   | 877649    | 0.03750 | ng      |
| 3) C13(18)                  | 12.13   | 1100062   | 0.03750 | ng      |
| 5) C13(28)                  | 14.21   | 2011016   | 0.03931 | ng      |
| 6) C14(52)                  | 15.83   | 1496649   | 0.03790 | ng      |
| 7) C14(44)                  | 16.70   | 2035261m  | 0.03953 | ng      |
| 8) C14(66)                  | 18.60   | 2231011   | 0.03820 | ng      |
| 9) C15(101)                 | 19.73   | 2208555m  | 0.03845 | ng      |
| 12) C15(118)                | 22.39   | 2232797m  | 0.03509 | ng      |
| 13) C16(153)                | 23.45 T | 2318793m  | 0.03889 | ng      |
| 14) C15(105)                | 23.45 T | 3033397m  | 0.03950 | ng      |
| 15) C16(138)                | 24.53   | 2951341m  | 0.03838 | ng      |
| 16) C17(187)                | 25.29   | 2659254m  | 0.03966 | ng      |
| 17) C16(128)                | 25.64   | 2820245m  | 0.03805 | ng      |
| 18) C17(180)                | 27.16   | 3119988m  | 0.03955 | ng      |
| 19) C17(170)                | 27.96   | 3521640m  | 0.03947 | ng      |
| 20) C18(195)                | 29.04   | 3419974m  | 0.04095 | ng      |
| 21) C19(206)                | 30.31   | 3329650m  | 0.04139 | ng      |
| 22) C110(209)               | 30.90   | 2761508m  | 0.04208 | ng      |
| 25) C12(8) #2               | 13.10   | 4366722m  | 0.03814 | ng      |
| 26) C13(18) #2              | 14.99   | 4971479m  | 0.03693 | ng      |
| 28) C13(28) #2              | 17.76   | 8905066m  | 0.03604 | ng      |
| 29) C14(52) #2              | 19.14   | 5483189m  | 0.03724 | ng      |
| 30) C14(44) #2              | 19.96   | 9765448m  | 0.03885 | ng      |
| 31) C14(66) #2              | 22.36   | 11083160m | 0.03997 | ng      |
| 32) C15(101) #2             | 23.24   | 6181574m  | 0.03941 | ng      |
| 35) C15(118) #2             | 26.35   | 10234601m | 0.03746 | ng      |
| 36) C16(153) #2             | 26.93   | 10668579m | 0.03711 | ng      |
| 37) C15(105) #2             | 27.20   | 14422890m | 0.03755 | ng      |
| 38) C16(138) #2             | 27.78   | 11207303m | 0.04333 | ng      |
| 39) C17(187) #2             | 28.14   | 12044255  | 0.04183 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7551.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0423\M7551.D\ECD2B.CH  
 Acq On : 11-9-2014 01:58:24 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:11:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:11:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 16065969m | 0.03978 | ng    |
| 41) | C17(180) #2  | 29.58 | 14781380m | 0.04101 | ng    |
| 42) | C17(170) #2  | 30.21 | 16093201m | 0.04103 | ng    |
| 43) | C18(195) #2  | 31.09 | 15294545m | 0.04257 | ng    |
| 44) | C19(206) #2  | 32.18 | 14073806m | 0.04347 | ng    |
| 45) | C110(209) #2 | 32.62 | 11203443m | 0.04440 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7562.D\ECD1A.CH Vial: 57  
 Signal #2 : I:\M\DATA\SM0423\M7562.D\ECD2B.CH  
 Acq On : 09 Nov 2014 10:09 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:24:30 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:24:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.40    | 3623258m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.22    | 7822875m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 19132613m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 49440212m | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 2593807   | 0.07662 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 95.77%  |
| 11) s C16(152)                     | 20.48    | 3540517   | 0.08183 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 101.88% |
| 27) s C13(34) #2                   | 16.48    | 14288566m | 0.07542 | ng      |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 94.27%  |
| 34) s C16(152) #2                  | 23.57    | 20001012m | 0.08278 | ng      |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 103.06% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 1536995   | 0.07404 | ng      |
| 3) C13(18)                         | 12.13    | 1928005   | 0.07509 | ng      |
| 5) C13(28)                         | 14.21    | 3522465m  | 0.07546 | ng      |
| 6) C14(52)                         | 15.84    | 2544044m  | 0.07380 | ng      |
| 7) C14(44)                         | 16.70    | 3528329m  | 0.07568 | ng      |
| 8) C14(66)                         | 18.60    | 3827069m  | 0.07187 | ng      |
| 9) C15(101)                        | 19.74    | 3986373m  | 0.07507 | ng      |
| 12) C15(118)                       | 22.40    | 3826363m  | 0.06975 | ng      |
| 13) C16(153)                       | 23.44 TW | 4003325m  | 0.07556 | ng      |
| 14) C15(105)                       | 23.45 TW | 5309832m  | 0.08058 | ng      |
| 15) C16(138)                       | 24.54    | 5245988   | 0.07805 | ng      |
| 16) C17(187)                       | 25.29    | 4574959m  | 0.07789 | ng      |
| 17) C16(128)                       | 25.64    | 5251642m  | 0.07981 | ng      |
| 18) C17(180)                       | 27.16    | 5426114m  | 0.07768 | ng      |
| 19) C17(170)                       | 27.96    | 6139810m  | 0.07745 | ng      |
| 20) C18(195)                       | 29.04    | 5969741m  | 0.08022 | ng      |
| 21) C19(206)                       | 30.31    | 5762167m  | 0.08021 | ng      |
| 22) C110(209)                      | 30.90    | 4739183m  | 0.08135 | ng      |
| 25) C12(8) #2                      | 13.11    | 8851312m  | 0.07317 | ng      |
| 26) C13(18) #2                     | 15.00    | 10113388m | 0.07356 | ng      |
| 28) C13(28) #2                     | 17.76    | 19338611m | 0.07340 | ng      |
| 29) C14(52) #2                     | 19.15    | 11062691m | 0.07100 | ng      |
| 30) C14(44) #2                     | 19.97    | 22976040m | 0.08630 | ng      |
| 31) C14(66) #2                     | 22.36    | 24196730m | 0.08160 | ng      |
| 32) C15(101) #2                    | 23.24    | 13388247m | 0.07853 | ng      |
| 35) C15(118) #2                    | 26.35    | 20663569m | 0.06794 | ng      |
| 36) C16(153) #2                    | 26.94    | 22458388m | 0.07023 | ng      |
| 37) C15(105) #2                    | 27.20    | 32330761m | 0.07333 | ng      |
| 38) C16(138) #2                    | 27.78    | 24818428m | 0.08170 | ng      |
| 39) C17(187) #2                    | 28.14    | 25148855m | 0.07658 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7562.D\ECD1A.CH Vial: 57  
 Signal #2 : I:\M\DATA\SM0423\M7562.D\ECD2B.CH  
 Acq On : 09 Nov 2014 10:09 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 16:24:30 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 16:24:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 35747662m | 0.07711 | ng    |
| 41) | C17(180) #2  | 29.59 | 33587863m | 0.08070 | ng    |
| 42) | C17(170) #2  | 30.22 | 37097759m | 0.08156 | ng    |
| 43) | C18(195) #2  | 31.09 | 35603688m | 0.08504 | ng    |
| 44) | C19(206) #2  | 32.18 | 33840769m | 0.08952 | ng    |
| 45) | C110(209) #2 | 32.62 | 26501879m | 0.09065 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2038180   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 12872032m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 102746m   | 0.00162 | ng    |
| 5) C15(101) #2     | 23.23 | 516701m   | 0.00035 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7205.D MM0417F.M Fri Dec 05 16:10:49 2014

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc    | Units |
|--------------------|-------|----------|---------|-------|
| Internal Standards |       |          |         |       |
| 1) I C15(96)       | 17.39 | 2103011  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13386960 | 0.10000 | ng    |
| Target Compounds   |       |          |         |       |
| 2) C15(101)        | 19.73 | 341674m  | 0.00915 | ng    |
| 5) C15(101) #2     | 23.22 | 3258192m | 0.02515 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7207.D MM0417F.M Fri Dec 05 16:10:55 2014

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2225995   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13612237m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 753837m   | 0.02114 | ng    |
| 5) C15(101) #2     | 23.22 | 5441576m  | 0.04378 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7208.D MM0417F.M Fri Dec 05 16:10:57 2014

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:46 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2400478   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14869473m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1636592m  | 0.04499 | ng    |
| 5) C15(101) #2     | 23.21 | 11842524m | 0.08946 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7209.D MM0417F.M Fri Dec 05 16:10:58 2014



Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2523572   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15494530m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2973113m  | 0.08080 | ng    |
| 5) C15(101) #2     | 23.21 | 25660002m | 0.18179 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7210.D MM0417F.M Fri Dec 05 16:11:00 2014

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.    | Response  | Conc    | Units |
|--------------------|---------|-----------|---------|-------|
| Internal Standards |         |           |         |       |
| 1) I C15(96)       | 17.39   | 2539311m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51   | 15194166m | 0.10000 | ng    |
| Target Compounds   |         |           |         |       |
| 2) C15(101)        | 19.74   | 11042195m | 0.36809 | ng    |
| 5) C15(101) #2     | 23.22 e | 68456197m | 0.44286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7212.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:24:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:22:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |      |
|--------------------|-------|-----------|---------|-------|------|
| Internal Standards |       |           |         |       |      |
| 1) I C15(96)       | 17.39 | 2508888   | 0.10000 | ng    |      |
| 4) I C15(96) #2    | 20.51 | 13936712m | 0.10000 | ng    |      |
| Target Compounds   |       |           |         |       |      |
| 2) C15(101)        | 19.73 | 1516710m  | 0.03859 | ng    | -3.5 |
| 5) C15(101) #2     | 23.21 | 11320633m | 0.03850 | ng    | -3.8 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7213.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0423\M7507.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0423\M7507.D\ECD2B.CH  
 Acq On : 11-7-2014 05:12:01 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:13 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 08:53:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3442942m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16878951  | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.75 | 2182124m  | 0.04057 | ng    |
| 5) C15(101) #2     | 23.23 | 13156076m | 0.03692 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7507.D MM0417F.M Mon Dec 08 11:01:51 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7518.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0423\M7518.D\ECD2B.CH  
 Acq On : 11-8-2014 01:23:37 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:01 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3718834   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17789588m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4901723m  | 0.08778 | ng    |
| 5) C15(101) #2     | 23.21 | 29390001m | 0.08153 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7518.D MM0417F.M Mon Dec 08 11:02:10 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7529.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0423\M7529.D\ECD2B.CH  
 Acq On : 11-8-2014 09:35:22 AM Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3751383   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 19209692m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4591671m  | 0.08119 | ng    |
| 5) C15(101) #2     | 23.21 | 33338441m | 0.08610 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7529.D MM0417F.M Mon Dec 08 11:02:26 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7540.D\ECD1A.CH Vial: 35  
 Signal #2 : I:\M\DATA\SM0423\M7540.D\ECD2B.CH  
 Acq On : 11-8-2014 05:45:56 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:51 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3843679   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17750585m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2255746m  | 0.03739 | ng    |
| 5) C15(101) #2     | 23.22 | 14945771m | 0.03994 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7540.D MM0417F.M Mon Dec 08 11:02:31 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7551.D\ECD1A.CH Vial: 46  
 Signal #2 : I:\M\DATA\SM0423\M7551.D\ECD2B.CH  
 Acq On : 11-9-2014 01:58:24 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:54:07 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:59 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3751725   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 17017851m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2336180m  | 0.03982 | ng    |
| 5) C15(101) #2     | 23.21 | 14492358m | 0.04041 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7551.D MM0417F.M Mon Dec 08 11:02:34 2014 046776CFS



Signal #1 : I:\M\DATA\SM0423\M7562.D\ECD1A.CH Vial: 57  
 Signal #2 : I:\M\DATA\SM0423\M7562.D\ECD2B.CH  
 Acq On : 09 Nov 2014 10:09 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:54:21 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:54:14 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 3597732m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 19215719m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 4317658m  | 0.07953 | ng    |
| 5) C15(101) #2     | 23.22 | 29349850m | 0.07480 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7562.D MM0417F.M Mon Dec 08 11:02:39 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7508.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0423\M7508.D\ECD2B.CH  
 Acq On : 11-7-2014 05:56:32 PM Operator: RR  
 Sample : CD586PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:59:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:59:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3500251   | 100.00000 | ng      |
| 10) I C16(161)                     | 23.22    | 6760589m  | 100.00000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 15448268m | 100.00000 | ng      |
| 33) I C16(161) #2                  | 26.80    | 36429176m | 100.00000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.41    | 8541116   | 349.45851 | ng      |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 87.36%  |
| 11) s C16(152)                     | 20.49    | 12494524m | 401.87396 | ng      |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 100.07% |
| 27) s C13(34) #2                   | 16.48    | 45539395m | 393.89581 | ng      |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 98.47%  |
| 34) s C16(152) #2                  | 23.63    | 63379901m | 324.17876 | ng      |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 80.72%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.04    | 840       | BelowCal  | ng      |
| 3) C13(18)                         | 0.00     | 0d        | N.D.      | ng      |
| 5) C13(28)                         | 0.00     | 0d        | N.D.      | ng      |
| 6) C14(52)                         | 0.00     | 0d        | N.D.      | ng      |
| 7) C14(44)                         | 0.00     | 0d        | N.D.      | ng      |
| 8) C14(66)                         | 0.00     | 0d        | N.D.      | ng      |
| 9) C15(101)                        | 0.00     | 0d        | N.D.      | ng      |
| 12) C15(118)                       | 0.00     | 0d        | N.D.      | ng      |
| 13) C16(153)                       | 0.00     | 0d        | N.D.      | ng      |
| 14) C15(105)                       | 0.00     | 0d        | N.D.      | ng      |
| 15) C16(138)                       | 0.00     | 0d        | N.D.      | ng      |
| 16) C17(187)                       | 0.00     | 0d        | N.D.      | ng      |
| 17) C16(128)                       | 0.00     | 0d        | N.D.      | ng      |
| 18) C17(180)                       | 0.00     | 0d        | N.D.      | ng      |
| 19) C17(170)                       | 0.00     | 0d        | N.D.      | ng      |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng      |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng      |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng      |
| 25) C12(8) #2                      | 13.11    | 239819    | BelowCal  | ng      |
| 26) C13(18) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 28) C13(28) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 29) C14(52) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 30) C14(44) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 31) C14(66) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 32) C15(101) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 35) C15(118) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 36) C16(153) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 37) C15(105) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 38) C16(138) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 39) C17(187) #2                    | 0.00     | 0d        | N.D.      | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7508.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0423\M7508.D\ECD2B.CH  
 Acq On : 11-7-2014 05:56:32 PM Operator: RR  
 Sample : CD586PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:59:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:59:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7509.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0423\M7509.D\ECD2B.CH  
 Acq On : 11-7-2014 06:40:55 PM Operator: RR  
 Sample : CD587LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:59:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:59:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |      |
|-----------------------------|----------|-----------|-----------|--------|------|
| Internal Standards          |          |           |           |        |      |
| 1) I C15(96)                | 17.40    | 3678408   | 100.00000 | ng     |      |
| 10) I C16(161)              | 23.22    | 7211167   | 100.00000 | ng     |      |
| 24) I C15(96) #2            | 20.52    | 16443161m | 100.00000 | ng     |      |
| 33) I C16(161) #2           | 26.80    | 38220438m | 100.00000 | ng     |      |
| System Monitoring Compounds |          |           |           |        |      |
| 4) s C13(34)                | 13.40    | 8969369   | 349.06106 | ng     | 87%  |
| Spiked Amount               | 400.0000 | Recovery  | =         | 87.27% |      |
| 11) s C16(152)              | 20.49    | 12947904  | 387.44396 | ng     | 96%  |
| Spiked Amount               | 401.6000 | Recovery  | =         | 96.48% |      |
| 27) s C13(34) #2            | 16.48    | 48277608m | 391.48799 | ng     | 98%  |
| Spiked Amount               | 400.0000 | Recovery  | =         | 97.87% |      |
| 34) s C16(152) #2           | 23.63    | 76703874m | 366.41650 | ng     | 91%  |
| Spiked Amount               | 401.6000 | Recovery  | =         | 91.24% |      |
| Target Compounds            |          |           |           |        |      |
| 2) C12(8)                   | 10.21    | 671500    | 28.07946  | ng     | 75%  |
| 3) C13(18)                  | 12.13    | 833561    | 27.53494  | ng     | 73%  |
| 5) C13(28)                  | 14.21    | 1545540   | 30.05717  | ng     | 80%  |
| 6) C14(52)                  | 15.84    | 1158103   | 28.32826  | ng     | 76%  |
| 7) C14(44)                  | 16.71    | 1585359   | 30.51378  | ng     | 81%  |
| 8) C14(66)                  | 18.60    | 1709436   | 29.03847  | ng     | 77%  |
| 9) C15(101)                 | 19.74    | 1733122m  | 30.27066  | ng     | 81%  |
| 12) C15(118)                | 22.40    | 1864474   | 34.70306  | ng     | 93%  |
| 13) C16(153)                | 23.45 TW | 1922848m  | 38.20572  | ng     | 102% |
| 14) C15(105)                | 23.46 TW | 2057364m  | 31.04102  | ng     | 83%  |
| 15) C16(138)                | 24.55    | 2334186   | 35.79819  | ng     | 95%  |
| 16) C17(187)                | 25.30    | 2017097   | 35.35507  | ng     | 94%  |
| 17) C16(128)                | 25.64    | 1813950m  | 28.71392  | ng     | 77%  |
| 18) C17(180)                | 27.17    | 2361376   | 35.24816  | ng     | 94%  |
| 19) C17(170)                | 27.96    | 2609653m  | 34.42379  | ng     | 92%  |
| 20) C18(195)                | 29.05    | 2560360m  | 36.12568  | ng     | 96%  |
| 21) C19(206)                | 30.31    | 2381808m  | 34.84030  | ng     | 93%  |
| 22) C110(209)               | 30.90    | 2041908m  | 36.62183  | ng     | 98%  |
| 25) C12(8) #2               | 13.11    | 3624241m  | 32.26461  | ng     | 86%  |
| 26) C13(18) #2              | 15.00    | 4196029m  | 31.46558  | ng     | 84%  |
| 28) C13(28) #2              | 17.77    | 7734536m  | 32.14675  | ng     | 86%  |
| 29) C14(52) #2              | 19.15    | 5042417m  | 35.30158  | ng     | 94%  |
| 30) C14(44) #2              | 19.97    | 8691427m  | 35.60685  | ng     | 95%  |
| 31) C14(66) #2              | 22.36    | 9368622m  | 34.65081  | ng     | 92%  |
| 32) C15(101) #2             | 23.25    | 4655618m  | 29.92142  | ng     | 80%  |
| 35) C15(118) #2             | 26.36    | 9685438m  | 39.57196  | ng     | 106% |
| 36) C16(153) #2             | 26.94    | 10423582  | 40.61371  | ng     | 108% |
| 37) C15(105) #2             | 27.21    | 13533411  | 39.20289  | ng     | 105% |
| 38) C16(138) #2             | 27.79    | 8263347m  | 35.44250  | ng     | 95%  |
| 39) C17(187) #2             | 28.14    | 9643635m  | 36.93422  | ng     | 98%  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7509.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0423\M7509.D\ECD2B.CH  
 Acq On : 11-7-2014 06:40:55 PM Operator: RR  
 Sample : CD587LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 15:59:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 15:59:53 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |      |
|-----|--------------|-------|-----------|----------|-------|------|
| 40) | C16(128) #2  | 28.55 | 13372770m | 36.64993 | ng    | 98%  |
| 41) | C17(180) #2  | 29.59 | 12032155m | 36.94300 | ng    | 99%  |
| 42) | C17(170) #2  | 30.22 | 15210448  | 43.11658 | ng    | 115% |
| 43) | C18(195) #2  | 31.09 | 11915694m | 36.73435 | ng    | 98%  |
| 44) | C19(206) #2  | 32.19 | 10437788m | 35.69919 | ng    | 95%  |
| 45) | C110(209) #2 | 32.63 | 8589308m  | 37.64810 | ng    | 100% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7510.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0423\M7510.D\ECD2B.CH  
 Acq On : 11-7-2014 07:25:27 PM Operator: RR  
 Sample : M8157-P(2) Inst : INST. M  
 Misc : NBH14-0021 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:52:37 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3606887   | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7126224   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 14883017m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.80    | 33506285m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.41    | 8775803   | 330.47096 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 87.00% |
| 11) s C16(152)                     | 20.49    | 12265199m | 349.10295 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 91.54% |
| 27) s C13(34) #2                   | 16.48    | 43366279m | 367.65654 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 96.79% |
| 34) s C16(152) #2                  | 23.63    | 58127035  | 307.20379 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 80.55% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.22    | 300050    | 9.82599   | ng     |
| 3) C13(18)                         | 12.13    | 639889    | 19.28328  | ng     |
| 5) C13(28)                         | 14.20    | 2253037m  | 44.16447  | ng     |
| 6) C14(52)                         | 15.84    | 2123033   | 57.08882  | ng     |
| 7) C14(44)                         | 16.71    | 1296479   | 23.55792  | ng     |
| 8) C14(66)                         | 18.63    | 1549255m  | 25.24899  | ng     |
| 9) C15(101)                        | 19.72    | 2425028   | 42.11171  | ng     |
| 12) C15(118)                       | 22.40    | 3234548m  | 61.09103  | ng     |
| 13) C16(153)                       | 23.44    | 2468393m  | 47.70758  | ng     |
| 14) C15(105)                       | 23.46    | 1436938m  | 19.96715  | ng     |
| 15) C16(138)                       | 24.54    | 3402567m  | 51.64459  | ng     |
| 16) C17(187)                       | 25.30    | 356241m   | 4.00654   | ng     |
| 17) C16(128)                       | 25.63    | 952199m   | 14.08661  | ng     |
| 18) C17(180)                       | 27.16    | 600960m   | 7.15576   | ng     |
| 19) C17(170)                       | 27.97    | 499333m   | 4.96473   | ng     |
| 20) C18(195)                       | 29.04    | 88338m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 67283m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.91    | 37206m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 1343460m  | 10.84316  | ng     |
| 26) C13(18) #2                     | 15.00    | 3066916m  | 22.99889  | ng     |
| 28) C13(28) #2                     | 17.77    | 11508640m | 52.24128  | ng     |
| 29) C14(52) #2                     | 19.15    | 10131144m | 80.82794  | ng     |
| 30) C14(44) #2                     | 19.96    | 7124885   | 30.39458  | ng     |
| 31) C14(66) #2                     | 22.36    | 6054186m  | 22.79726  | ng     |
| 32) C15(101) #2                    | 23.23    | 6398444m  | 44.96658  | ng     |
| 35) C15(118) #2                    | 26.34    | 14397715m | 66.47669  | ng     |
| 36) C16(153) #2                    | 26.94    | 10643785  | 45.56225  | ng     |
| 37) C15(105) #2                    | 27.21    | 7011932   | 21.33729  | ng     |
| 38) C16(138) #2                    | 27.78    | 11966127  | 55.59618  | ng     |
| 39) C17(187) #2                    | 28.14    | 1762692m  | 5.22898   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7510.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0423\M7510.D\ECD2B.CH  
 Acq On : 11-7-2014 07:25:27 PM Operator: RR  
 Sample : M8157-P(2) Inst : INST. M  
 Misc : NBH14-0021 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:52:37 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 4663579m | 12.69718 | ng    |
| 41) | C17(180) #2  | 29.59 | 2932036m | 8.51453  | ng    |
| 42) | C17(170) #2  | 30.22 | 2165233m | 5.48958  | ng    |
| 43) | C18(195) #2  | 31.09 | 325534m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.19 | 271923m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.63 | 136842m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7510.D MM0417C.M Mon Nov 24 14:05:53 2014 046776CFS

Data File : I:\M\DATA\SM0423\M7511.D\ECD1A.CH Vial: 6  
 Acq On : 11-7-2014 08:09:52 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : NBH14-0077 5-128 14-0496 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0423\M7511.D\ECD2B.CH Vial: 6  
 Acq On : 11-7-2014 08:09:51 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Nov 24 07:52:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)

Title : NBH  
 Last Update : Mon Nov 24 07:52:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units   |
|-----------------------------|----------|-----------|-----------|---------|
| Internal Standards          |          |           |           |         |
| 1) I C15(96)                | 17.40    | 3661050m  | 95.00000  | ng      |
| 10) I C16(161)              | 23.22    | 7429651m  | 95.00000  | ng      |
| 24) I C15(96) #2            | 20.52    | 14542091m | 95.00000  | ng      |
| 33) I C16(161) #2           | 26.79    | 32696655m | 95.00000  | ng      |
| System Monitoring Compounds |          |           |           |         |
| 4) s C13(34)                | 13.40    | 9348216m  | 357.35869 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 94.07%  |
| 11) s C16(152)              | 20.49    | 11640302m | 311.16416 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 81.59%  |
| 27) s C13(34) #2            | 16.48    | 43921541m | 388.52420 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 102.28% |
| 34) s C16(152) #2           | 23.63    | 51474148m | 282.31761 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 74.02%  |
| Target Compounds            |          |           |           |         |
| 2) C12(8)                   | 10.21    | 417013    | 14.97362  | ng      |
| 3) C13(18)                  | 12.14    | 350391    | 8.08191   | ng      |
| 5) C13(28)                  | 14.21    | 2825340m  | 55.65169  | ng      |
| 6) C14(52)                  | 15.84    | 1032793m  | 23.40959  | ng      |
| 7) C14(44)                  | 16.71    | 658143m   | 10.12986  | ng      |
| 8) C14(66)                  | 18.61    | 1951171m  | 32.14353  | ng      |
| 9) C15(101)                 | 19.72    | 1737504   | 28.98297  | ng      |
| 12) C15(118)                | 22.40    | 4048245m  | 74.52264  | ng      |
| 13) C16(153)                | 23.44    | 3404048m  | 63.92036  | ng      |
| 14) C15(105)                | 23.46    | 1616120m  | 21.76286  | ng      |
| 15) C16(138)                | 24.54    | 3981241m  | 58.40606  | ng      |
| 16) C17(187)                | 25.30    | 547705m   | 7.03003   | ng      |
| 17) C16(128)                | 25.64    | 1148530m  | 16.41873  | ng      |
| 18) C17(180)                | 27.16    | 706942m   | 8.32045   | ng      |
| 19) C17(170)                | 27.97    | 627442m   | 6.32313   | ng      |
| 20) C18(195)                | 29.05    | 131573m   | 0.24351   | ng      |
| 21) C19(206)                | 30.31    | 165623m   | 0.99469   | ng      |
| 22) C110(209)               | 30.91    | 69971m    | BelowCal  | ng      |
| 25) C12(8) #2               | 13.11    | 1759384m  | 15.45722  | ng      |
| 26) C13(18) #2              | 14.99    | 1624014m  | 9.97423   | ng      |
| 28) C13(28) #2              | 17.77    | 8962086m  | 40.91165  | ng      |
| 29) C14(52) #2              | 19.15    | 4418257m  | 33.19346  | ng      |
| 30) C14(44) #2              | 19.96    | 3181524m  | 12.77668  | ng      |
| 31) C14(66) #2              | 22.36    | 8133121m  | 32.26399  | ng      |
| 32) C15(101) #2             | 23.23    | 4598126m  | 32.17820  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Data File : I:\M\DATA\SM0423\M7511.D\ECD1A.CH Vial: 6  
 Acq On : 11-7-2014 08:09:52 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : NBH14-0077 5-128 14-0496 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0423\M7511.D\ECD2B.CH Vial: 6  
 Acq On : 11-7-2014 08:09:51 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Nov 24 07:52:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)

Title : NBH  
 Last Update : Mon Nov 24 07:52:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 35) | C15(118) #2  | 26.34 | 17593375m | 84.34282 | ng    |
| 36) | C16(153) #2  | 26.94 | 12958513m | 57.75428 | ng    |
| 37) | C15(105) #2  | 27.21 | 6772803m  | 21.10193 | ng    |
| 38) | C16(138) #2  | 27.78 | 12399144m | 58.98633 | ng    |
| 39) | C17(187) #2  | 28.14 | 2840887m  | 10.38708 | ng    |
| 40) | C16(128) #2  | 28.55 | 5131563m  | 14.57367 | ng    |
| 41) | C17(180) #2  | 29.59 | 3324085m  | 10.18575 | ng    |
| 42) | C17(170) #2  | 30.22 | 2483026m  | 6.70955  | ng    |
| 43) | C18(195) #2  | 31.09 | 448747m   | 0.27700  | ng    |
| 44) | C19(206) #2  | 32.19 | 535084m   | 0.97275  | ng    |
| 45) | C110(209) #2 | 32.63 | 282525m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7512.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0423\M7512.D\ECD2B.CH  
 Acq On : 11-7-2014 08:54:35 PM Operator: RR  
 Sample : M8172-P(2) Inst : INST. M  
 Misc : NBH14-0089 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:52:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:52:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.40    | 3497272m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 6819154m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 17235230m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 41696747m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8835062   | 351.07027 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 92.42% |
| 11) s C16(152)                     | 20.48    | 11320121m | 333.87223 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 87.54% |
| 27) s C13(34) #2                   | 16.48    | 49851761m | 363.60632 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 95.72% |
| 34) s C16(152) #2                  | 23.63    | 63094435m | 272.68217 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 71.50% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 205038m   | 5.74789   | ng     |
| 3) C13(18)                         | 12.13    | 210706m   | 3.29980   | ng     |
| 5) C13(28)                         | 14.20    | 1068010m  | 19.96499  | ng     |
| 6) C14(52)                         | 15.84    | 531867m   | 9.70468   | ng     |
| 7) C14(44)                         | 16.70    | 350420m   | 4.27495   | ng     |
| 8) C14(66)                         | 18.61    | 1042833m  | 16.60156  | ng     |
| 9) C15(101)                        | 19.72    | 914706    | 15.08019  | ng     |
| 12) C15(118)                       | 22.40    | 1746846m  | 32.63009  | ng     |
| 13) C16(153)                       | 23.43    | 1440184m  | 28.43057  | ng     |
| 14) C15(105)                       | 23.46    | 646942m   | 8.03453   | ng     |
| 15) C16(138)                       | 24.54    | 1744031m  | 26.29456  | ng     |
| 16) C17(187)                       | 25.29    | 245053m   | 2.21916   | ng     |
| 17) C16(128)                       | 25.63    | 526454m   | 7.84001   | ng     |
| 18) C17(180)                       | 27.16    | 288869m   | 2.64455   | ng     |
| 19) C17(170)                       | 27.97    | 267479m   | 2.05416   | ng     |
| 20) C18(195)                       | 29.04    | 53887m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.31    | 86231m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.90    | 49917m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.11    | 1045932m  | 6.43398   | ng     |
| 26) C13(18) #2                     | 14.99    | 1229619m  | 4.49457   | ng     |
| 28) C13(28) #2                     | 17.77    | 5789100m  | 21.10740  | ng     |
| 29) C14(52) #2                     | 19.15    | 2672775m  | 15.45689  | ng     |
| 30) C14(44) #2                     | 19.96    | 2026178m  | 6.03790   | ng     |
| 31) C14(66) #2                     | 22.36    | 5425689m  | 17.13768  | ng     |
| 32) C15(101) #2                    | 23.23    | 3166646m  | 17.04325  | ng     |
| 35) C15(118) #2                    | 26.34    | 10704821m | 38.13535  | ng     |
| 36) C16(153) #2                    | 26.94    | 7659095m  | 24.72756  | ng     |
| 37) C15(105) #2                    | 27.21    | 4236328m  | 9.40268   | ng     |
| 38) C16(138) #2                    | 27.78    | 7348177m  | 27.35546  | ng     |
| 39) C17(187) #2                    | 28.14    | 1758548m  | 3.65627   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7512.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0423\M7512.D\ECD2B.CH  
 Acq On : 11-7-2014 08:54:35 PM Operator: RR  
 Sample : M8172-P(2) Inst : INST. M  
 Misc : NBH14-0089 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:52:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:52:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3020724m | 5.62512  | ng    |
| 41) | C17(180) #2  | 29.59 | 1908056m | 3.57410  | ng    |
| 42) | C17(170) #2  | 30.22 | 1657235m | 2.80454  | ng    |
| 43) | C18(195) #2  | 31.09 | 254368m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 225536m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.64 | 166220m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7513.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0423\M7513.D\ECD2B.CH  
 Acq On : 11-7-2014 09:39:31 PM Operator: RR  
 Sample : M8173-P(2) Inst : INST. M  
 Misc : NBH14-0093 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:36:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:36:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3596588m  | 95.00000  | ng      |
| 10) I C16(161)                     | 23.23    | 7718853m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14123699m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.80    | 32817040m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9808291   | 401.55619 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 105.71% |
| 11) s C16(152)                     | 20.49    | 12087102m | 310.96827 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 81.54%  |
| 27) s C13(34) #2                   | 16.48    | 44816721m | 420.83129 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 110.78% |
| 34) s C16(152) #2                  | 23.63    | 53786886m | 292.42002 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 76.67%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 639886m   | 25.87615  | ng      |
| 3) C13(18)                         | 12.14    | 532403m   | 15.22534  | ng      |
| 5) C13(28)                         | 14.20    | 3819609m  | 79.01649  | ng      |
| 6) C14(52)                         | 15.84    | 1829663m  | 48.11221  | ng      |
| 7) C14(44)                         | 16.71    | 1255246m  | 22.76995  | ng      |
| 8) C14(66)                         | 18.61    | 3211848m  | 56.76985  | ng      |
| 9) C15(101)                        | 19.72    | 3208227   | 56.96507  | ng      |
| 12) C15(118)                       | 22.40    | 7707912m  | 145.12902 | ng      |
| 13) C16(153)                       | 23.44    | 5549347m  | 102.76709 | ng      |
| 14) C15(105)                       | 23.46    | 2688732m  | 36.76739  | ng      |
| 15) C16(138)                       | 24.54    | 7099804m  | 103.81559 | ng      |
| 16) C17(187)                       | 25.30    | 952102m   | 13.37708  | ng      |
| 17) C16(128)                       | 25.63    | 2046231m  | 28.80561  | ng      |
| 18) C17(180)                       | 27.16    | 1171694m  | 14.42822  | ng      |
| 19) C17(170)                       | 27.97    | 1072926m  | 11.48366  | ng      |
| 20) C18(195)                       | 29.05    | 200445m   | 1.07195   | ng      |
| 21) C19(206)                       | 30.30    | 261133m   | 2.18873   | ng      |
| 22) C110(209)                      | 30.91    | 119539m   | 0.44494   | ng      |
| 25) C12(8) #2                      | 13.11    | 2836805m  | 27.63053  | ng      |
| 26) C13(18) #2                     | 15.00    | 2685492m  | 20.78087  | ng      |
| 28) C13(28) #2                     | 17.77    | 15632982m | 76.93930  | ng      |
| 29) C14(52) #2                     | 19.15    | 8218443m  | 67.92632  | ng      |
| 30) C14(44) #2                     | 19.96    | 5591821m  | 24.73213  | ng      |
| 31) C14(66) #2                     | 22.36    | 14041078m | 59.86380  | ng      |
| 32) C15(101) #2                    | 23.23    | 8382552m  | 63.04764  | ng      |
| 35) C15(118) #2                    | 26.34    | 31375078m | 154.05609 | ng      |
| 36) C16(153) #2                    | 26.94    | 23006620m | 104.71101 | ng      |
| 37) C15(105) #2                    | 27.21    | 12184524m | 39.12074  | ng      |
| 38) C16(138) #2                    | 27.78    | 22787687m | 106.10078 | ng      |
| 39) C17(187) #2                    | 28.14    | 5543176m  | 22.67392  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7513.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0423\M7513.D\ECD2B.CH  
 Acq On : 11-7-2014 09:39:31 PM Operator: RR  
 Sample : M8173-P(2) Inst : INST. M  
 Misc : NBH14-0093 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:36:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:36:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9117550m | 27.28751 | ng    |
| 41) | C17(180) #2  | 29.59 | 5419527m | 17.65340 | ng    |
| 42) | C17(170) #2  | 30.22 | 4203534m | 12.31557 | ng    |
| 43) | C18(195) #2  | 31.09 | 697589m  | 1.16452  | ng    |
| 44) | C19(206) #2  | 32.18 | 860717m  | 2.25392  | ng    |
| 45) | C110(209) #2 | 32.63 | 375861m  | 0.43087  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7514.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0423\M7514.D\ECD2B.CH  
 Acq On : 07 Nov 2014 10:24 pm Operator: RR  
 Sample : M8173DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0093 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:52:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3594048m  | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 7577535m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15122669m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 31356312m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9641420   | 389.47255 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 102.53% |
| 11) s C16(152)                     | 20.49    | 11961569m | 314.00524 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 82.33%  |
| 27) s C13(34) #2                   | 16.48    | 46734140m | 402.94478 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 106.08% |
| 34) s C16(152) #2                  | 23.63    | 54717013m | 308.76509 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 80.96%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 736781m   | 30.56409  | ng      |
| 3) C13(18)                         | 12.13    | 567817m   | 16.59701  | ng      |
| 5) C13(28)                         | 14.21    | 4018671m  | 83.64886  | ng      |
| 6) C14(52)                         | 15.84    | 1927034m  | 51.18041  | ng      |
| 7) C14(44)                         | 16.71    | 1298095m  | 23.68894  | ng      |
| 8) C14(66)                         | 18.61    | 3400595m  | 60.49172  | ng      |
| 9) C15(101)                        | 19.72    | 3229338   | 57.40931  | ng      |
| 12) C15(118)                       | 22.40    | 7520120m  | 144.12545 | ng      |
| 13) C16(153)                       | 23.43    | 5831992m  | 110.49906 | ng      |
| 14) C15(105)                       | 23.46    | 2706977m  | 37.80307  | ng      |
| 15) C16(138)                       | 24.54    | 6948608m  | 103.47831 | ng      |
| 16) C17(187)                       | 25.30    | 859050m   | 12.09822  | ng      |
| 17) C16(128)                       | 25.63    | 1961905m  | 28.10806  | ng      |
| 18) C17(180)                       | 27.16    | 1160178m  | 14.56982  | ng      |
| 19) C17(170)                       | 27.97    | 1027983m  | 11.16744  | ng      |
| 20) C18(195)                       | 29.04    | 214917m   | 1.31216   | ng      |
| 21) C19(206)                       | 30.31    | 237851m   | 1.93602   | ng      |
| 22) C110(209)                      | 30.91    | 118122m   | 0.45785   | ng      |
| 25) C12(8) #2                      | 13.11    | 3403894m  | 31.37598  | ng      |
| 26) C13(18) #2                     | 15.00    | 2993025m  | 21.86264  | ng      |
| 28) C13(28) #2                     | 17.77    | 17114565m | 78.81525  | ng      |
| 29) C14(52) #2                     | 19.15    | 9193448m  | 71.29462  | ng      |
| 30) C14(44) #2                     | 19.96    | 6175156m  | 25.57838  | ng      |
| 31) C14(66) #2                     | 22.36    | 14488267m | 57.53712  | ng      |
| 32) C15(101) #2                    | 23.23    | 8772811m  | 61.58020  | ng      |
| 35) C15(118) #2                    | 26.34    | 32029263m | 165.08323 | ng      |
| 36) C16(153) #2                    | 26.94    | 23022601m | 109.79586 | ng      |
| 37) C15(105) #2                    | 27.21    | 12250620m | 41.23688  | ng      |
| 38) C16(138) #2                    | 27.78    | 23148619m | 112.48094 | ng      |
| 39) C17(187) #2                    | 28.14    | 5418618m  | 23.25562  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7514.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0423\M7514.D\ECD2B.CH  
 Acq On : 07 Nov 2014 10:24 pm Operator: RR  
 Sample : M8173DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0093 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:52:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9121016m | 28.65424 | ng    |
| 41) | C17(180) #2  | 29.59 | 5159391m | 17.58267 | ng    |
| 42) | C17(170) #2  | 30.22 | 4115025m | 12.65284 | ng    |
| 43) | C18(195) #2  | 31.09 | 649835m  | 1.10178  | ng    |
| 44) | C19(206) #2  | 32.19 | 731214m  | 1.87627  | ng    |
| 45) | C110(209) #2 | 32.63 | 385223m  | 0.57012  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7514.D MM0417C.M Mon Nov 24 14:05:57 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7515.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0423\M7515.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:09 pm Operator: RR  
 Sample : M8174-P(2) Inst : INST. M  
 Misc : NBH14-0097 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:12 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.40    | 3825068m  | 95.00000  | ng     |
| 10) I C16(161)              | 23.22    | 7975678m  | 95.00000  | ng     |
| 24) I C15(96) #2            | 20.52    | 15723574m | 95.00000  | ng     |
| 33) I C16(161) #2           | 26.79    | 31987965m | 95.00000  | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 9035691m  | 315.70226 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 83.11% |
| 11) s C16(152)              | 20.49    | 10746602  | 260.16374 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 68.22% |
| 27) s C13(34) #2            | 16.48    | 38879081m | 291.37473 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 76.70% |
| 34) s C16(152) #2           | 23.63    | 46592085m | 263.67368 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 69.14% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 597772m   | 22.16351  | ng     |
| 3) C13(18)                  | 12.12    | 709515m   | 20.40590  | ng     |
| 5) C13(28)                  | 14.20    | 3591216m  | 68.98701  | ng     |
| 6) C14(52)                  | 15.84    | 2302739m  | 58.61009  | ng     |
| 7) C14(44)                  | 16.74    | 1927522m  | 34.57401  | ng     |
| 8) C14(66)                  | 18.61    | 3809679m  | 64.00075  | ng     |
| 9) C15(101)                 | 19.72    | 3505626   | 58.63749  | ng     |
| 12) C15(118)                | 22.40    | 7577885m  | 137.27011 | ng     |
| 13) C16(153)                | 23.43    | 6885813m  | 124.94978 | ng     |
| 14) C15(105)                | 23.46    | 3082553m  | 41.21939  | ng     |
| 15) C16(138)                | 24.54    | 7929058m  | 112.80949 | ng     |
| 16) C17(187)                | 25.30    | 1065405m  | 14.68990  | ng     |
| 17) C16(128)                | 25.63    | 2247946m  | 30.69800  | ng     |
| 18) C17(180)                | 27.16    | 1324533m  | 15.97031  | ng     |
| 19) C17(170)                | 27.97    | 1151533m  | 11.99329  | ng     |
| 20) C18(195)                | 29.04    | 222037m   | 1.25968   | ng     |
| 21) C19(206)                | 30.31    | 299182m   | 2.56982   | ng     |
| 22) C110(209)               | 30.91    | 139463m   | 0.69861   | ng     |
| 25) C12(8) #2               | 13.11    | 2551710m  | 21.71961  | ng     |
| 26) C13(18) #2              | 14.99    | 2592374m  | 17.27903  | ng     |
| 28) C13(28) #2              | 17.76    | 14625226m | 63.74669  | ng     |
| 29) C14(52) #2              | 19.15    | 7514495m  | 54.68056  | ng     |
| 30) C14(44) #2              | 19.96    | 7765217m  | 31.43454  | ng     |
| 31) C14(66) #2              | 22.36    | 17168109m | 66.19548  | ng     |
| 32) C15(101) #2             | 23.23    | 9077818m  | 61.27635  | ng     |
| 35) C15(118) #2             | 26.34    | 30975032m | 156.12297 | ng     |
| 36) C16(153) #2             | 26.94    | 26710071m | 125.21463 | ng     |
| 37) C15(105) #2             | 27.20    | 11808708m | 38.88876  | ng     |
| 38) C16(138) #2             | 27.78    | 24362958m | 115.86611 | ng     |
| 39) C17(187) #2             | 28.14    | 4583918m  | 18.84612  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7515.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0423\M7515.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:09 pm Operator: RR  
 Sample : M8174-P(2) Inst : INST. M  
 Misc : NBH14-0097 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:12 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 9313609m | 28.68322 | ng    |
| 41) | C17(180) #2  | 29.59 | 6078670m | 20.56955 | ng    |
| 42) | C17(170) #2  | 30.22 | 4451216m | 13.50182 | ng    |
| 43) | C18(195) #2  | 31.09 | 781097m  | 1.53684  | ng    |
| 44) | C19(206) #2  | 32.18 | 915534m  | 2.56463  | ng    |
| 45) | C110(209) #2 | 32.63 | 403237m  | 0.62377  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7516.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0423\M7516.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:54 pm Operator: RR  
 Sample : M8374-P(2) Inst : INST. M  
 Misc : NBH14-0269 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:16 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.40    | 3801859m  | 95.00000  | ng     |
| 10) I C16(161)              | 23.22    | 7960388m  | 95.00000  | ng     |
| 24) I C15(96) #2            | 20.52    | 16569354m | 95.00000  | ng     |
| 33) I C16(161) #2           | 26.79    | 41560755m | 95.00000  | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 9663130   | 354.62265 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 93.35% |
| 11) s C16(152)              | 20.48    | 12661499m | 316.90124 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 83.09% |
| 27) s C13(34) #2            | 16.48    | 48756747m | 373.17908 | ng     |
| Spiked Amount               | 379.8670 | Recovery  | =         | 98.24% |
| 34) s C16(152) #2           | 23.63    | 63526991m | 275.11204 | ng     |
| Spiked Amount               | 381.3865 | Recovery  | =         | 72.13% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 180911    | 3.92494   | ng     |
| 3) C13(18)                  | 12.13    | 170777m   | 1.24682   | ng     |
| 5) C13(28)                  | 14.20    | 1035257m  | 17.51159  | ng     |
| 6) C14(52)                  | 15.84    | 586856m   | 9.94224   | ng     |
| 7) C14(44)                  | 16.70    | 338879m   | 3.46523   | ng     |
| 8) C14(66)                  | 18.61    | 917879m   | 12.90107  | ng     |
| 9) C15(101)                 | 19.72    | 1036673   | 15.80031  | ng     |
| 12) C15(118)                | 22.40    | 1949849m  | 31.04299  | ng     |
| 13) C16(153)                | 23.43    | 1548848m  | 26.08351  | ng     |
| 14) C15(105)                | 23.46    | 721052m   | 7.55989   | ng     |
| 15) C16(138)                | 24.54    | 1837461m  | 23.47563  | ng     |
| 16) C17(187)                | 25.29    | 254705m   | 1.71858   | ng     |
| 17) C16(128)                | 25.63    | 506835m   | 6.34770   | ng     |
| 18) C17(180)                | 27.16    | 324007m   | 2.46644   | ng     |
| 19) C17(170)                | 27.96    | 279033m   | 1.66081   | ng     |
| 20) C18(195)                | 29.04    | 53091m    | BelowCal  | ng     |
| 21) C19(206)                | 30.30    | 81913m    | BelowCal  | ng     |
| 22) C110(209)               | 30.90    | 24523m    | BelowCal  | ng     |
| 25) C12(8) #2               | 13.11    | 824358m   | 4.81270   | ng     |
| 26) C13(18) #2              | 14.99    | 817538m   | 1.52616   | ng     |
| 28) C13(28) #2              | 17.76    | 4640972m  | 17.22968  | ng     |
| 29) C14(52) #2              | 19.15    | 2750870m  | 16.74367  | ng     |
| 30) C14(44) #2              | 19.96    | 1681081m  | 4.97188   | ng     |
| 31) C14(66) #2              | 22.36    | 4428193m  | 14.22656  | ng     |
| 32) C15(101) #2             | 23.23    | 2950971m  | 16.39377  | ng     |
| 35) C15(118) #2             | 26.34    | 9420300m  | 33.23034  | ng     |
| 36) C16(153) #2             | 26.94    | 6932229m  | 22.09519  | ng     |
| 37) C15(105) #2             | 27.21    | 3548823m  | 7.59781   | ng     |
| 38) C16(138) #2             | 27.78    | 6506181m  | 24.22990  | ng     |
| 39) C17(187) #2             | 28.14    | 1357881m  | 2.22271   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7516.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0423\M7516.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:54 pm Operator: RR  
 Sample : M8374-P(2) Inst : INST. M  
 Misc : NBH14-0269 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:16 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 2659850m | 4.72786  | ng    |
| 41) | C17(180) #2  | 29.59 | 1710131m | 3.02709  | ng    |
| 42) | C17(170) #2  | 30.22 | 1190379m | 1.60440  | ng    |
| 43) | C18(195) #2  | 31.09 | 237296m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 131860m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.63 | 152424m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7517.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0423\M7517.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:38 am Operator: RR  
 Sample : M8375-P(2) Inst : INST. M  
 Misc : NBH14-0273 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:20 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3819746   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 7523269m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14682150m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 31868339m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9551737m  | 345.25495 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 90.89%  |
| 11) s C16(152)                     | 20.49    | 11859623m | 313.48427 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 82.20%  |
| 27) s C13(34) #2                   | 16.48    | 44593147m | 391.95621 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 103.18% |
| 34) s C16(152) #2                  | 23.63    | 53145942m | 296.86696 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 77.84%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 506943    | 18.15259  | ng      |
| 3) C13(18)                         | 12.13    | 533855m   | 14.08946  | ng      |
| 5) C13(28)                         | 14.20    | 3056391m  | 57.89809  | ng      |
| 6) C14(52)                         | 15.84    | 1565084   | 37.18827  | ng      |
| 7) C14(44)                         | 16.70    | 839245m   | 13.08982  | ng      |
| 8) C14(66)                         | 18.61    | 2506498m  | 40.46052  | ng      |
| 9) C15(101)                        | 19.72    | 2242932   | 36.43182  | ng      |
| 12) C15(118)                       | 22.40    | 4997487m  | 92.49337  | ng      |
| 13) C16(153)                       | 23.44 TW | 4127427m  | 77.22730  | ng      |
| 14) C15(105)                       | 23.45 TW | 2085162m  | 28.55557  | ng      |
| 15) C16(138)                       | 24.54    | 4791746m  | 70.19727  | ng      |
| 16) C17(187)                       | 25.30    | 646496m   | 8.58913   | ng      |
| 17) C16(128)                       | 25.64    | 1396324m  | 19.87866  | ng      |
| 18) C17(180)                       | 27.17    | 819186m   | 9.79983   | ng      |
| 19) C17(170)                       | 27.96    | 748677m   | 7.74694   | ng      |
| 20) C18(195)                       | 29.04    | 148285m   | 0.44421   | ng      |
| 21) C19(206)                       | 30.31    | 195106m   | 1.37145   | ng      |
| 22) C110(209)                      | 30.91    | 101397m   | 0.19013   | ng      |
| 25) C12(8) #2                      | 13.11    | 2211972m  | 19.94945  | ng      |
| 26) C13(18) #2                     | 14.99    | 2397205m  | 17.05822  | ng      |
| 28) C13(28) #2                     | 17.77    | 12643388m | 58.66238  | ng      |
| 29) C14(52) #2                     | 19.15    | 6396056m  | 49.38553  | ng      |
| 30) C14(44) #2                     | 19.96    | 4052079m  | 16.61473  | ng      |
| 31) C14(66) #2                     | 22.36    | 11140835m | 44.81293  | ng      |
| 32) C15(101) #2                    | 23.23    | 5811492m  | 41.15177  | ng      |
| 35) C15(118) #2                    | 26.34    | 21594476m | 107.47120 | ng      |
| 36) C16(153) #2                    | 26.94    | 16494155m | 76.48957  | ng      |
| 37) C15(105) #2                    | 27.21    | 8236153m  | 26.75641  | ng      |
| 38) C16(138) #2                    | 27.78    | 15868513m | 77.00481  | ng      |
| 39) C17(187) #2                    | 28.14    | 4631612m  | 19.15048  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7517.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0423\M7517.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:38 am Operator: RR  
 Sample : M8375-P(2) Inst : INST. M  
 Misc : NBH14-0273 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:20 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.55 | 6487423m | 19.48951 | ng    |
| 41) | C17(180) #2  | 29.59 | 3707656m | 11.91627 | ng    |
| 42) | C17(170) #2  | 30.22 | 3018578m | 8.73101  | ng    |
| 43) | C18(195) #2  | 31.09 | 496520m  | 0.49573  | ng    |
| 44) | C19(206) #2  | 32.18 | 613396m  | 1.34736  | ng    |
| 45) | C110(209) #2 | 32.63 | 318714m  | 0.18781  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7519.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0423\M7519.D\ECD2B.CH  
 Acq On : 11-8-2014 02:08:14 AM Operator: RR  
 Sample : M8376-P(2) Inst : INST. M  
 Misc : NBH14-0277 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:24 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3645097m  | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 7762451m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15040396m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 34424303m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9594134   | 376.43277 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 99.10%  |
| 11) s C16(152)                     | 20.49    | 11533003  | 291.96144 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 76.55%  |
| 27) s C13(34) #2                   | 16.48    | 46861171m | 408.31806 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 107.49% |
| 34) s C16(152) #2                  | 23.63    | 54975292m | 285.87284 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 74.96%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 690228    | 27.85114  | ng      |
| 3) C13(18)                         | 12.13    | 660465    | 19.80863  | ng      |
| 5) C13(28)                         | 14.21    | 3817488m  | 77.80857  | ng      |
| 6) C14(52)                         | 15.84    | 2332040m  | 62.91791  | ng      |
| 7) C14(44)                         | 16.70    | 1642477m  | 30.48488  | ng      |
| 8) C14(66)                         | 18.61    | 3612829m  | 63.65957  | ng      |
| 9) C15(101)                        | 19.72    | 3596245   | 63.45037  | ng      |
| 12) C15(118)                       | 22.40    | 8293908m  | 156.61164 | ng      |
| 13) C16(153)                       | 23.44    | 6567351m  | 122.26420 | ng      |
| 14) C15(105)                       | 23.46    | 3145236m  | 43.41283  | ng      |
| 15) C16(138)                       | 24.54    | 8054374m  | 118.09705 | ng      |
| 16) C17(187)                       | 25.30    | 1059746   | 15.06734  | ng      |
| 17) C16(128)                       | 25.63    | 2280478m  | 32.04813  | ng      |
| 18) C17(180)                       | 27.16    | 1353423m  | 16.86569  | ng      |
| 19) C17(170)                       | 27.97    | 1200549m  | 12.96751  | ng      |
| 20) C18(195)                       | 29.04    | 217709m   | 1.28045   | ng      |
| 21) C19(206)                       | 30.30    | 292973m   | 2.59370   | ng      |
| 22) C110(209)                      | 30.90    | 127381m   | 0.56207   | ng      |
| 25) C12(8) #2                      | 13.11    | 3095268m  | 28.39251  | ng      |
| 26) C13(18) #2                     | 14.99    | 3158667m  | 23.54943  | ng      |
| 28) C13(28) #2                     | 17.76    | 18969308m | 88.67509  | ng      |
| 29) C14(52) #2                     | 19.15    | 11044692m | 87.96283  | ng      |
| 30) C14(44) #2                     | 19.96    | 7742846m  | 32.87666  | ng      |
| 31) C14(66) #2                     | 22.36    | 17292938m | 69.97026  | ng      |
| 32) C15(101) #2                    | 23.23    | 10723458m | 76.02758  | ng      |
| 35) C15(118) #2                    | 26.34    | 36839467m | 173.31546 | ng      |
| 36) C16(153) #2                    | 26.94    | 26640012m | 115.86726 | ng      |
| 37) C15(105) #2                    | 27.21    | 14108949m | 43.32393  | ng      |
| 38) C16(138) #2                    | 27.78    | 27389621m | 120.77040 | ng      |
| 39) C17(187) #2                    | 28.14    | 5013034m  | 19.19372  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7519.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0423\M7519.D\ECD2B.CH  
 Acq On : 11-8-2014 02:08:14 AM Operator: RR  
 Sample : M8376-P(2) Inst : INST. M  
 Misc : NBH14-0277 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:24 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:20 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 10778899m | 30.97974 | ng    |
| 41) | C17(180) #2  | 29.59 | 6493734m  | 20.40663 | ng    |
| 42) | C17(170) #2  | 30.22 | 5237395m  | 14.89333 | ng    |
| 43) | C18(195) #2  | 31.09 | 908902m   | 1.77047  | ng    |
| 44) | C19(206) #2  | 32.18 | 913650m   | 2.29457  | ng    |
| 45) | C110(209) #2 | 32.63 | 577607m   | 1.32195  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7519.D MM0417C.M Mon Nov 24 14:06:26 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7520.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0423\M7520.D\ECD2B.CH  
 Acq On : 11-8-2014 02:53:00 AM Operator: RR  
 Sample : M8377-P(2) Inst : INST. M  
 Misc : NBH14-0281 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.40    | 3533034m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 8356117     | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 15222855m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 29078770m   | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 9555436m    | 395.36729 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 104.08% |
| 11) s C16(152)                     | 20.49    | 11401845    | 264.02339 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 69.23%  |
| 27) s C13(34) #2                   | 16.48    | 40791638m   | 325.42329 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 85.67%  |
| 34) s C16(152) #2                  | 23.63    | 48553758m   | 297.18565 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 77.92%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 1030878m    | 45.90290  | ng      |
| 3) C13(18)                         | 12.13    | 1449866m    | 52.78049  | ng      |
| 5) C13(28)                         | 14.20    | e 9652450m  | 239.26795 | ng      |
| 6) C14(52)                         | 15.84    | 3861734m    | 117.63187 | ng      |
| 7) C14(44)                         | 16.72    | 1976119m    | 38.85316  | ng      |
| 8) C14(66)                         | 18.61    | 6302775m    | 122.61211 | ng      |
| 9) C15(101)                        | 19.72    | 5620383     | 106.28621 | ng      |
| 12) C15(118)                       | 22.40    | e 13065060m | 243.81245 | ng      |
| 13) C16(153)                       | 23.44    | 10896707m   | 196.01359 | ng      |
| 14) C15(105)                       | 23.46    | 5677364m    | 76.63283  | ng      |
| 15) C16(138)                       | 24.54    | 12851359m   | 180.77317 | ng      |
| 16) C17(187)                       | 25.30    | 1526064     | 21.00056  | ng      |
| 17) C16(128)                       | 25.63    | 3575480     | 47.35751  | ng      |
| 18) C17(180)                       | 27.17    | 2207784m    | 26.60350  | ng      |
| 19) C17(170)                       | 27.97    | 1878603m    | 19.62791  | ng      |
| 20) C18(195)                       | 29.04    | 341706m     | 2.56975   | ng      |
| 21) C19(206)                       | 30.31    | 427344m     | 3.98140   | ng      |
| 22) C110(209)                      | 30.91    | 152465m     | 0.79503   | ng      |
| 25) C12(8) #2                      | 13.11    | 4499664m    | 42.41833  | ng      |
| 26) C13(18) #2                     | 14.99    | 5139852m    | 41.65395  | ng      |
| 28) C13(28) #2                     | 17.76    | 20925136m   | 97.42610  | ng      |
| 29) C14(52) #2                     | 19.15    | 15743540m   | 129.84994 | ng      |
| 30) C14(44) #2                     | 19.96    | 8672014m    | 36.66933  | ng      |
| 31) C14(66) #2                     | 22.36    | 29147823m   | 121.62139 | ng      |
| 32) C15(101) #2                    | 23.23    | 16477242m   | 115.05594 | ng      |
| 35) C15(118) #2                    | 26.34    | e 53350709m | 305.06332 | ng      |
| 36) C16(153) #2                    | 26.94    | 38658896m   | 200.19985 | ng      |
| 37) C15(105) #2                    | 27.21    | 21676948m   | 79.42655  | ng      |
| 38) C16(138) #2                    | 27.78    | 38711127    | 195.05541 | ng      |
| 39) C17(187) #2                    | 28.14    | 7422323m    | 35.52255  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7520.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0423\M7520.D\ECD2B.CH  
 Acq On : 11-8-2014 02:53:00 AM Operator: RR  
 Sample : M8377-P(2) Inst : INST. M  
 Misc : NBH14-0281 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:24 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 15008810m | 52.05705 | ng    |
| 41) | C17(180) #2  | 29.59 | 9093554m  | 34.85406 | ng    |
| 42) | C17(170) #2  | 30.22 | 7301835m  | 25.44783 | ng    |
| 43) | C18(195) #2  | 31.09 | 1155408m  | 3.33876  | ng    |
| 44) | C19(206) #2  | 32.18 | 1145731m  | 3.96313  | ng    |
| 45) | C110(209) #2 | 32.63 | 479426m   | 1.27312  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7521.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0423\M7521.D\ECD2B.CH  
 Acq On : 11-8-2014 03:37:35 AM Operator: RR  
 Sample : M8378-P(2) Inst : INST. M  
 Misc : NBH14-0285 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.40    | 3792004     | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 7181827m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14022060m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.80    | 27068352    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 10097141    | 384.26728 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 101.16% |
| 11) s C16(152)                     | 20.49    | 11495113    | 319.32630 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 83.73%  |
| 27) s C13(34) #2                   | 16.48    | 45425125m   | 435.92121 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 114.76% |
| 34) s C16(152) #2                  | 23.63    | 50444169    | 326.75240 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 85.67%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 2312658     | 107.08302 | ng      |
| 3) C13(18)                         | 12.13    | 3130550     | 119.82955 | ng      |
| 5) C13(28)                         | 14.20    | e 12125483m | 297.15881 | ng      |
| 6) C14(52)                         | 15.84    | e 11159528  | 535.10118 | ng      |
| 7) C14(44)                         | 16.71    | 7996412     | 174.45133 | ng      |
| 8) C14(66)                         | 18.62    | e 11198209m | 224.15220 | ng      |
| 9) C15(101)                        | 19.72    | e 13991989  | 281.31068 | ng      |
| 12) C15(118)                       | 22.40    | E 35288085  | BelowCal  | ng      |
| 13) C16(153)                       | 23.43    | e 12260162m | 266.32373 | ng      |
| 14) C15(105)                       | 23.46    | 10162124m   | 178.21156 | ng      |
| 15) C16(138)                       | 24.54    | E 29751497  | 590.96187 | ng      |
| 16) C17(187)                       | 25.30    | 2692754m    | 46.05682  | ng      |
| 17) C16(128)                       | 25.64    | 7046272     | 113.41881 | ng      |
| 18) C17(180)                       | 27.17    | 4863354m    | 71.96619  | ng      |
| 19) C17(170)                       | 27.97    | 4344877     | 56.09428  | ng      |
| 20) C18(195)                       | 29.04    | 651146m     | 7.57158   | ng      |
| 21) C19(206)                       | 30.31    | 896835m     | 11.63382  | ng      |
| 22) C110(209)                      | 30.91    | 230099m     | 2.54625   | ng      |
| 25) C12(8) #2                      | 13.11    | 10086825m   | 114.13246 | ng      |
| 26) C13(18) #2                     | 15.00    | 14083707m   | 147.68233 | ng      |
| 28) C13(28) #2                     | 17.76    | e 60566285  | 391.43201 | ng      |
| 29) C14(52) #2                     | 19.15    | e 52567558  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 36710726    | 198.48789 | ng      |
| 31) C14(66) #2                     | 22.36    | 34650096m   | 161.53407 | ng      |
| 32) C15(101) #2                    | 23.23    | e 56459752m | 382.53338 | ng      |
| 35) C15(118) #2                    | 26.34    | e 104622374 | 681.41175 | ng      |
| 36) C16(153) #2                    | 26.94    | e 72679864  | 400.42938 | ng      |
| 37) C15(105) #2                    | 27.21    | 45620146    | 176.40661 | ng      |
| 38) C16(138) #2                    | 27.78    | e 80941106  | 398.15829 | ng      |
| 39) C17(187) #2                    | 28.14    | 13043093m   | 68.84804  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7521.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0423\M7521.D\ECD2B.CH  
 Acq On : 11-8-2014 03:37:35 AM Operator: RR  
 Sample : M8378-P(2) Inst : INST. M  
 Misc : NBH14-0285 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:28 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.55 | 30647611  | 114.38899 | ng    |
| 41) | C17(180) #2  | 29.59 | 20594575m | 85.78494  | ng    |
| 42) | C17(170) #2  | 30.22 | 14645647m | 55.90868  | ng    |
| 43) | C18(195) #2  | 31.09 | 2321546m  | 8.73822   | ng    |
| 44) | C19(206) #2  | 32.19 | 2644649   | 11.50049  | ng    |
| 45) | C110(209) #2 | 32.63 | 1295238m  | 6.51157   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7522.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0423\M7522.D\ECD2B.CH  
 Acq On : 11-8-2014 04:22:30 AM Operator: RR  
 Sample : M8379-P(2) Inst : INST. M  
 Misc : NBH14-0289 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.40    | 3608786     | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 8322299m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14026166m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 30923957m   | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 9673147     | 388.89997 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 102.38% |
| 11) s C16(152)                     | 20.49    | 11211201    | 260.09742 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 68.20%  |
| 27) s C13(34) #2                   | 16.48    | 44794468m   | 425.40937 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 111.99% |
| 34) s C16(152) #2                  | 23.63    | 52512390    | 301.56647 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 79.07%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 1421116     | 64.60752  | ng      |
| 3) C13(18)                         | 12.13    | 1443656     | 51.24082  | ng      |
| 5) C13(28)                         | 14.20    | 8698110m    | 203.75384 | ng      |
| 6) C14(52)                         | 15.84    | 5139352     | 161.91613 | ng      |
| 7) C14(44)                         | 16.71    | 3564508     | 73.04388  | ng      |
| 8) C14(66)                         | 18.61    | 6201820m    | 117.50079 | ng      |
| 9) C15(101)                        | 19.73    | 7664360     | 146.35682 | ng      |
| 12) C15(118)                       | 22.40    | e 17564826m | 356.62450 | ng      |
| 13) C16(153)                       | 23.44    | e 13144154m | 243.41699 | ng      |
| 14) C15(105)                       | 23.46    | 7171147m    | 99.90823  | ng      |
| 15) C16(138)                       | 24.54    | e 16970728m | 247.27611 | ng      |
| 16) C17(187)                       | 25.30    | 1799065     | 25.33511  | ng      |
| 17) C16(128)                       | 25.63    | 4646188     | 62.49219  | ng      |
| 18) C17(180)                       | 27.16    | 2970284m    | 36.69774  | ng      |
| 19) C17(170)                       | 27.97    | 2503379m    | 26.86571  | ng      |
| 20) C18(195)                       | 29.04    | 404809m     | 3.34773   | ng      |
| 21) C19(206)                       | 30.31    | 450385m     | 4.28977   | ng      |
| 22) C110(209)                      | 30.91    | 158286m     | 0.89320   | ng      |
| 25) C12(8) #2                      | 13.11    | 6174219m    | 65.79162  | ng      |
| 26) C13(18) #2                     | 15.00    | 6694083m    | 62.14693  | ng      |
| 28) C13(28) #2                     | 17.77    | 39108345m   | 218.28873 | ng      |
| 29) C14(52) #2                     | 19.15    | 23365925m   | 233.33535 | ng      |
| 30) C14(44) #2                     | 19.96    | 16028095m   | 77.66739  | ng      |
| 31) C14(66) #2                     | 22.36    | 23850609m   | 106.80111 | ng      |
| 32) C15(101) #2                    | 23.23    | 21969188m   | 163.89800 | ng      |
| 35) C15(118) #2                    | 26.34    | e 70264698m | 382.70088 | ng      |
| 36) C16(153) #2                    | 26.94    | 47905292m   | 233.16913 | ng      |
| 37) C15(105) #2                    | 27.21    | 30838867m   | 105.98066 | ng      |
| 38) C16(138) #2                    | 27.78    | 55974754    | 257.38636 | ng      |
| 39) C17(187) #2                    | 28.14    | 10313899m   | 47.09829  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7522.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0423\M7522.D\ECD2B.CH  
 Acq On : 11-8-2014 04:22:30 AM Operator: RR  
 Sample : M8379-P(2) Inst : INST. M  
 Misc : NBH14-0289 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 20657410m | 67.64404 | ng    |
| 41) | C17(180) #2  | 29.59 | 13043993m | 47.42845 | ng    |
| 42) | C17(170) #2  | 30.22 | 10346381m | 34.28638 | ng    |
| 43) | C18(195) #2  | 31.09 | 1492711m  | 4.34195  | ng    |
| 44) | C19(206) #2  | 32.18 | 1368901m  | 4.59387  | ng    |
| 45) | C110(209) #2 | 32.63 | 498985m   | 1.21436  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7523.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0423\M7523.D\ECD2B.CH  
 Acq On : 11-8-2014 05:07:03 AM Operator: RR  
 Sample : M8389-P(2) Inst : INST. M  
 Misc : NBH14-0109 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 3490502m  | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 7055913m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14601470m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 33117738m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9281459m  | 383.31364 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 100.91% |
| 11) s C16(152)                     | 20.49    | 11490547m | 326.12151 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 85.51%  |
| 27) s C13(34) #2                   | 16.48    | 44205207m | 389.96837 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 102.66% |
| 34) s C16(152) #2                  | 23.63    | 53618929m | 289.31494 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 75.86%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 364584    | 13.38344  | ng      |
| 3) C13(18)                         | 12.13    | 333428    | 8.05705   | ng      |
| 5) C13(28)                         | 14.20    | 1937020m  | 38.79722  | ng      |
| 6) C14(52)                         | 15.84    | 980090m   | 23.26933  | ng      |
| 7) C14(44)                         | 16.70    | 622631m   | 10.02709  | ng      |
| 8) C14(66)                         | 18.61    | 1662215m  | 28.35154  | ng      |
| 9) C15(101)                        | 19.72    | 1718325   | 30.14878  | ng      |
| 12) C15(118)                       | 22.40    | 3676685m  | 70.98798  | ng      |
| 13) C16(153)                       | 23.44 TW | 2640449m  | 51.72115  | ng      |
| 14) C15(105)                       | 23.45 TW | 1418601m  | 19.90061  | ng      |
| 15) C16(138)                       | 24.54    | 3679610m  | 56.73910  | ng      |
| 16) C17(187)                       | 25.30    | 515764m   | 6.95066   | ng      |
| 17) C16(128)                       | 25.63    | 1041978m  | 15.64925  | ng      |
| 18) C17(180)                       | 27.16    | 597976m   | 7.20068   | ng      |
| 19) C17(170)                       | 27.97    | 521051m   | 5.32133   | ng      |
| 20) C18(195)                       | 29.04    | 92985m    | BelowCal  | ng      |
| 21) C19(206)                       | 30.31    | 113004m   | 0.34543   | ng      |
| 22) C110(209)                      | 30.90    | 63478m    | BelowCal  | ng      |
| 25) C12(8) #2                      | 13.11    | 1571523m  | 13.44623  | ng      |
| 26) C13(18) #2                     | 14.99    | 1392716m  | 7.75440   | ng      |
| 28) C13(28) #2                     | 17.76    | 8411759m  | 38.03930  | ng      |
| 29) C14(52) #2                     | 19.15    | 4390048m  | 32.81001  | ng      |
| 30) C14(44) #2                     | 19.96    | 3005784m  | 11.91247  | ng      |
| 31) C14(66) #2                     | 22.36    | 7809900m  | 30.74148  | ng      |
| 32) C15(101) #2                    | 23.23    | 4249849m  | 29.32611  | ng      |
| 35) C15(118) #2                    | 26.34    | 16720606m | 78.86157  | ng      |
| 36) C16(153) #2                    | 26.94    | 12482563m | 54.74845  | ng      |
| 37) C15(105) #2                    | 27.20    | 6625672m  | 20.32033  | ng      |
| 38) C16(138) #2                    | 27.78    | 12273844m | 57.66696  | ng      |
| 39) C17(187) #2                    | 28.14    | 4754878m  | 18.88706  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7523.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0423\M7523.D\ECD2B.CH  
 Acq On : 11-8-2014 05:07:03 AM Operator: RR  
 Sample : M8389-P(2) Inst : INST. M  
 Misc : NBH14-0109 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 5259724m | 14.77159 | ng    |
| 41) | C17(180) #2  | 29.59 | 2844577m | 8.32385  | ng    |
| 42) | C17(170) #2  | 30.22 | 2208721m | 5.71290  | ng    |
| 43) | C18(195) #2  | 31.09 | 369391m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 385575m  | 0.35883  | ng    |
| 45) | C110(209) #2 | 32.63 | 259502m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7524.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0423\M7524.D\ECD2B.CH  
 Acq On : 11-8-2014 05:51:48 AM Operator: RR  
 Sample : M8390-P(2) Inst : INST. M  
 Misc : NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3688374m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7754964   | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.52    | 15499309m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 36608343m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 9388986   | 355.52328 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 93.59% |
| 11) s C16(152)                     | 20.48    | 13192887m | 344.10401 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 90.22% |
| 27) s C13(34) #2                   | 16.48    | 44054021m | 354.27676 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 93.26% |
| 34) s C16(152) #2                  | 23.63    | 60671282m | 295.26204 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 77.42% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 106459m   | 0.84941   | ng     |
| 3) C13(18)                         | 12.13    | 80061m    | BelowCal  | ng     |
| 5) C13(28)                         | 14.20    | 489499m   | 7.26442   | ng     |
| 6) C14(52)                         | 15.84    | 425507m   | 5.89209   | ng     |
| 7) C14(44)                         | 16.70    | 228678m   | 1.48358   | ng     |
| 8) C14(66)                         | 18.61    | 666866m   | 8.97174   | ng     |
| 9) C15(101)                        | 19.72    | 608540m   | 8.85812   | ng     |
| 12) C15(118)                       | 22.39    | 1047722m  | 15.66337  | ng     |
| 13) C16(153)                       | 23.43    | 684326m   | 11.19515  | ng     |
| 14) C15(105)                       | 23.45    | 403960m   | 3.31932   | ng     |
| 15) C16(138)                       | 24.53    | 1023652m  | 12.36112  | ng     |
| 16) C17(187)                       | 25.29    | 162936m   | 0.32369   | ng     |
| 17) C16(128)                       | 25.62    | 255573m   | 2.96935   | ng     |
| 18) C17(180)                       | 27.16    | 172498m   | 0.48561   | ng     |
| 19) C17(170)                       | 27.96    | 142933m   | 0.09434   | ng     |
| 20) C18(195)                       | 29.04    | 27415m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.30    | 46765m    | BelowCal  | ng     |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng     |
| 25) C12(8) #2                      | 13.10    | 385814m   | 1.14300   | ng     |
| 26) C13(18) #2                     | 15.00    | 417865m   | BelowCal  | ng     |
| 28) C13(28) #2                     | 17.77    | 2444052m  | 8.79246   | ng     |
| 29) C14(52) #2                     | 19.15    | 1734939m  | 10.41243  | ng     |
| 30) C14(44) #2                     | 19.96    | 993669m   | 2.50583   | ng     |
| 31) C14(66) #2                     | 22.36    | 2183130m  | 6.53567   | ng     |
| 32) C15(101) #2                    | 23.23    | 1854570m  | 9.62597   | ng     |
| 35) C15(118) #2                    | 26.33    | 4505040m  | 16.37700  | ng     |
| 36) C16(153) #2                    | 26.94    | 4336883m  | 14.55425  | ng     |
| 37) C15(105) #2                    | 27.20    | 1641010m  | 3.07185   | ng     |
| 38) C16(138) #2                    | 27.78    | 3329568m  | 13.73519  | ng     |
| 39) C17(187) #2                    | 28.14    | 752838m   | 0.39458   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7524.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0423\M7524.D\ECD2B.CH  
 Acq On : 11-8-2014 05:51:48 AM Operator: RR  
 Sample : M8390-P(2) Inst : INST. M  
 Misc : NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:53:45 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 1400616m | 1.99023  | ng    |
| 41) | C17(180) #2  | 29.59 | 725989m  | 0.49620  | ng    |
| 42) | C17(170) #2  | 30.22 | 535402m  | 0.08776  | ng    |
| 43) | C18(195) #2  | 31.09 | 102276m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 44178m   | BelowCal | ng    |
| 45) | C110(209) #2 | 0.00  | 0d       | N.D.     | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7525.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0423\M7525.D\ECD2B.CH  
 Acq On : 11-8-2014 06:36:25 AM Operator: RR  
 Sample : M8390MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:31:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3626221m  | 100.00000 | ng     |
| 10) I C16(161)                     | 23.22    | 7432844   | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 15829971m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 38617300m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 9386834   | 384.97178 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 96.24% |
| 11) s C16(152)                     | 20.48    | 12643077m | 362.15054 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 90.18% |
| 27) s C13(34) #2                   | 16.48    | 46473396m | 391.43843 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 97.86% |
| 34) s C16(152) #2                  | 23.62    | 83898772  | 391.86042 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 97.57% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 1098557   | 50.43507  | ng     |
| 3) C13(18)                         | 12.13    | 1359816   | 50.03354  | ng     |
| 5) C13(28)                         | 14.21    | 2871102   | 60.24614  | ng     |
| 6) C14(52)                         | 15.84    | 1977825   | 54.96637  | ng     |
| 7) C14(44)                         | 16.70    | 2523900m  | 52.15157  | ng     |
| 8) C14(66)                         | 18.60    | 3072609   | 56.40882  | ng     |
| 9) C15(101)                        | 19.74    | 3341467m  | 62.08291  | ng     |
| 12) C15(118)                       | 22.39    | 3141468m  | 59.50352  | ng     |
| 13) C16(153)                       | 23.44 TW | 3205504m  | 63.15226  | ng     |
| 14) C15(105)                       | 23.45 TW | 3528457m  | 54.36558  | ng     |
| 15) C16(138)                       | 24.54    | 4010781m  | 61.93778  | ng     |
| 16) C17(187)                       | 25.29    | 3168632   | 55.61629  | ng     |
| 17) C16(128)                       | 25.64    | 3488399m  | 54.88376  | ng     |
| 18) C17(180)                       | 27.16    | 3728580m  | 55.32551  | ng     |
| 19) C17(170)                       | 27.96    | 4056420m  | 53.02050  | ng     |
| 20) C18(195)                       | 29.04    | 3935268m  | 54.87355  | ng     |
| 21) C19(206)                       | 30.31    | 3655649m  | 52.76859  | ng     |
| 22) C110(209)                      | 30.90    | 3121942m  | 55.43428  | ng     |
| 25) C12(8) #2                      | 13.11    | 5565959m  | 54.05653  | ng     |
| 26) C13(18) #2                     | 14.99    | 6174381m  | 51.85005  | ng     |
| 28) C13(28) #2                     | 17.76    | 12299073m | 55.27231  | ng     |
| 29) C14(52) #2                     | 19.14    | 7808041m  | 59.59309  | ng     |
| 30) C14(44) #2                     | 19.96    | 14047389m | 62.18377  | ng     |
| 31) C14(66) #2                     | 22.36    | 16179482m | 64.91409  | ng     |
| 32) C15(101) #2                    | 23.25    | 6868760m  | 47.80236  | ng     |
| 35) C15(118) #2                    | 26.35    | 15841262m | 66.60274  | ng     |
| 36) C16(153) #2                    | 26.94    | 16218188m | 64.64599  | ng     |
| 37) C15(105) #2                    | 27.20    | 20971328m | 60.79288  | ng     |
| 38) C16(138) #2                    | 27.78    | 14520878m | 61.57505  | ng     |
| 39) C17(187) #2                    | 28.14    | 15767779  | 61.15144  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7525.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0423\M7525.D\ECD2B.CH  
 Acq On : 11-8-2014 06:36:25 AM Operator: RR  
 Sample : M8390MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:31:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 22373113m | 61.64552 | ng    |
| 41) | C17(180) #2  | 29.59 | 20654361m | 63.51221 | ng    |
| 42) | C17(170) #2  | 30.22 | 22127944m | 62.34067 | ng    |
| 43) | C18(195) #2  | 31.09 | 21744634m | 66.67334 | ng    |
| 44) | C19(206) #2  | 32.18 | 20337582m | 69.11023 | ng    |
| 45) | C110(209) #2 | 32.62 | 16726362m | 73.29123 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7525.D MM0417C.M Mon Nov 24 14:36:44 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7526.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0423\M7526.D\ECD2B.CH  
 Acq On : 11-8-2014 07:21:09 AM Operator: RR  
 Sample : M8390MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0113 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:31:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3781855m  | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 7722627m  | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.52    | 17075691m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 40154673m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 9562055   | 370.06198 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 92.52% |
| 11) s C16(152)                     | 20.48    | 13595955m | 377.98832 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 94.12% |
| 27) s C13(34) #2                   | 16.48    | 48599082m | 373.65465 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 93.41% |
| 34) s C16(152) #2                  | 23.62    | 87507244m | 392.87544 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 97.83% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 1135668   | 49.93120  | ng     |
| 3) C13(18)                         | 12.13    | 1393934   | 49.03939  | ng     |
| 5) C13(28)                         | 14.21    | 2892576m  | 58.01036  | ng     |
| 6) C14(52)                         | 15.84    | 2061563   | 54.93049  | ng     |
| 7) C14(44)                         | 16.70    | 2703352   | 53.71624  | ng     |
| 8) C14(66)                         | 18.60    | 3169571   | 55.73445  | ng     |
| 9) C15(101)                        | 19.74    | 3293331m  | 58.44140  | ng     |
| 12) C15(118)                       | 22.39    | 3320300m  | 60.62283  | ng     |
| 13) C16(153)                       | 23.44 TW | 3122754m  | 59.03713  | ng     |
| 14) C15(105)                       | 23.45 TW | 3856603m  | 57.47327  | ng     |
| 15) C16(138)                       | 24.54    | 4310415m  | 64.20807  | ng     |
| 16) C17(187)                       | 25.29    | 3441711   | 58.31677  | ng     |
| 17) C16(128)                       | 25.63    | 3833829m  | 58.19266  | ng     |
| 18) C17(180)                       | 27.16    | 3961543m  | 56.63961  | ng     |
| 19) C17(170)                       | 27.96    | 4278086m  | 53.85618  | ng     |
| 20) C18(195)                       | 29.04    | 4176512m  | 56.10107  | ng     |
| 21) C19(206)                       | 30.31    | 3833374m  | 53.27664  | ng     |
| 22) C110(209)                      | 30.90    | 3278029m  | 56.04994  | ng     |
| 25) C12(8) #2                      | 13.10    | 5863021m  | 52.66103  | ng     |
| 26) C13(18) #2                     | 15.00    | 6556348m  | 50.91496  | ng     |
| 28) C13(28) #2                     | 17.76    | 14251544m | 59.70259  | ng     |
| 29) C14(52) #2                     | 19.14    | 8829472m  | 62.77047  | ng     |
| 30) C14(44) #2                     | 19.96    | 15867236m | 65.35135  | ng     |
| 31) C14(66) #2                     | 22.36    | 17250936m | 64.10991  | ng     |
| 32) C15(101) #2                    | 23.24    | 9623376m  | 62.91133  | ng     |
| 35) C15(118) #2                    | 26.35    | 16679833m | 67.49850  | ng     |
| 36) C16(153) #2                    | 26.94    | 18115332  | 69.71873  | ng     |
| 37) C15(105) #2                    | 27.20    | 21531386m | 60.01589  | ng     |
| 38) C16(138) #2                    | 27.78    | 16375542m | 66.69193  | ng     |
| 39) C17(187) #2                    | 28.14    | 16180526m | 60.32501  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7526.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0423\M7526.D\ECD2B.CH  
 Acq On : 11-8-2014 07:21:09 AM Operator: RR  
 Sample : M8390MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0113 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:31:13 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 23037786m | 61.03682 | ng    |
| 41) | C17(180) #2  | 29.59 | 20516305m | 60.64821 | ng    |
| 42) | C17(170) #2  | 30.22 | 21887344m | 59.29019 | ng    |
| 43) | C18(195) #2  | 31.09 | 20671434m | 60.97482 | ng    |
| 44) | C19(206) #2  | 32.18 | 18333427m | 59.95585 | ng    |
| 45) | C110(209) #2 | 32.62 | 14951032m | 62.96253 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7526.D MM0417C.M Mon Nov 24 14:06:48 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7527.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0423\M7527.D\ECD2B.CH  
 Acq On : 11-8-2014 08:05:46 AM Operator: RR  
 Sample : M8391-P(2) Inst : INST. M  
 Misc : NBH14-0117 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:29 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3497694m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.22    | 7207309m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 15935191m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 37575236m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8977421   | 360.47806 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 94.90% |
| 11) s C16(152)                     | 20.48    | 12233397m | 343.13935 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 89.97% |
| 27) s C13(34) #2                   | 16.47    | 45434020m | 355.90867 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 93.69% |
| 34) s C16(152) #2                  | 23.62    | 61252362m | 291.04131 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 76.31% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.20    | 112985m   | 1.41303   | ng     |
| 3) C13(18)                         | 12.13    | 132727m   | 0.31586   | ng     |
| 5) C13(28)                         | 14.20    | 612138m   | 10.35181  | ng     |
| 6) C14(52)                         | 15.83    | 588070m   | 11.37913  | ng     |
| 7) C14(44)                         | 16.70    | 330249m   | 3.85185   | ng     |
| 8) C14(66)                         | 18.60    | 654537m   | 9.38099   | ng     |
| 9) C15(101)                        | 19.72    | 828316    | 13.48199  | ng     |
| 12) C15(118)                       | 22.39    | 1193667m  | 19.90868  | ng     |
| 13) C16(153)                       | 23.43    | 980535m   | 17.86347  | ng     |
| 14) C15(105)                       | 23.45    | 481638m   | 4.93932   | ng     |
| 15) C16(138)                       | 24.53    | 1241843m  | 16.88231  | ng     |
| 16) C17(187)                       | 25.29    | 212054m   | 1.39156   | ng     |
| 17) C16(128)                       | 25.62    | 317891m   | 4.19451   | ng     |
| 18) C17(180)                       | 27.15    | 200728m   | 1.08711   | ng     |
| 19) C17(170)                       | 27.96    | 159893m   | 0.44799   | ng     |
| 20) C18(195)                       | 29.04    | 34757m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.30    | 49894m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.89    | 10463m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 466689m   | 1.79001   | ng     |
| 26) C13(18) #2                     | 14.99    | 648675m   | 0.36542   | ng     |
| 28) C13(28) #2                     | 17.76    | 3383948m  | 12.54894  | ng     |
| 29) C14(52) #2                     | 19.15    | 2792758m  | 17.83166  | ng     |
| 30) C14(44) #2                     | 19.96    | 1572705m  | 4.78911   | ng     |
| 31) C14(66) #2                     | 22.35    | 2785390m  | 8.59418   | ng     |
| 32) C15(101) #2                    | 23.22 T  | 2714850m  | 15.50168  | ng     |
| 35) C15(118) #2                    | 26.33    | 5899566m  | 21.89096  | ng     |
| 36) C16(153) #2                    | 26.94    | 5304089m  | 18.09629  | ng     |
| 37) C15(105) #2                    | 27.20    | 2159840m  | 4.48527   | ng     |
| 38) C16(138) #2                    | 27.78    | 4249797m  | 17.29264  | ng     |
| 39) C17(187) #2                    | 28.13    | 1324956m  | 2.61343   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7527.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0423\M7527.D\ECD2B.CH  
 Acq On : 11-8-2014 08:05:46 AM Operator: RR  
 Sample : M8391-P(2) Inst : INST. M  
 Misc : NBH14-0117 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:29 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:53:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 1815380m | 3.06011  | ng    |
| 41) | C17(180) #2  | 29.58 | 1086387m | 1.57499  | ng    |
| 42) | C17(170) #2  | 30.22 | 708003m  | 0.54425  | ng    |
| 43) | C18(195) #2  | 31.09 | 172696m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 100982m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.63 | 31575m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7528.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0423\M7528.D\ECD2B.CH  
 Acq On : 11-8-2014 08:50:34 AM Operator: RR  
 Sample : M8395-P(2) Inst : INST. M  
 Misc : NBH14-0133 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc       | Units   |
|------------------------------------|----------|-------------|------------|---------|
| <b>Internal Standards</b>          |          |             |            |         |
| 1) I C15(96)                       | 17.39    | 3530570m    | 95.00000   | ng      |
| 10) I C16(161)                     | 23.22    | 6831259m    | 95.00000   | ng      |
| 24) I C15(96) #2                   | 20.52    | 12932455m   | 95.00000   | ng      |
| 33) I C16(161) #2                  | 26.79    | 25010599m   | 95.00000   | ng      |
| <b>System Monitoring Compounds</b> |          |             |            |         |
| 4) s C13(34)                       | 13.40    | 8563792     | 328.88280  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 86.58%  |
| 11) s C16(152)                     | 20.49    | 9785959     | 279.58470  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 73.31%  |
| 27) s C13(34) #2                   | 16.48    | 38775156m   | 384.10946  | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =          | 101.12% |
| 34) s C16(152) #2                  | 23.63    | 43332871    | 306.86213  | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =          | 80.46%  |
| <b>Target Compounds</b>            |          |             |            |         |
| 2) C12(8)                          | 10.21    | 2665296     | 138.30309  | ng      |
| 3) C13(18)                         | 12.13    | 2995163     | 123.85984  | ng      |
| 5) C13(28)                         | 14.20    | E 20963156m | BelowCal   | ng      |
| 6) C14(52)                         | 15.84    | e 11438654  | BelowCal   | ng      |
| 7) C14(44)                         | 16.71    | 7532155     | 176.93549  | ng      |
| 8) C14(66)                         | 18.62    | e 14664576m | 363.57292  | ng      |
| 9) C15(101)                        | 19.73    | e 15995933  | 370.46120  | ng      |
| 12) C15(118)                       | 22.40    | E 44077539  | BelowCal   | ng      |
| 13) C16(153)                       | 23.45    | E 43228318  | BelowCal   | ng      |
| 14) C15(105)                       | 23.47    | e 12919825m | 259.40567  | ng      |
| 15) C16(138)                       | 24.55    | E 38643360  | 1037.55738 | ng      |
| 16) C17(187)                       | 25.30    | 3310940     | 60.58544   | ng      |
| 17) C16(128)                       | 25.64    | 9236525     | 160.74830  | ng      |
| 18) C17(180)                       | 27.17    | 5972892m    | 93.99185   | ng      |
| 19) C17(170)                       | 27.97    | 5080260m    | 69.56040   | ng      |
| 20) C18(195)                       | 29.05    | 784407      | 10.00333   | ng      |
| 21) C19(206)                       | 30.31    | 1278479m    | 18.11835   | ng      |
| 22) C110(209)                      | 30.91    | 313179m     | 4.30113    | ng      |
| 25) C12(8) #2                      | 13.11    | 11047255m   | 139.33126  | ng      |
| 26) C13(18) #2                     | 14.99    | 13277434m   | 151.65076  | ng      |
| 28) C13(28) #2                     | 17.76    | e 78674898  | BelowCal   | ng      |
| 29) C14(52) #2                     | 19.15    | e 53664139  | BelowCal   | ng      |
| 30) C14(44) #2                     | 19.96    | 32931515m   | 191.95288  | ng      |
| 31) C14(66) #2                     | 22.36    | e 76272322m | 489.79445  | ng      |
| 32) C15(101) #2                    | 23.23    | e 68666105m | 482.35494  | ng      |
| 35) C15(118) #2                    | 26.34    | E 138660249 | 1030.26415 | ng      |
| 36) C16(153) #2                    | 26.94    | e 94933375  | 559.09690  | ng      |
| 37) C15(105) #2                    | 27.21    | 65089280    | 265.90807  | ng      |
| 38) C16(138) #2                    | 27.78    | e 108905157 | 543.70126  | ng      |
| 39) C17(187) #2                    | 28.14    | 14622194m   | 83.77913   | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7528.D\ECD1A.CH Vial: 23  
 Signal #2 : I:\M\DATA\SM0423\M7528.D\ECD2B.CH  
 Acq On : 11-8-2014 08:50:34 AM Operator: RR  
 Sample : M8395-P(2) Inst : INST. M  
 Misc : NBH14-0133 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:33 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:29 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 39987889m | 160.09064 | ng    |
| 41) | C17(180) #2  | 29.59 | 24874672m | 111.62584 | ng    |
| 42) | C17(170) #2  | 30.22 | 19538787m | 80.63958  | ng    |
| 43) | C18(195) #2  | 31.09 | 2909161m  | 12.30822  | ng    |
| 44) | C19(206) #2  | 32.19 | 2272754m  | 10.61964  | ng    |
| 45) | C110(209) #2 | 32.63 | 1158323m  | 6.25517   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7530.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0423\M7530.D\ECD2B.CH  
 Acq On : 08 Nov 2014 10:20 am Operator: RR  
 Sample : M8396-P(2) Inst : INST. M  
 Misc : NBH14-0137 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:01:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:01:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.39    | 2980050m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.22    | 6981212m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 12537385m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 28703854    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 7665991m    | 361.84805 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 95.26%  |
| 11) s C16(152)                     | 20.49    | 8987262     | 246.71668 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 64.69%  |
| 27) s C13(34) #2                   | 16.48    | 37792846m   | 387.33758 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 101.97% |
| 34) s C16(152) #2                  | 23.63    | 41909757m   | 264.23663 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 69.28%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 881781m     | 46.64230  | ng      |
| 3) C13(18)                         | 12.13    | 1076401m    | 45.50223  | ng      |
| 5) C13(28)                         | 14.20    | 7616592m    | 219.44835 | ng      |
| 6) C14(52)                         | 15.84    | 4999640m    | 199.14618 | ng      |
| 7) C14(44)                         | 16.71    | 3658290m    | 93.13408  | ng      |
| 8) C14(66)                         | 18.61    | 7298471m    | 177.70210 | ng      |
| 9) C15(101)                        | 19.72    | 8941219     | 218.10396 | ng      |
| 12) C15(118)                       | 22.40    | e 18613503m | 503.93203 | ng      |
| 13) C16(153)                       | 23.44    | e 11217711m | 248.28855 | ng      |
| 14) C15(105)                       | 23.46    | 7968060m    | 137.85824 | ng      |
| 15) C16(138)                       | 24.54    | e 20262249  | 372.86148 | ng      |
| 16) C17(187)                       | 25.30    | 2048203     | 35.36964  | ng      |
| 17) C16(128)                       | 25.63    | 5044587     | 81.93295  | ng      |
| 18) C17(180)                       | 27.17    | 3251122m    | 48.60883  | ng      |
| 19) C17(170)                       | 27.97    | 2667554m    | 34.63769  | ng      |
| 20) C18(195)                       | 29.04    | 398620m     | 4.19719   | ng      |
| 21) C19(206)                       | 30.31    | 637383m     | 8.14580   | ng      |
| 22) C110(209)                      | 30.91    | 222247m     | 2.52034   | ng      |
| 25) C12(8) #2                      | 13.10    | 4668666m    | 54.70424  | ng      |
| 26) C13(18) #2                     | 14.99    | 5565691m    | 57.18550  | ng      |
| 28) C13(28) #2                     | 17.76    | 36742250m   | 231.99105 | ng      |
| 29) C14(52) #2                     | 19.15    | 23170251m   | 269.10925 | ng      |
| 30) C14(44) #2                     | 19.96    | 14247822m   | 77.20183  | ng      |
| 31) C14(66) #2                     | 22.36    | 35377032m   | 187.87650 | ng      |
| 32) C15(101) #2                    | 23.23    | 25944548m   | 212.28742 | ng      |
| 35) C15(118) #2                    | 26.34    | e 89328902  | 536.84691 | ng      |
| 36) C16(153) #2                    | 26.94    | e 66095200  | 344.70967 | ng      |
| 37) C15(105) #2                    | 27.21    | 37535008    | 138.12510 | ng      |
| 38) C16(138) #2                    | 27.78    | e 65225536  | 314.49667 | ng      |
| 39) C17(187) #2                    | 28.14    | 8805485m    | 43.14948  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7530.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0423\M7530.D\ECD2B.CH  
 Acq On : 08 Nov 2014 10:20 am Operator: RR  
 Sample : M8396-P(2) Inst : INST. M  
 Misc : NBH14-0137 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:01:39 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:01:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 23974402m | 84.63643 | ng    |
| 41) | C17(180) #2  | 29.59 | 15375815m | 60.43018 | ng    |
| 42) | C17(170) #2  | 30.22 | 12071050m | 43.32940 | ng    |
| 43) | C18(195) #2  | 31.08 | 2011141m  | 6.89932  | ng    |
| 44) | C19(206) #2  | 32.18 | 1827124m  | 7.10403  | ng    |
| 45) | C110(209) #2 | 32.62 | 945636m   | 4.02387  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7531.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0423\M7531.D\ECD2B.CH  
 Acq On : 08 Nov 2014 11:05 am Operator: RR  
 Sample : M8397-P(2) Inst : INST. M  
 Misc : NBH14-0141 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.39    | 3649612     | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 5855936m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 13606181m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 28428383    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 9282629     | 355.03369 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 93.46%  |
| 11) s C16(152)                     | 20.49    | 10355079    | 361.07381 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 94.67%  |
| 27) s C13(34) #2                   | 16.48    | 43931074m   | 433.41896 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 114.10% |
| 34) s C16(152) #2                  | 23.63    | 49182752    | 306.47550 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 80.36%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | 3108584m    | 160.69532 | ng      |
| 3) C13(18)                         | 12.13    | 3642200     | 151.49922 | ng      |
| 5) C13(28)                         | 14.20    | E 33617621  | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | e 11776208  | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 7034015     | 156.56998 | ng      |
| 8) C14(66)                         | 18.61    | 10457688m   | 215.71453 | ng      |
| 9) C15(101)                        | 19.72    | e 13243203  | 275.39889 | ng      |
| 12) C15(118)                       | 22.40    | E 34063122  | BelowCal  | ng      |
| 13) C16(153)                       | 23.43    | e 11890068m | 327.35747 | ng      |
| 14) C15(105)                       | 23.46    | 8809965m    | 192.25445 | ng      |
| 15) C16(138)                       | 24.54    | e 26011613  | 654.45917 | ng      |
| 16) C17(187)                       | 25.30    | 2286973m    | 48.11166  | ng      |
| 17) C16(128)                       | 25.63    | 6149178     | 122.01474 | ng      |
| 18) C17(180)                       | 27.17    | 3914099m    | 70.99143  | ng      |
| 19) C17(170)                       | 27.97    | 3315552m    | 52.34333  | ng      |
| 20) C18(195)                       | 29.04    | 483229      | 6.75221   | ng      |
| 21) C19(206)                       | 30.31    | 493181m     | 7.41094   | ng      |
| 22) C110(209)                      | 30.91    | 207402m     | 2.97550   | ng      |
| 25) C12(8) #2                      | 13.10    | 14449874m   | 181.16103 | ng      |
| 26) C13(18) #2                     | 14.99    | 16847732m   | 191.21669 | ng      |
| 28) C13(28) #2                     | 17.76    | e 95903361  | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | e 58317495  | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 32233700m   | 176.12627 | ng      |
| 31) C14(66) #2                     | 22.36    | 43117873m   | 215.00418 | ng      |
| 32) C15(101) #2                    | 23.23    | e 90199946  | 577.74222 | ng      |
| 35) C15(118) #2                    | 26.34    | E 117703345 | 735.92210 | ng      |
| 36) C16(153) #2                    | 26.94    | e 74749831  | 392.35758 | ng      |
| 37) C15(105) #2                    | 27.20    | 53760762m   | 196.89445 | ng      |
| 38) C16(138) #2                    | 27.78    | e 77272581  | 367.10577 | ng      |
| 39) C17(187) #2                    | 28.14    | 10616184m   | 52.97421  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7531.D\ECD1A.CH Vial: 26  
 Signal #2 : I:\M\DATA\SM0423\M7531.D\ECD2B.CH  
 Acq On : 08 Nov 2014 11:05 am Operator: RR  
 Sample : M8397-P(2) Inst : INST. M  
 Misc : NBH14-0141 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 29414028  | 104.67454 | ng    |
| 41) | C17(180) #2  | 29.59 | 17978944m | 71.38272  | ng    |
| 42) | C17(170) #2  | 30.22 | 14484727  | 52.62732  | ng    |
| 43) | C18(195) #2  | 31.08 | 2133892m  | 7.48487   | ng    |
| 44) | C19(206) #2  | 32.18 | 1829367m  | 7.19401   | ng    |
| 45) | C110(209) #2 | 32.62 | 851203m   | 3.52233   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7532.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0423\M7532.D\ECD2B.CH  
 Acq On : 08 Nov 2014 11:49 am Operator: RR  
 Sample : M8398-P(2) Inst : INST. M  
 Misc : NBH14-0145 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response    | Conc      | Units   |
|------------------------------------|----------|-------------|-----------|---------|
| <b>Internal Standards</b>          |          |             |           |         |
| 1) I C15(96)                       | 17.39    | 3730211m    | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 6615296m    | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 12952429m   | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 24833214    | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |             |           |         |
| 4) s C13(34)                       | 13.40    | 8893332     | 320.19530 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 84.29%  |
| 11) s C16(152)                     | 20.49    | 10088922    | 301.23376 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 78.98%  |
| 27) s C13(34) #2                   | 16.48    | 40681322m   | 413.73298 | ng      |
| Spiked Amount                      | 379.8670 | Recovery    | =         | 108.92% |
| 34) s C16(152) #2                  | 23.63    | 44862491    | 318.13878 | ng      |
| Spiked Amount                      | 381.3865 | Recovery    | =         | 83.42%  |
| <b>Target Compounds</b>            |          |             |           |         |
| 2) C12(8)                          | 10.21    | e 7137469   | BelowCal  | ng      |
| 3) C13(18)                         | 12.13    | e 7980760   | BelowCal  | ng      |
| 5) C13(28)                         | 14.20    | E 64621479  | BelowCal  | ng      |
| 6) C14(52)                         | 15.84    | E 21543819  | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | e 11768756  | 295.63961 | ng      |
| 8) C14(66)                         | 18.61    | e 14356932m | 322.52635 | ng      |
| 9) C15(101)                        | 19.72    | e 18519788  | 424.42952 | ng      |
| 12) C15(118)                       | 22.40    | E 43796677  | BelowCal  | ng      |
| 13) C16(153)                       | 23.44    | e 22137430m | 655.81665 | ng      |
| 14) C15(105)                       | 23.46    | 11646938m   | 235.36828 | ng      |
| 15) C16(138)                       | 24.54    | E 30923961  | 708.47402 | ng      |
| 16) C17(187)                       | 25.30    | 2859122m    | 53.61620  | ng      |
| 17) C16(128)                       | 25.63    | 6998997     | 123.00847 | ng      |
| 18) C17(180)                       | 27.17    | 4624383m    | 74.39714  | ng      |
| 19) C17(170)                       | 27.97    | 3821282m    | 53.45033  | ng      |
| 20) C18(195)                       | 29.04    | 575836m     | 7.20747   | ng      |
| 21) C19(206)                       | 30.31    | 748994m     | 10.42250  | ng      |
| 22) C110(209)                      | 30.91    | 170192m     | 1.74461   | ng      |
| 25) C12(8) #2                      | 13.11    | e 36930051  | BelowCal  | ng      |
| 26) C13(18) #2                     | 14.99    | e 37732444  | BelowCal  | ng      |
| 28) C13(28) #2                     | 17.76    | E 174917382 | BelowCal  | ng      |
| 29) C14(52) #2                     | 19.15    | E 100789627 | BelowCal  | ng      |
| 30) C14(44) #2                     | 19.96    | 53950991    | 370.04211 | ng      |
| 31) C14(66) #2                     | 22.36    | 52926248m   | 292.70462 | ng      |
| 32) C15(101) #2                    | 23.23    | E 97987284  | 641.67901 | ng      |
| 35) C15(118) #2                    | 26.34    | E 133685799 | 995.02737 | ng      |
| 36) C16(153) #2                    | 26.94    | e 87707382  | 521.81560 | ng      |
| 37) C15(105) #2                    | 27.21    | 56125657    | 233.03680 | ng      |
| 38) C16(138) #2                    | 27.78    | e 79405283  | 421.32014 | ng      |
| 39) C17(187) #2                    | 28.14    | 12711048m   | 73.21764  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7532.D\ECD1A.CH Vial: 27  
 Signal #2 : I:\M\DATA\SM0423\M7532.D\ECD2B.CH  
 Acq On : 08 Nov 2014 11:49 am Operator: RR  
 Sample : M8398-P(2) Inst : INST. M  
 Misc : NBH14-0145 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc      | Units |
|-----|--------------|-------|-----------|-----------|-------|
| 40) | C16(128) #2  | 28.54 | 30612627  | 124.33739 | ng    |
| 41) | C17(180) #2  | 29.59 | 18458282m | 83.82576  | ng    |
| 42) | C17(170) #2  | 30.22 | 13451987m | 55.97431  | ng    |
| 43) | C18(195) #2  | 31.08 | 2145442m  | 8.81171   | ng    |
| 44) | C19(206) #2  | 32.18 | 1850047m  | 8.50596   | ng    |
| 45) | C110(209) #2 | 32.62 | 641798m   | 2.83764   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7533.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0423\M7533.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:34 pm Operator: RR  
 Sample : M8399-P(2) Inst : INST. M  
 Misc : NBH14-0149 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.40    | 3467952   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 7095996m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.52    | 14430981m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.79    | 33620717m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 9069864   | 372.25938 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 98.00%  |
| 11) s C16(152)                     | 20.48    | 11585034m | 327.12856 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 85.77%  |
| 27) s C13(34) #2                   | 16.48    | 45015651m | 409.10704 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 107.70% |
| 34) s C16(152) #2                  | 23.63    | 57235301  | 302.22374 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 79.24%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 587683    | 24.42222  | ng      |
| 3) C13(18)                         | 12.13    | 911985    | 31.30514  | ng      |
| 5) C13(28)                         | 14.20    | 4233452m  | 92.21613  | ng      |
| 6) C14(52)                         | 15.84    | 3194374   | 96.17579  | ng      |
| 7) C14(44)                         | 16.70    | 1754302   | 34.72350  | ng      |
| 8) C14(66)                         | 18.61    | 2619668m  | 47.23817  | ng      |
| 9) C15(101)                        | 19.72    | 3441317   | 63.84452  | ng      |
| 12) C15(118)                       | 22.39    | 5222140m  | 103.47713 | ng      |
| 13) C16(153)                       | 23.43    | 4154473m  | 82.69805  | ng      |
| 14) C15(105)                       | 23.45    | 2138384m  | 31.33343  | ng      |
| 15) C16(138)                       | 24.54    | 5238358m  | 82.12877  | ng      |
| 16) C17(187)                       | 25.29    | 623881m   | 8.84300   | ng      |
| 17) C16(128)                       | 25.62    | 1327218m  | 20.03926  | ng      |
| 18) C17(180)                       | 27.16    | 925616m   | 12.12355  | ng      |
| 19) C17(170)                       | 27.96    | 712644m   | 7.83337   | ng      |
| 20) C18(195)                       | 29.04    | 143381    | 0.49392   | ng      |
| 21) C19(206)                       | 30.30    | 118742m   | 0.41970   | ng      |
| 22) C110(209)                      | 30.91    | 41921m    | BelowCal  | ng      |
| 25) C12(8) #2                      | 13.11    | 2467188m  | 23.04439  | ng      |
| 26) C13(18) #2                     | 14.99    | 4346775m  | 36.42782  | ng      |
| 28) C13(28) #2                     | 17.76    | 19910328m | 97.82300  | ng      |
| 29) C14(52) #2                     | 19.15    | 15309613m | 133.75829 | ng      |
| 30) C14(44) #2                     | 19.96    | 8561500m  | 38.30748  | ng      |
| 31) C14(66) #2                     | 22.35    | 11678782m | 48.01837  | ng      |
| 32) C15(101) #2                    | 23.23    | 8885202m  | 65.47292  | ng      |
| 35) C15(118) #2                    | 26.34    | 25288536m | 119.88767 | ng      |
| 36) C16(153) #2                    | 26.93    | 19355693m | 85.44825  | ng      |
| 37) C15(105) #2                    | 27.20    | 10567968m | 32.89233  | ng      |
| 38) C16(138) #2                    | 27.78    | 17834682m | 81.88293  | ng      |
| 39) C17(187) #2                    | 28.14    | 3647309m  | 13.62992  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7533.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0423\M7533.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:34 pm Operator: RR  
 Sample : M8399-P(2) Inst : INST. M  
 Misc : NBH14-0149 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:54:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:54:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 7124117m | 20.36585 | ng    |
| 41) | C17(180) #2  | 29.59 | 4874898m | 15.28790 | ng    |
| 42) | C17(170) #2  | 30.22 | 3285319m | 9.05333  | ng    |
| 43) | C18(195) #2  | 31.08 | 574201m  | 0.67231  | ng    |
| 44) | C19(206) #2  | 32.18 | 415314m  | 0.45120  | ng    |
| 45) | C110(209) #2 | 32.62 | 211651m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7533.D MM0417C.M Mon Nov 24 14:06:56 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7544.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0423\M7544.D\ECD2B.CH  
 Acq On : 11-8-2014 08:44:38 PM Operator: RR  
 Sample : M8377-P-D(4) Inst : INST. M  
 Misc : NBH14-0281 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response | Conc     | Units |
|------------------------------------|---------|----------|----------|-------|
| <b>Internal Standards</b>          |         |          |          |       |
| 1) I C15(96)                       | 17.39   | 3048730m | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 7221829  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 18877567 | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 41158929 | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |          |          |       |
| 4) s C13(34)                       | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d       | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery | =        | 0.00% |
| <b>Target Compounds</b>            |         |          |          |       |
| 2) C12(8)                          | 0.00    | 0d       | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d       | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 353266m  | 6.03941  | ng    |
| 6) C14(52)                         | 0.00    | 0d       | N.D.     | ng    |
| 7) C14(44)                         | 0.00    | 0d       | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d       | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d       | N.D.     | ng    |
| 12) C15(118)                       | 22.39   | 791660m  | 12.13399 | ng    |
| 13) C16(153)                       | 0.00    | 0d       | N.D.     | ng    |
| 14) C15(105)                       | 0.00    | 0d       | N.D.     | ng    |
| 15) C16(138)                       | 0.00    | 0d       | N.D.     | ng    |
| 16) C17(187)                       | 0.00    | 0d       | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d       | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d       | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d       | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d       | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d       | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d       | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d       | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 2322316m | 6.42002  | ng    |
| 29) C14(52) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 30) C14(44) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d       | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 35) C15(118) #2                    | 26.33   | 4527358m | 14.25718 | ng    |
| 36) C16(153) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 37) C15(105) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 38) C16(138) #2                    | 0.00    | 0d       | N.D.     | ng    |
| 39) C17(187) #2                    | 0.00    | 0d       | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7544.D\ECD1A.CH Vial: 39  
 Signal #2 : I:\M\DATA\SM0423\M7544.D\ECD2B.CH  
 Acq On : 11-8-2014 08:44:38 PM Operator: RR  
 Sample : M8377-P-D(4) Inst : INST. M  
 Misc : NBH14-0281 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7545.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0423\M7545.D\ECD2B.CH  
 Acq On : 11-8-2014 09:29:29 PM Operator: RR  
 Sample : M8378-P-D(4) Inst : INST. M  
 Misc : NBH14-0285 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 3151053m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 7453505m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.52   | 15019310m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37758922m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 672302m   | 13.16393 | ng    |
| 6) C14(52)                         | 15.84   | 779452    | 19.71598 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 18.62   | 724561m   | 12.15476 | ng    |
| 9) C15(101)                        | 19.72   | 1130912   | 21.40282 | ng    |
| 12) C15(118)                       | 22.39   | 1716150m  | 28.96921 | ng    |
| 13) C16(153)                       | 23.43   | 1244076m  | 22.19082 | ng    |
| 14) C15(105)                       | 23.46   | 641728m   | 7.06449  | ng    |
| 15) C16(138)                       | 24.54   | 1770350m  | 24.23191 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 4046314m  | 16.48929 | ng    |
| 29) C14(52) #2                     | 19.15   | 3788783m  | 26.98305 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 22.36   | 3608297m  | 12.57745 | ng    |
| 32) C15(101) #2                    | 23.23   | 3437566m  | 22.23112 | ng    |
| 35) C15(118) #2                    | 26.34   | 7905015m  | 30.40956 | ng    |
| 36) C16(153) #2                    | 26.93   | 5831103m  | 20.16656 | ng    |
| 37) C15(105) #2                    | 27.20   | 3327543m  | 7.90273  | ng    |
| 38) C16(138) #2                    | 27.78   | 6293360m  | 25.83919 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7545.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0423\M7545.D\ECD2B.CH  
 Acq On : 11-8-2014 09:29:29 PM Operator: RR  
 Sample : M8378-P-D(4) Inst : INST. M  
 Misc : NBH14-0285 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7546.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0423\M7546.D\ECD2B.CH  
 Acq On : 08 Nov 2014 10:14 pm Operator: RR  
 Sample : M8379-P-D(4) Inst : INST. M  
 Misc : NBH14-0289 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 2818436m  | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6153499m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.51   | 16473995m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 42163722m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 0.00    | 0d        | N.D.     | ng    |
| 6) C14(52)                         | 0.00    | 0d        | N.D.     | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.39   | 945705m   | 18.24606 | ng    |
| 13) C16(153)                       | 23.43   | 772018m   | 16.38306 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 998250m   | 15.75023 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 29) C14(52) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.33   | 5846510m  | 18.91021 | ng    |
| 36) C16(153) #2                    | 26.93   | 4487214m  | 12.67334 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 4658497m  | 16.87337 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7546.D\ECD1A.CH Vial: 41  
 Signal #2 : I:\M\DATA\SM0423\M7546.D\ECD2B.CH  
 Acq On : 08 Nov 2014 10:14 pm Operator: RR  
 Sample : M8379-P-D(4) Inst : INST. M  
 Misc : NBH14-0289 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:55:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:55:51 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7550.D\ECD1A.CH Vial: 45  
 Signal #2 : I:\M\DATA\SM0423\M7550.D\ECD2B.CH  
 Acq On : 11-9-2014 01:13:44 AM Operator: RR  
 Sample : M8395-P-D(4) Inst : INST. M  
 Misc : NBH14-0133 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units  |
|------------------------------------|---------|-----------|----------|--------|
| <b>Internal Standards</b>          |         |           |          |        |
| 1) I C15(96)                       | 17.39   | 2880283   | 95.00000 | ng     |
| 10) I C16(161)                     | 23.21   | 6695342m  | 95.00000 | ng     |
| 24) I C15(96) #2                   | 20.51   | 14313584m | 95.00000 | ng     |
| 33) I C16(161) #2                  | 26.79   | 34615467m | 95.00000 | ng     |
| <b>System Monitoring Compounds</b> |         |           |          |        |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng     |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00%  |
| 11) s C16(152)                     | 20.48   | 832053    | 18.39336 | ng     |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 96.42% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng     |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00%  |
| 34) s C16(152) #2                  | 23.62   | 3565815m  | 17.40121 | ng     |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 91.22% |
| <b>Target Compounds</b>            |         |           |          |        |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng     |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng     |
| 5) C13(28)                         | 14.20   | 1148272m  | 26.93629 | ng     |
| 6) C14(52)                         | 15.83   | 762157    | 21.54700 | ng     |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng     |
| 8) C14(66)                         | 18.61   | 767901m   | 14.53997 | ng     |
| 9) C15(101)                        | 19.72   | 1220233   | 25.63629 | ng     |
| 12) C15(118)                       | 22.39   | 2083039m  | 40.44352 | ng     |
| 13) C16(153)                       | 23.43   | 1458462m  | 29.36863 | ng     |
| 14) C15(105)                       | 23.46   | 760778m   | 10.11356 | ng     |
| 15) C16(138)                       | 24.53   | 2171984m  | 34.08935 | ng     |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng     |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng     |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng     |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng     |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng     |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng     |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng     |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng     |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng     |
| 28) C13(28) #2                     | 17.76   | 5419221m  | 24.09022 | ng     |
| 29) C14(52) #2                     | 19.14   | 3952379m  | 29.84920 | ng     |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng     |
| 31) C14(66) #2                     | 22.36   | 4028489m  | 15.09446 | ng     |
| 32) C15(101) #2                    | 23.23   | 3845319m  | 26.77591 | ng     |
| 35) C15(118) #2                    | 26.33   | 10058395m | 43.66422 | ng     |
| 36) C16(153) #2                    | 26.93   | 7522154m  | 29.96390 | ng     |
| 37) C15(105) #2                    | 27.20   | 4616505m  | 12.93353 | ng     |
| 38) C16(138) #2                    | 27.78   | 8040825m  | 36.19968 | ng     |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0423\M7550.D\ECD1A.CH Vial: 45  
 Signal #2 : I:\M\DATA\SM0423\M7550.D\ECD2B.CH  
 Acq On : 11-9-2014 01:13:44 AM Operator: RR  
 Sample : M8395-P-D(4) Inst : INST. M  
 Misc : NBH14-0133 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7552.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0423\M7552.D\ECD2B.CH  
 Acq On : 11-9-2014 02:43:08 AM Operator: RR  
 Sample : M8396-P-D(4) Inst : INST. M  
 Misc : NBH14-0137 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:32:01 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2961828   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 6855590m  | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.51   | 15576981m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 39984413  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 0.00    | 0d        | N.D.     | ng    |
| 6) C14(52)                         | 0.00    | 0d        | N.D.     | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 0.00    | 0d        | N.D.     | ng    |
| 12) C15(118)                       | 22.39   | 1300015m  | 23.26357 | ng    |
| 13) C16(153)                       | 23.43   | 933887m   | 17.88801 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1325473m  | 19.24871 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 29) C14(52) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 35) C15(118) #2                    | 26.33   | 6873114m  | 24.31176 | ng    |
| 36) C16(153) #2                    | 26.94   | 5535684m  | 17.67293 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 5304917m  | 20.42469 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7552.D\ECD1A.CH Vial: 47  
 Signal #2 : I:\M\DATA\SM0423\M7552.D\ECD2B.CH  
 Acq On : 11-9-2014 02:43:08 AM Operator: RR  
 Sample : M8396-P-D(4) Inst : INST. M  
 Misc : NBH14-0137 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 08:32:01 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 08:31:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7553.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0423\M7553.D\ECD2B.CH  
 Acq On : 11-9-2014 03:27:49 AM Operator: RR  
 Sample : M8397-P-D(4) Inst : INST. M  
 Misc : NBH14-0141 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.40   | 2938973   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.22   | 6629681   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.51   | 15046552m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 37848133  | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 0.00    | 0d        | N.D.     | ng    |
| 3) C13(18)                         | 0.00    | 0d        | N.D.     | ng    |
| 5) C13(28)                         | 14.20   | 1137705m  | 26.06832 | ng    |
| 6) C14(52)                         | 15.84   | 782842    | 21.73349 | ng    |
| 7) C14(44)                         | 0.00    | 0d        | N.D.     | ng    |
| 8) C14(66)                         | 0.00    | 0d        | N.D.     | ng    |
| 9) C15(101)                        | 19.72   | 988099    | 19.92440 | ng    |
| 12) C15(118)                       | 22.39   | 1646430m  | 31.52323 | ng    |
| 13) C16(153)                       | 23.43   | 1085930m  | 21.75353 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1518753m  | 23.27892 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 0.00    | 0d        | N.D.     | ng    |
| 26) C13(18) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 28) C13(28) #2                     | 17.76   | 6421330m  | 27.46731 | ng    |
| 29) C14(52) #2                     | 19.15   | 4214957m  | 30.33095 | ng    |
| 30) C14(44) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 31) C14(66) #2                     | 0.00    | 0d        | N.D.     | ng    |
| 32) C15(101) #2                    | 23.23   | 3067397m  | 19.36027 | ng    |
| 35) C15(118) #2                    | 26.33   | 8356260m  | 32.27193 | ng    |
| 36) C16(153) #2                    | 26.94   | 5899529m  | 20.39176 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 5824706   | 23.80835 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7553.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0423\M7553.D\ECD2B.CH  
 Acq On : 11-9-2014 03:27:49 AM Operator: RR  
 Sample : M8397-P-D(4) Inst : INST. M  
 Misc : NBH14-0141 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:16 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7554.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0423\M7554.D\ECD2B.CH  
 Acq On : 11-9-2014 04:12:40 AM Operator: RR  
 Sample : M8398-P-D(4) Inst : INST. M  
 Misc : NBH14-0145 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.    | Response  | Conc     | Units |
|------------------------------------|---------|-----------|----------|-------|
| <b>Internal Standards</b>          |         |           |          |       |
| 1) I C15(96)                       | 17.39   | 2927377   | 95.00000 | ng    |
| 10) I C16(161)                     | 23.21   | 6728469   | 95.00000 | ng    |
| 24) I C15(96) #2                   | 20.51   | 15823580m | 95.00000 | ng    |
| 33) I C16(161) #2                  | 26.79   | 40339284m | 95.00000 | ng    |
| <b>System Monitoring Compounds</b> |         |           |          |       |
| 4) s C13(34)                       | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 18.9997 | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 0.00    | 0d        | N.D.     | ng    |
| Spiked Amount                      | 19.0757 | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |         |           |          |       |
| 2) C12(8)                          | 10.21   | 460712    | 22.35210 | ng    |
| 3) C13(18)                         | 12.13   | 539802    | 20.25394 | ng    |
| 5) C13(28)                         | 14.20   | 2265902m  | 55.83383 | ng    |
| 6) C14(52)                         | 15.83   | 1386525   | 44.21609 | ng    |
| 7) C14(44)                         | 16.70   | 723169m   | 15.12283 | ng    |
| 8) C14(66)                         | 18.61   | 1178608m  | 23.46748 | ng    |
| 9) C15(101)                        | 19.72   | 1307893   | 27.15406 | ng    |
| 12) C15(118)                       | 22.39   | 2160587m  | 41.87230 | ng    |
| 13) C16(153)                       | 23.43   | 1457490m  | 29.19654 | ng    |
| 14) C15(105)                       | 0.00    | 0d        | N.D.     | ng    |
| 15) C16(138)                       | 24.53   | 1783819m  | 27.35462 | ng    |
| 16) C17(187)                       | 0.00    | 0d        | N.D.     | ng    |
| 17) C16(128)                       | 0.00    | 0d        | N.D.     | ng    |
| 18) C17(180)                       | 0.00    | 0d        | N.D.     | ng    |
| 19) C17(170)                       | 0.00    | 0d        | N.D.     | ng    |
| 20) C18(195)                       | 0.00    | 0d        | N.D.     | ng    |
| 21) C19(206)                       | 0.00    | 0d        | N.D.     | ng    |
| 22) C110(209)                      | 0.00    | 0d        | N.D.     | ng    |
| 25) C12(8) #2                      | 13.10   | 2492930m  | 20.99734 | ng    |
| 26) C13(18) #2                     | 14.99   | 2981942m  | 20.54579 | ng    |
| 28) C13(28) #2                     | 17.76   | 12506009m | 53.48392 | ng    |
| 29) C14(52) #2                     | 19.15   | 7990499m  | 58.09690 | ng    |
| 30) C14(44) #2                     | 19.96   | 4414614m  | 16.81679 | ng    |
| 31) C14(66) #2                     | 22.35   | 6750690m  | 24.02277 | ng    |
| 32) C15(101) #2                    | 23.23   | 4666991m  | 29.76725 | ng    |
| 35) C15(118) #2                    | 26.34   | 11392446m | 42.33056 | ng    |
| 36) C16(153) #2                    | 26.94   | 8164924m  | 27.64394 | ng    |
| 37) C15(105) #2                    | 0.00    | 0d        | N.D.     | ng    |
| 38) C16(138) #2                    | 27.78   | 7434104m  | 28.63234 | ng    |
| 39) C17(187) #2                    | 0.00    | 0d        | N.D.     | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7554.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0423\M7554.D\ECD2B.CH  
 Acq On : 11-9-2014 04:12:40 AM Operator: RR  
 Sample : M8398-P-D(4) Inst : INST. M  
 Misc : NBH14-0145 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 07:56:47 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 07:56:41 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7508.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0423\M7508.D\ECD2B.CH  
 Acq On : 11-7-2014 05:56:32 PM Operator: RR  
 Sample : CD586PB-P(0) Inst : INST. M  
 Misc : Procedural Blank 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:17 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3500251   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15534506m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 0.00  | 0d        | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d        | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7508.D MM0417F.M Mon Dec 08 11:01:52 2014 046776CFS



Signal #1 : I:\M\DATA\SM0423\M7509.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0423\M7509.D\ECD2B.CH  
 Acq On : 11-7-2014 06:40:55 PM Operator: RR  
 Sample : CD587LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:22 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.40 | 3678408   | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.52 | 16362055m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.74 | 1856656m  | 31.84318  | ng    | 85% |
| 5) C15(101) #2     | 23.22 | 12275654m | 35.51176  | ng    | 95% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0423\M7510.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0423\M7510.D\ECD2B.CH  
 Acq On : 11-7-2014 07:25:27 PM Operator: RR  
 Sample : M8157-P(2) Inst : INST. M  
 Misc : NBH14-0021 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:27 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3606887   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14908515m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2425028   | 41.02641 | ng    |
| 5) C15(101) #2     | 23.23 | 12358784m | 37.34353 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7510.D MM0417F.M Mon Dec 08 11:01:55 2014 046776CFS

Data File : I:\M\DATA\SM0423\M7511.D\ECD1A.CH Vial: 6  
 Acq On : 11-7-2014 08:09:52 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : NBH14-0077 5-128 14-0496 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0423\M7511.D\ECD2B.CH Vial: 6  
 Acq On : 11-7-2014 08:09:51 PM Operator: RR  
 Sample : M8169-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e  
 Quant Time: Dec 08 09:52:31 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3730347m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14801084m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1737504   | 27.75791 | ng    |
| 5) C15(101) #2     | 23.23 | 10001485m | 30.35347 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7511.D MM0417F.M Mon Dec 08 11:01:57 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7512.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0423\M7512.D\ECD2B.CH  
 Acq On : 11-7-2014 08:54:35 PM Operator: RR  
 Sample : M8172-P(2) Inst : INST. M  
 Misc : NBH14-0089 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:35 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3413799m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17180107m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 914706    | 15.17258 | ng    |
| 5) C15(101) #2     | 23.23 | 5722283m  | 15.18085 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7512.D MM0417F.M Mon Dec 08 11:01:59 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7513.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0423\M7513.D\ECD2B.CH  
 Acq On : 11-7-2014 09:39:31 PM Operator: RR  
 Sample : M8173-P(2) Inst : INST. M  
 Misc : NBH14-0093 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:40 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:34 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3821753   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14464983m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3208227   | 51.86081 | ng    |
| 5) C15(101) #2     | 23.23 | 19439905m | 61.88248 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7513.D MM0417F.M Mon Dec 08 11:02:01 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7514.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0423\M7514.D\ECD2B.CH  
 Acq On : 07 Nov 2014 10:24 pm Operator: RR  
 Sample : M8173DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0093 5-128 14-049 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:43 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:38 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3818478   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15214332m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3229338   | 52.26764 | ng    |
| 5) C15(101) #2     | 23.23 | 19510833m | 58.85809 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7514.D MM0417F.M Mon Dec 08 11:02:03 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7515.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0423\M7515.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:09 pm Operator: RR  
 Sample : M8174-P(2) Inst : INST. M  
 Misc : NBH14-0097 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:47 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:42 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3598087m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17393537m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3505626   | 60.66754 | ng    |
| 5) C15(101) #2     | 23.23 | 19644409m | 51.45126 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7515.D MM0417F.M Mon Dec 08 11:02:05 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7516.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0423\M7516.D\ECD2B.CH  
 Acq On : 07 Nov 2014 11:54 pm Operator: RR  
 Sample : M8374-P(2) Inst : INST. M  
 Misc : NBH14-0269 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:51 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:46 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3993606   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 16968250m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1036673   | 14.64330 | ng    |
| 5) C15(101) #2     | 23.23 | 5555964m  | 14.93595 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7516.D MM0417F.M Mon Dec 08 11:02:07 2014 046776CFS



Signal #1 : I:\M\DATA\SM0423\M7517.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0423\M7517.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:38 am Operator: RR  
 Sample : M8375-P(2) Inst : INST. M  
 Misc : NBH14-0273 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:52:55 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3642557m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14592652m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 2242932   | 37.37901 | ng    |
| 5) C15(101) #2     | 23.23 | 12980820m | 40.14352 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7517.D MM0417F.M Mon Dec 08 11:02:09 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7519.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0423\M7519.D\ECD2B.CH  
 Acq On : 11-8-2014 02:08:14 AM Operator: RR  
 Sample : M8376-P(2) Inst : INST. M  
 Misc : NBH14-0277 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:05 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:52:58 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3706957m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15366104m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3596245   | 60.39437 | ng    |
| 5) C15(101) #2     | 23.23 | 22002369m | 66.25266 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7519.D MM0417F.M Mon Dec 08 11:02:11 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7520.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0423\M7520.D\ECD2B.CH  
 Acq On : 11-8-2014 02:53:00 AM Operator: RR  
 Sample : M8377-P(2) Inst : INST. M  
 Misc : NBH14-0281 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:08 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:03 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3661218m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17154942m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 5620383   | 97.95464 | ng    |
| 5) C15(101) #2     | 23.23 | 29485483m | 80.92188 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7520.D MM0417F.M Mon Dec 08 11:02:13 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7522.D\ECD1A.CH Vial: 17  
 Signal #2 : I:\M\DATA\SM0423\M7522.D\ECD2B.CH  
 Acq On : 11-8-2014 04:22:30 AM Operator: RR  
 Sample : M8379-P(2) Inst : INST. M  
 Misc : NBH14-0289 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:13 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:07 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.40 | 3608786   | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 14094583m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 7664360   | 138.31840 | ng    |
| 5) C15(101) #2     | 23.23 | 43978406m | 165.29950 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7522.D MM0417F.M Mon Dec 08 11:02:15 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7523.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0423\M7523.D\ECD2B.CH  
 Acq On : 11-8-2014 05:07:03 AM Operator: RR  
 Sample : M8389-P(2) Inst : INST. M  
 Misc : NBH14-0109 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:17 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3576563m  | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15310743m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1718325   | 28.69557 | ng    |
| 5) C15(101) #2     | 23.23 | 10175501m | 29.85101 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7523.D MM0417F.M Mon Dec 08 11:02:18 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7524.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0423\M7524.D\ECD2B.CH  
 Acq On : 11-8-2014 05:51:48 AM Operator: RR  
 Sample : M8390-P(2) Inst : INST. M  
 Misc : NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:20 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3841608   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15551885m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 725274    | 10.17020 | ng    |
| 5) C15(101) #2     | 23.23 | 3485148m  | 10.47848 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7524.D MM0417F.M Mon Dec 08 11:02:19 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7525.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0423\M7525.D\ECD2B.CH  
 Acq On : 11-8-2014 06:36:25 AM Operator: RR  
 Sample : M8390MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0113 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:25 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3712111   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16394768m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 3013066m  | 52.68820  | ng    |
| 5) C15(101) #2     | 23.22 | 18779539m | 54.96945  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7525.D MM0417F.M Mon Dec 08 11:02:21 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7526.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0423\M7526.D\ECD2B.CH  
 Acq On : 11-8-2014 07:21:09 AM Operator: RR  
 Sample : M8390MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0113 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:28 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:23 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3815342   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 17197358m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 3401991m  | 58.17144  | ng    |
| 5) C15(101) #2     | 23.21 | 20543329m | 57.45931  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7526.D MM0417F.M Mon Dec 08 11:02:23 2014 046776CFS



Signal #1 : I:\M\DATA\SM0423\M7527.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0423\M7527.D\ECD2B.CH  
 Acq On : 11-8-2014 08:05:46 AM Operator: RR  
 Sample : M8391-P(2) Inst : INST. M  
 Misc : NBH14-0117 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:32 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3562613   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16022197m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 828316    | 12.93033 | ng    |
| 5) C15(101) #2     | 23.22 | 4604057m  | 13.20107 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7527.D MM0417F.M Mon Dec 08 11:02:25 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7530.D\ECD1A.CH Vial: 25  
 Signal #2 : I:\M\DATA\SM0423\M7530.D\ECD2B.CH  
 Acq On : 08 Nov 2014 10:20 am Operator: RR  
 Sample : M8396-P(2) Inst : INST. M  
 Misc : NBH14-0137 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3170879m  | 95.00000  | ng    |
| 4) I C15(96) #2    | 20.52 | 12072108m | 95.00000  | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.72 | 8941219   | 187.82907 | ng    |
| 5) C15(101) #2     | 23.23 | 52159062m | 276.61115 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7530.D MM0417F.M Mon Dec 08 11:02:28 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7533.D\ECD1A.CH Vial: 28  
 Signal #2 : I:\M\DATA\SM0423\M7533.D\ECD2B.CH  
 Acq On : 08 Nov 2014 12:34 pm Operator: RR  
 Sample : M8399-P(2) Inst : INST. M  
 Misc : NBH14-0149 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:45 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3467952   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14510531m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 3441317   | 61.84880 | ng    |
| 5) C15(101) #2     | 23.23 | 19181684m | 60.79735 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7533.D MM0417F.M Mon Dec 08 11:02:30 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7545.D\ECD1A.CH Vial: 40  
 Signal #2 : I:\M\DATA\SM0423\M7545.D\ECD2B.CH  
 Acq On : 11-8-2014 09:29:29 PM Operator: RR  
 Sample : M8378-P-D(4) Inst : INST. M  
 Misc : NBH14-0285 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:53:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:49 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 3214494   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15073272m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1130912   | 20.49383 | ng    |
| 5) C15(101) #2     | 23.23 | 5968255m  | 17.92000 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7545.D MM0417F.M Mon Dec 08 11:02:31 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7550.D\ECD1A.CH Vial: 45  
 Signal #2 : I:\M\DATA\SM0423\M7550.D\ECD2B.CH  
 Acq On : 11-9-2014 01:13:44 AM Operator: RR  
 Sample : M8395-P-D(4) Inst : INST. M  
 Misc : NBH14-0133 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:54:01 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:53:54 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2880283   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14412344m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1220233   | 25.06814 | ng    |
| 5) C15(101) #2     | 23.23 | 7066500m  | 22.06793 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7550.D MM0417F.M Mon Dec 08 11:02:33 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7553.D\ECD1A.CH Vial: 48  
 Signal #2 : I:\M\DATA\SM0423\M7553.D\ECD2B.CH  
 Acq On : 11-9-2014 03:27:49 AM Operator: RR  
 Sample : M8397-P-D(4) Inst : INST. M  
 Misc : NBH14-0141 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:54:11 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:54:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.40 | 2938973   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15072112m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 988099    | 19.50180 | ng    |
| 5) C15(101) #2     | 23.23 | 5764066m  | 17.32948 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7553.D MM0417F.M Mon Dec 08 11:02:36 2014 046776CFS

Signal #1 : I:\M\DATA\SM0423\M7554.D\ECD1A.CH Vial: 49  
 Signal #2 : I:\M\DATA\SM0423\M7554.D\ECD2B.CH  
 Acq On : 11-9-2014 04:12:40 AM Operator: RR  
 Sample : M8398-P-D(4) Inst : INST. M  
 Misc : NBH14-0145 5-128 14-0496 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 09:54:16 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:54:10 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2927377   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15898942m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 1307893   | 26.54434 | ng    |
| 5) C15(101) #2     | 23.23 | 8261449m  | 23.36577 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7554.D MM0417F.M Mon Dec 08 11:02:38 2014 046776CFS

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED, TISSUE*  
*Batch 14-0497*  
*Package DP-14-0679*

Submitted to:  
USACE/NAE  
696 Virginia Road  
Concord, MA 01742 USA

Submitted by:  
Battelle Norwell Operations  
141 Longwater Drive Suite 202  
Norwell, MA 02061


**Battelle**  
*The Business of Innovation*





**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
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141 Longwater Drive Suite 202  
Norwell, MA 02061






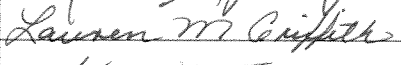

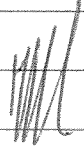



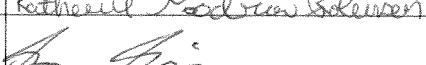
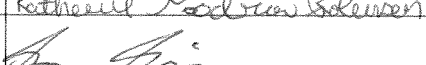

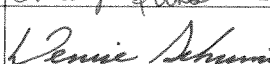













Analyst Approval:  Rich Restucci  
2014.11.25 10:52:43 -05'00'

QC Chemist Approval:  Carla Devine  
2014.12.10 13:41:52 -05'00'

Project Manager Approval:  Carole McCarthy  
2014.12.11 07:38:59 -05'00'

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## 2014 Signature Page

| Name (print)               | Name (signature)   | Initials   |
|----------------------------|--|--|
| Matt Schumitz              |     | MNS  |
| Ellyn M Webb               |     | EMW  |
| Carla Devine               |     | CRD  |
| Roxanne M. Brackett        |    | RMB  |
| Robert Lizotte, Jr.        |     | BL   |
| Lauren M Griffith          |     | LMG  |
| Kevin M. McInerney         |    | KMC   |
| <del>Michael McGee</del>   |     |  |
| Rich Restucci              |     | RR   |
| Stephanie Hart             |     | SAH  |
| Kerry Davis                |    | KPD  |
| Katherine Goodrow Robinson |  | KGR  |
| Sam Guimaraes              |   | SAG  |
| Emily Fraser               |   | EF   |
| Denise Schumitz            |   | DAS  |
| Jonathan Thorn             |   | JRT  |
| Christie Usher             |   | CU   |
| Caitlyn Farragher          |   | CNF  |
| Mart J. Benotti            |   |     |
| William H Brown            |   | WB  |
| Dawn Trapp                 |   | DBT  |
| Carolee Lynn McLaney       |   | CSLM   |
| Weidong Li                 |   | W.L  |
| Jeannine Seyfert           |   | JS   |
| FRANCO PALA                |   | FP   |

**USACE/NAE - New Bedford Harbor LTM Study**  
**Project No 100053747**  
**Pesticide / PCB by GC/ECD**  
*SED, TISSUE*  
*Batch 14-0497*  
*Package DP-14-0679*

|          |   |     |
|----------|---|-----|
| <b>1</b> | <b><i>Work Plan</i></b><br>Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.  | 1   |
| <b>2</b> | <b><i>Tables</i></b><br>Analytical Data Tables, Qualifier Definitions.  | 23  |
| <b>3</b> | <b><i>Miscellaneous Documentation</i></b><br>Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.                      | 39  |
| <b>4</b> | <b><i>Sample Preparation Records</i></b><br>Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.  | 50  |
| <b>5</b> | <b><i>Analytical Calibrations</i></b><br>Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check. | 73  |
| <b>6</b> | <b><i>Analytical Data</i></b><br>Raw Data Quantification Reports.   | 122 |
| <b>7</b> | <b><i>Chromatograms</i></b><br>Sample And Standard Chromatograms.   | N/A |
| <b>8</b> | <b><i>Unused Data</i></b>   | N/A |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 1.0 GENERAL PROJECT INFORMATION

**Project Title:** USACE-NAE New Bedford Harbor LTM MDL Study  
**Project Number:** 100053747  
**Client:** USACE/NAE  
696 Virginia Road  
Concord, MA 01742  
USA  
**Client Contact Information:** Peter Hugh  
Engineering Technical Lead  
(978) 318-8452(V)  
NA  
NA  
**Effective Date of QAPP:** 10/9/2014  
**Version Number:** 100053747(S)-02  
**Project Manager:** Peven-McCarthy, Carole  
**Laboratory Task Manager:** Peven-McCarthy, Carole  
**Deliverable Due Date:** 11/3/2014

### 2.0 SCOPE OF WORK

**Overview:** A project-specific MDL study is required for this project.  
**Matrix:** Soil/Sediment

### 2.1 TECHNICAL APPROACH

#### 2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

**Storage Directions:** Store frozen.  
**Sub\_Sampling:** None  
**Procedures:** NA  
**Contact:** NA  
**Comment:** NA  
**Archiving:** NA  
**Disposal:** NA

## WORK/QUALITY ASSURANCE PROJECT PLAN

### 2.1.2 Sample Preparation

NA

| Samples Expected: | Samples Per Batch: | Batches Expected: |
|-------------------|--------------------|-------------------|
|                   | 20                 |                   |

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

**Table 1: Quality Control Samples**

| Type: | Description:                      | Count:      | Rgt: | Reference:  | Comment: |
|-------|-----------------------------------|-------------|------|---|----------|
| PB    | Laboratory control reagent blank. | 1 per batch | --   | NA  |          |
| LCS   | Laboratory Control Sample         | 1 per batch | No   | NA  |          |
| MDL   | Method Detection Limits           | 8 per batch | Yes  | 140304-02: Mud Dump<br>Reference N4415<br>Lot:N4415 |          |

### 2.1.3 Extraction/Preparation

#### 2.1.3.1 Extraction

|                           |  |
|---------------------------|--|
| SOP No.-Rev:              | <b>5-192-14</b>  |
| SOP Title:                | <i>Soil/Sediment Extraction for Trace Level Semi-Volatile Organic Contaminant Analysis</i> |
| Sample Size:              | 10 g   |
| SIS and LCS/MS Compounds: | Defined in Table 2.  |
| Deviations:               | NA   |
| Comments:                 | NA   |

**Table 2: SIS and LCS/MS Spiking Level**

| Standard Type       | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment     |
|---------------------|-------------------|-------------------|-------------|-------------|
| PCB Surrogate       | ID59 SIS          | ~ 100 ng          | 100 uL      | NA          |
| ECD LCS/MS Solution | HX10 LCS/MS       | ~ 38 - 150 ng     | 75 uL       | LCS         |
| PDL spike ECD       | ID73 LCS/MS       | ~ 7.5 - 30.0 ng   | 150 uL      | MDL samples |

#### 2.1.3.2 Cleanup

## WORK/QUALITY ASSURANCE PROJECT PLAN

- |    |              |   |
|----|--------------|---|
| 1) | SOP No.-Rev: | <b>5-328-04</b>   |
|    | SOP Title:   | <i>Removal (cleanup) of Sulfur from Environmental Sample Extracts</i> |
|    | Deviations:  | NA  |
|    | Comments:    | NA  |
| 2) | SOP No.-Rev: | <b>5-327-04</b>   |
|    | SOP Title:   | <i>Florisil Cleanup of Environmental Sample Extracts</i>              |
|    | Deviations:  | Elute with Hexane only  |
|    | Comments:    | NA  |

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

**Table 3: RIS Spiking Level**

| Standard Type | Standard Contents | Spike Amount (ng) | Volume (uL) | Comment |
|---------------|-------------------|-------------------|-------------|---------|
| PCB IS        | IE11 RIS          | ~ 100 ng          | 100 uL      | NA      |

### 2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- |    |             |   |
|----|-------------|---|
| 1) | SOP_No-Rev: | <b>5-128-13</b>   |
|    | SOP_Title:  | <i>Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection</i> |
|    | Deviations: | NA  |
|    | Comments:   | Report SIS corrected data   |

### 2.2. DELIVERABLES

|                          |            |
|--------------------------|------------|
| <b>Deliverables Due:</b> | 11/3/2014  |
| <b>LIMS Reports:</b>     | <i>Yes</i> |
| <b>Histograms:</b>       | <i>No</i>  |
| <b>Excel Tables:</b>     | <i>Yes</i> |
| <b>EICs:</b>             | <i>No</i>  |
| <b>Chromatograms:</b>    | <i>No</i>  |

## WORK/QUALITY ASSURANCE PROJECT PLAN

**EDDs:** *Yes*

**Comments:**

Required 30 day TAT.

EDD required.

Full data package (pdf) required for external validation.

Detailed quant reports are not required.

### 3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

### 4.0 ORGANIZATION AND COMMUNICATION

#### 4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

**Table 4: Project Team and Roles**

| Staff Member             | Role                    | Comment |
|--------------------------|-------------------------|---------|
| Carole S. Peven-McCarthy | Project Manager         | NA      |
| Samuel A. Guimaraes      | Sample Preparation      | NA      |
| Richard P. Restucci Jr   | GC/ECD Analysis         | NA      |
| Matt D. Schumitz         | Sample Custody          | NA      |
| Carla R. Devine          | Quality Control Officer | NA      |

#### 4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

### 5.0 SCHEDULE

The project schedule is presented in Table 5.

**Table 5. Schedule of Laboratory Activities**

| Activity:           | Start Date: | End Date:  | TAT (days): | Comment: |
|---------------------|-------------|------------|-------------|----------|
| Sample Receipt      | 10/03/2014  | NA         | 0           | NA       |
| Sample Preparation  | 10/06/2014  | 10/09/2014 | 3           | NA       |
| Instrument Analysis | 10/09/2014  | 10/24/2014 | 15          | NA       |

## WORK/QUALITY ASSURANCE PROJECT PLAN

| Activity:              | Start Date: | End Date:  | TAT<br>(days): | Comment: |
|------------------------|-------------|------------|----------------|----------|
| Quality Control Review | 10/27/2014  | 10/29/2014 | 2              | NA       |
| Final Data Reporting   | 10/29/2014  | 10/31/2014 | 2              | NA       |

### 6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

**Table 6. Labor Budget (Laboratory Analytical Task)**

| Labor Activity:        | Hours/<br>Batch: | Batches: | Total<br>Hours: | Comment: |
|------------------------|------------------|----------|-----------------|----------|
| Sample Receipt         | 1                | 1        | 1               | NA       |
| Sample Preparation     | 24               | 1        | 24              | NA       |
| <i>Extraction</i>      | 20               |          |                 |          |
| <i>glassware</i>       | 4                |          |                 |          |
| Instrument Analysis    | 16               | 1        | 16              | NA       |
| <i>GC/ECD</i>          | 16               |          |                 |          |
| Quality Control Review | 3                | 1        | 3               | NA       |
| Final Data Reporting   | 1                | 1        | 1               | NA       |

### 7.0 STAFF DEVELOPMENT



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**Attachment 1: Target Samples**

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

|                                |  |
|--------------------------------|--|
| <b>Project Test Code Name:</b> | Master_128   |
| <b>SOP Reference:</b>          | 5-128 - Identification and Quantification of Polychlorinated Biphenyls (By Congener and Aroclor) and Chlorinated Pesticides by Gas Chromatography/Electron Capture Detection |
| <b>Description:</b>            | Pesticide / PCB by GC/ECD  |
| <b>Matrix:</b>                 | S - Solid Samples, like soil or sediment, prepared and analyzed under the same class of detection limits.  |
| <b>Detection Limit Study:</b>  | 5-128-2013-ssMDL-SF  |
| <b>Instrument:</b>             | ECD  |
| <b>MQO Criteria</b>            | USACE/NBH LTMP   |
| <b>Standard Report:</b>        | Standard Result Report   |

| Method Specific Reporting    |            | Holding Times (days)        |                    | Data Flags                           |
|------------------------------|------------|-----------------------------|--------------------|--------------------------------------|
| <b>Result Units:</b>         | ng/g       | <b>Unit Conversion:</b>     | (none)             | <b>Sample:</b> 14 <b>DL_Flag:</b> U  |
| <b>Weight Basis:</b>         | DRY        | <b>Result Format:</b>       | Significant Figure | <b>Frozen:</b> 365 <b>RL_Flag:</b> J |
| <b>Standard Basis:</b>       | SIS        | <b># of Figures/Digits:</b> | 3                  | <b>Extract:</b> 40 <b>PB_Flag:</b> B |
| <b>Oil Weight Basis:</b>     | No         | <b>Oil Weight Source:</b>   | Oil Weight         | <b>DIL_Flag:</b> D                   |
| <b>U-Value Substitution:</b> | U-Flag=NED | <b>Histograms:</b>          | No                 | <b>HT_Flag:</b> T                    |
| <b>ECD_Reporting:</b>        | Yes        |                             |                    |                                      |
| <b>ECD_Result:</b>           | Higher     | <b>ECD_Flag</b>             | p                  |                                      |
| <b>RPD_Limit (&lt;%):</b>    | 40         | <b>ECD_Manual_Flag:</b>     | m                  |                                      |

| No: | Analyte: | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|----------|--------------|------|----------|----------|---------|--------|
| 1   | Cl2(8)   | Cl2(8)       | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 2   | Cl3(18)  | Cl3(18)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 3   | Cl3(28)  | Cl3(28)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 4   | Cl4(44)  | Cl4(44)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 5   | Cl4(52)  | Cl4(52)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 6   | Cl4(66)  | Cl4(66)      | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 7   | Cl5(101) | Cl5(101)     | T    | Cl5(96)  | Cl3(34)  | No      | No     |
| 8   | Cl5(105) | Cl5(105)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 9   | Cl5(118) | Cl5(118)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 10  | Cl6(128) | Cl6(128)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 11  | Cl6(138) | Cl6(138)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 12  | Cl6(153) | Cl6(153)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 13  | Cl7(170) | Cl7(170)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 14  | Cl7(180) | Cl7(180)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 15  | Cl7(187) | Cl7(187)     | T    | Cl6(161) | Cl6(152) | No      | No     |
| 16  | Cl8(195) | Cl8(195)     | T    | Cl6(161) | Cl6(152) | No      | No     |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

| No: | Analyte:  | Report Name: | Type | RIS      | SIS      | Hidden: | Graph: |
|-----|-----------|--------------|------|----------|----------|---------|--------|
| 17  | CI9(206)  | CI9(206)     | T    | CI6(161) | CI6(152) | No      | No     |
| 18  | CI10(209) | CI10(209)    | T    | CI6(161) | CI6(152) | No      | No     |
| 1   | CI3(34)   | CI3(34)      | SIS  | CI5(96)  |          | No      | No     |
| 2   | CI6(152)  | CI6(152)     | SIS  | CI6(161) |          | No      | No     |

**Total Analytes:** 20

**Subtract Peaks:**

None

**Sum Peaks:**

None

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## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 2: Test Codes

**Project Test Code Name:** Master\_128

**ICAL Acceptance Criteria:**

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

**Continuing Calibration Verification Criteria:**

**CCV Name:** 5-128

| Frequency Hrs: | Mean PD(%): | Individual PD(%): | RIS/SIS RT Window (min): | Area Limit Low(%): | Area Limit High(%): | Comment: |
|----------------|-------------|-------------------|--------------------------|--------------------|---------------------|----------|
| 24 (N)         | 15 (N)      | 20 (N)            | 0.25 (N)                 | -50                | 100 (N)             | NA       |

**Independent Calibration Verification:**

**ICC Name:** 5-128

| Mean PD Limit(%): | Ind. PD Limit(%): | RIS/SIS Window Limit (Secs): | Area Limit High(%): | Area Limit Low(%): | Comment: |
|-------------------|-------------------|------------------------------|---------------------|--------------------|----------|
| 20 (N)            | 20 (N)            | 0.25 (N)                     | -50                 | 100 (N)            | NA       |

**Mass Discrimination Criteria:**

None

**Degradation Check Criteria:**

**Degradation Check Name:** 5-128

| DDT Breakdown Limit (%): | Endrin Breakdown Limit(%): | Total Breakdown Limit(%): | Comment: |
|--------------------------|----------------------------|---------------------------|----------|
| 20 (N)                   | 20 (N)                     | 20 (N)                    |          |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |  | <b>USACE/NBH LTMP</b> |  |
|--|--|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>   | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Procedural Blank                       | Samples must be greater than five times the blank concentration (>5xPB).   | B                     | Review with Project Manager; re-analyze or justify results in project records.               |
| PB Measurement Quality Objective       | Organic results in the Procedural Blank are less than the ssRL (<ssRL)   | N                     |  |
| Laboratory Control Sample              | Recovery values 70-130%.   | N                     | Review with project manager; re-analyze or justify reporting the results in project records. |
| Matrix Spike Recovery                  | Organics 70-130%. Analyte concentration in MS must be >5 times reported background concentration.<br>Organics Results in the Target is less than 5 times the Original  | N<br>n                | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Matrix Spike/Spike Duplicate Precision | Organics results less than 30% Relative Percent Difference (RPD). Spike must be >5x background concentration.<br>Organics Results in the Target is less than 5 times the Original  | N<br>n                | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Standard Reference Material Accuracy   | Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL).<br>Organics Results in the Target is less than 5 times the MDL | N<br>n                | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Analytical Duplicate Precision         | Organics results less than 30% Relative Percent Difference (RPD). Concentration must be >10X the MDL.<br>Organics Results in the Original is less than 10 times the MDL  | N<br>n                | Review with Project Manager; re-analyze or justify reporting results in the project records. |
| Analytical Triplicate Precision        | Organics results less than 30% Relative Standard Deviation (RSD). Concentration must be >10X the MDL.<br>Organics Results in the Original is less than 10 times the MDL  | N<br>n                | Review with Project Manager; re-analyze or justify reporting results in the project records. |

## WORK/QUALITY ASSURANCE PROJECT PLAN

### Attachment 3: Method Quality Objectives

| <b>MQO Application</b>                 |   | <b>USACE/NBH LTMP</b> |  |
|--|---|-----------------------|--|
| <b>MQO:</b>                            | <b>Acceptance Criteria</b>  | <b>Qual:</b>          | <b>Corrective Action:</b>  |
| Surrogate Compound Recovery            | Recovery results between 40% and 120%.  | N                     | Review with Project Manager; re-analyze or justify reporting results in the project records.   |
| Control Oil                            | RPD < 30% for at least 90% of analytes  | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Instrument Calibration                 | 5-128-13: R-squared greater than or equal to 0.995<br>Mean RSD less than or equal to 15%,<br>Individual RSD less than or equal to 25% | N                     | Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented. |
| Independent Calibration Check Solution | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 20%.                              | N                     | Review with Project Manager; re-analyze or justify in project records.   |
| Continuing Calibration Verification    | 5-128-13: Individual PD less than or equal to 20%.<br>Mean Percent Difference less than or equal to 15%.                              | N                     |  |

## Sample Receipt Form

Approved:  Authorized: 

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AMNo. of Shipping Containers: 1

### SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NACOC Forms:  Shipped with samples  No Forms

### Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler |              | None | Intact         | Intact              | 1.0    | 23   |

### Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)Temperature upon receipt (°C): 1 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*Samples Acidified:  Yes  No  UnknownInitial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnownStorage Location: Custody: Freezer - F0117 (NA) BDO IDs Assigned: M8152 - M8174Samples logged in by: Schumitz, Matt Date/Time: 09/26/2014 12:00 AM

Approved By: \_\_\_\_\_ Approved On: \_\_\_\_\_

Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_

Received by: Schumitz, Matt Date/Time Received: Friday, September 26, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8152   | NBH14-0001        | 09/22/14 15:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8153   | NBH14-0005        | 09/22/14 14:24   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8154   | NBH14-0009        | 09/22/14 11:16   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8155   | NBH14-0013        | 09/22/14 12:08   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8156   | NBH14-0017        | 09/22/14 8:13    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8157   | NBH14-0021        | 09/22/14 11:38   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8158   | NBH14-0025        | 09/22/14 9:37    | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8159   | NBH14-0029        | 09/22/14 10:40   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8160   | NBH14-0033        | 09/22/14 15:25   | 09/26/14 14:08 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8161   | NBH14-0037        | 09/22/14 14:03   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8162   | NBH14-0041        | 09/22/14 13:06   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8163   | NBH14-0045        | 09/23/14 15:43   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8164   | NBH14-0049        | 09/23/14 14:57   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8165   | NBH14-0053        | 09/23/14 13:53   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8166   | NBH14-0061        | 09/23/14 10:12   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8167   | NBH14-0065        | 09/23/14 9:09    | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8168   | NBH14-0073        | 09/23/14 14:27   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8169   | NBH14-0077        | 09/23/14 13:39   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8170   | NBH14-0081        | 09/23/14 12:26   | 09/26/14 14:09 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8171   | NBH14-0085        | 09/23/14 11:29   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8172   | NBH14-0089        | 09/23/14 10:32   | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8173   | NBH14-0093        | 09/23/14 9:53    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |
| M8174   | NBH14-0097        | 09/23/14 8:57    | 09/26/14 14:10 | 1     | SED     | 1     | NA  | NA   | NA   | F0117 (NA) | BIN  | 60  |           |

Total Samples: 23





The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-1068

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/22/2014 | 15:24 | NBH14-0001 | M8152     | SED    | 120-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:24 | NBH14-0005 | M8153     | SED    | 125-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:16 | NBH14-0009 | M8154     | SED    | 130-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 12:08 | NBH14-0013 | M8155     | SED    | 134-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 8:13  | NBH14-0017 | M8156     | SED    | 150-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 11:38 | NBH14-0021 | M8157     | SED    | 253-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 9:37  | NBH14-0025 | M8158     | SED    | 216-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 10:40 | NBH14-0029 | M8159     | SED    | 220-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 15:25 | NBH14-0033 | M8160     | SED    | 235-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 14:03 | NBH14-0037 | M8161     | SED    | 240-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/22/2014 | 13:06 | NBH14-0041 | M8162     | SED    | 245-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 15:43 | NBH14-0045 | M8163     | SED    | 146-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:57 | NBH14-0049 | M8164     | SED    | 140-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:53 | NBH14-0053 | M8165     | SED    | 202-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 10:12 | NBH14-0061 | M8166     | SED    | 147-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:09  | NBH14-0065 | M8167     | SED    | 135-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 14:27 | NBH14-0073 | M8168     | SED    | 333-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 13:39 | NBH14-0077 | M8169     | SED    | 339-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 12:26 | NBH14-0081 | M8170     | SED    | 346-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 11:29 | NBH14-0085 | M8171     | SED    | 340-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*J M Joz* 9/26/14 9:15

Received By(name/date/time):

*MW* 9/26/14 9:15



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

E-1069

### Analyses (Record No. of containers / Preservative)

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/23/2014 | 10:32 | NBH14-0089 | M8172     | SED    | 341-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 9:53  | NBH14-0093 | M8173     | SED    | 334-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/23/2014 | 8:57  | NBH14-0097 | M8174     | SED    | 335-14LTM | 1  | X    |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |
|           |       |            |           |        |           |  |      |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

Sam Jones 9/26/14 9:15

Received By(name/date/time):

MJ 9/26/14

# Sample Receipt Form

Approved:  Authorized

Project Number: 100043429 Client: USACE  
Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM  
No. of Shipping Containers: 1

## SHIPMENT

Method of Delivery: Hand Delivered Tracking Number: NA  
COC Forms:  Shipped with samples  No Forms

## Cooler(s)/Box(es)

| Cntr   | Type   | Tracking No. | Seal          | Seal Condition | Container Condition | Temp C | Smps |
|--------|--------|--------------|---------------|----------------|---------------------|--------|------|
| 1 of 1 | Cooler | NA           | Custody Seals | Intact         | Intact              | 1.2    | 60   |

## Samples

Sample Labels:  Sample labels agree with COC forms  
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals:  Tape  Custody Seals  Other Seals (See sample Log)  
 Seals intact for each shipping container  
 Seals broken (See sample log for impacted samples)

Condition of Samples:  Sample containers intact  
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.2 Temperature Blank used  Yes  No  
*(Note: If temperature upon receipt differs from required conditions, see sample log comment field)*

Samples Acidified:  Yes  No  Unknown

Initial pH 5-9?:  Yes  No  NA  
*If no, individual sample adjustments on the Auxiliary Sample Receipt Form*

Total Residual Chlorine Present?:  Yes  No  NA  
*If yes, individual sample adjustments on the Auxiliary Sample Receipt Form*

Head Space <1% in samples for water VOC analysis:  Yes  No  NA  
*Individual sample deviations noted on sample log*

Samples Containers:  
Samples returned in PC-grade jars:  Yes  No  Unknown /Lot No.: UnKnown

Storage Location: Custody: Freezer - F0113 (NA) BDO IDs Assigned: M8347 - M8406  
Samples logged in by: Schumitz, Matt Date/Time: 10/01/2014 12:00 AM  
Approved By: Devine, Carla Approved On: 12/5/2014 9:32:00 AM  
Authorized By: \_\_\_\_\_ Authorized On: \_\_\_\_\_

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8347   | NBH14-0057        | 09/30/14 10:09   | 10/02/14 10:08 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8348   | NBH14-0069        | 09/30/14 10:25   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8349   | NBH14-0181        | 09/26/14 8:36    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8350   | NBH14-0185        | 09/26/14 9:50    | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8351   | NBH14-0189        | 09/26/14 11:00   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8352   | NBH14-0193        | 09/26/14 12:49   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8353   | NBH14-0197        | 09/26/14 13:38   | 10/02/14 10:09 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8354   | NBH14-0199        | 09/26/14 14:24   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8355   | NBH14-0203        | 09/26/14 15:17   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8356   | NBH14-0207        | 09/26/14 14:32   | 10/02/14 10:10 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8357   | NBH14-0211        | 09/26/14 13:36   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8358   | NBH14-0215        | 09/26/14 8:21    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8359   | NBH14-0219        | 09/26/14 8:50    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8360   | NBH14-0220        | 09/26/14 9:24    | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8361   | NBH14-0224        | 09/26/14 10:54   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8362   | NBH14-0228        | 09/26/14 11:50   | 10/02/14 10:11 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8363   | NBH14-0232        | 09/25/14 14:16   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8364   | NBH14-0233        | 09/26/14 8:56    | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8365   | NBH14-0234        | 09/24/14 14:40   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8366   | NBH14-0237        | 09/29/14 15:14   | 10/02/14 10:12 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8367   | NBH14-0241        | 09/29/14 15:54   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8368   | NBH14-0245        | 09/29/14 8:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8369   | NBH14-0249        | 09/29/14 9:06    | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8370   | NBH14-0253        | 09/29/14 10:01   | 10/02/14 10:13 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8371   | NBH14-0257        | 09/29/14 12:47   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8372   | NBH14-0261        | 09/29/14 14:39   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8373   | NBH14-0265        | 09/29/14 15:26   | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8374   | NBH14-0269        | 09/29/14 8:13    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8375   | NBH14-0273        | 09/29/14 9:08    | 10/02/14 10:14 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8376   | NBH14-0277        | 09/29/14 9:52    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8377   | NBH14-0281        | 09/29/14 10:45   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8378   | NBH14-0285        | 09/29/14 11:15   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8379   | NBH14-0289        | 09/29/14 12:27   | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8380   | NBH14-0302        | 09/30/14 8:00    | 10/02/14 10:15 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8381   | NBH14-0306        | 09/30/14 9:02    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8382   | NBH14-0310        | 09/30/14 9:59    | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8383   | NBH14-0314        | 09/30/14 11:47   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8384   | NBH14-0318        | 09/30/14 12:41   | 10/02/14 10:16 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8385   | NBH14-0322        | 09/30/14 13:44   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8386   | NBH14-0326        | 09/30/14 14:36   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8387   | NBH14-0101        | 09/24/14 10:17   | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8388   | NBH14-0105        | 09/24/14 9:18    | 10/02/14 10:17 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8389   | NBH14-0109        | 09/24/14 10:56   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8390   | NBH14-0113        | 09/24/14 12:10   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8391   | NBH14-0117        | 09/24/14 13:15   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8392   | NBH14-0121        | 09/24/14 14:24   | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8393   | NBH14-0125        | 09/25/14 8:15    | 10/02/14 10:18 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8394   | NBH14-0129        | 09/25/14 9:49    | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8395   | NBH14-0133        | 09/25/14 11:00   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8396   | NBH14-0137        | 09/25/14 11:32   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8397   | NBH14-0141        | 09/25/14 12:58   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8398   | NBH14-0145        | 09/25/14 14:03   | 10/02/14 10:19 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8399   | NBH14-0149        | 09/25/14 14:56   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8400   | NBH14-0153        | 09/25/14 8:19    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8401   | NBH14-0157        | 09/25/14 9:06    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8402   | NBH14-0161        | 09/25/14 9:55    | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

## Sample Receipt Form Details

Approved:  Authorized

Project Number: 100043429 Client: USACE

Received by: Schumitz, Matt Date/Time Received: Wednesday, October 01, 2014 12:00 AM

No. of Shipping Containers: 1

| BDO Id: | Client Sample ID: | Collection Date: | Login Date:    | Ctrs: | Matrix: | Temp: | pH: | TRC: | VOC: | Stored In: | Loc: | No: | Comments: |
|---------|-------------------|------------------|----------------|-------|---------|-------|-----|------|------|------------|------|-----|-----------|
| M8403   | NBH14-0165        | 09/25/14 12:58   | 10/02/14 10:20 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8404   | NBH14-0169        | 09/25/14 14:11   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8405   | NBH14-0173        | 09/25/14 15:14   | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |
| M8406   | NBH14-0177        | 09/26/14 7:39    | 10/02/14 10:21 | 1     | SED     | 1.2   | NA  | NA   | NA   | F0117 (NA) | BIN  | 32  |           |

Total Samples: 60



The Business of Innovation

# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/30/2014 | 10:09 | NBH14-0057 | M0347     | SED    | 151-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 10:25 | NBH14-0069 | " " 48    | SED    | 155-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:36  | NBH14-0181 | 49        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:50  | NBH14-0185 | 50        | SED    | 241-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:00 | NBH14-0189 | 51        | SED    | 237-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 12:49 | NBH14-0193 | 52        | SED    | 236-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:38 | NBH14-0197 | 53        | SED    | 231-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:24 | NBH14-0199 | 54        | SED    | 230-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 15:17 | NBH14-0203 | 55        | SED    | 117-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 14:32 | NBH14-0207 | 56        | SED    | 114-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 13:36 | NBH14-0211 | 57        | SED    | 111-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:21  | NBH14-0215 | 58        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:50  | NBH14-0219 | 59        | SED    | 152-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 9:24  | NBH14-0220 | 60        | SED    | 138-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 10:54 | NBH14-0224 | 61        | SED    | 126-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 11:50 | NBH14-0228 | 62        | SED    | 108-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:16 | NBH14-0232 | 63        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 8:56  | NBH14-0233 | 64        | SED    | 242-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:40 | NBH14-0234 | 65        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:14 | NBH14-0237 | 66        | SED    | 222-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew R. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700



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# Chain of Custody

Project Manager: Jessica Tenzar  
Phone: (781) 681-5532

Ship to:  
Battelle  
141 Longwater Drive, Suite 202  
Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/29/2014 | 15:54 | NBH14-0241 | M8367     | SED    | 224-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:06  | NBH14-0245 | 68        | SED    | 128-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:06  | NBH14-0249 | 69        | SED    | 123-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:01 | NBH14-0253 | 70        | SED    | 121-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:47 | NBH14-0257 | 71        | SED    | 218-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 14:39 | NBH14-0261 | 72        | SED    | 208-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 15:26 | NBH14-0265 | 73        | SED    | 207-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 8:13  | NBH14-0269 | 74        | SED    | 332-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:08  | NBH14-0273 | 75        | SED    | 338-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 9:52  | NBH14-0277 | 76        | SED    | 331-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 10:45 | NBH14-0281 | 77        | SED    | 323-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 11:15 | NBH14-0285 | 78        | SED    | 324-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/29/2014 | 12:27 | NBH14-0289 | 79        | SED    | 325-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 8:00  | NBH14-0302 | 80        | SED    | 225-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2104 | 9:02  | NBH14-0306 | 81        | SED    | 226-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 9:59  | NBH14-0310 | 82        | SED    | 227-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 11:47 | NBH14-0314 | 83        | SED    | 217-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 12:41 | NBH14-0318 | 84        | SED    | 212-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 13:44 | NBH14-0322 | 85        | SED    | 211-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/30/2014 | 14:36 | NBH14-0326 | 86        | SED    | 204-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700





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# Chain of Custody

Project Manager: Jessica Tenzar  
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Norwell, MA 02061

Samplers Signature: PSD & MRF

Site Contact: Matt Fitzpatrick  
Mobile: (781)733-6797

| Date      | Time  | Field ID   | Lab ID(s) | Matrix | station   | Analyses (Record No. of containers / Preservative) |      |     |      |            |      |                             |                                |
|-----------|-------|------------|-----------|--------|-----------|--|------|-----|------|------------|------|-----------------------------|--------------------------------|
|           |       |            |           |        |           | PCB  | 4° C | TOC | 4° C | Grain Size | 4° C | Benthic Infauna enumeration | Room Temperature, 10% formalin |
| 9/24/2014 | 10:17 | NBH14-0101 | M8387     | SED    | 349-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 9:18  | NBH14-0105 | " " 88    | SED    | 352-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 10:56 | NBH14-0109 | 89        | SED    | 345-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 12:10 | NBH14-0113 | 90        | SED    | 318-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 13:15 | NBH14-0117 | 91        | SED    | 311-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/24/2014 | 14:24 | NBH14-0121 | 92        | SED    | 306-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:15  | NBH14-0125 | 93        | SED    | 221-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:49  | NBH14-0129 | 94        | SED    | 249-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:00 | NBH14-0133 | 95        | SED    | 317-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 11:32 | NBH14-0137 | 96        | SED    | 309-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0141 | 97        | SED    | 310-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:03 | NBH14-0145 | 98        | SED    | 304-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:56 | NBH14-0149 | 99        | SED    | 250-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 8:19  | NBH14-0153 | M8400     | SED    | 105-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:06  | NBH14-0157 | " " 01    | SED    | 109-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 9:55  | NBH14-0161 | 02        | SED    | 115-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 12:58 | NBH14-0165 | 03        | SED    | 154-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 14:11 | NBH14-0169 | 04        | SED    | 139-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/25/2014 | 15:14 | NBH14-0173 | 05        | SED    | 131-14LTM | 1  | X    |     |      |            |      |                             |                                |
| 9/26/2014 | 7:39  | NBH14-0177 | 06        | SED    | 247-14LTM | 1  | X    |     |      |            |      |                             |                                |

Relinquished By (name/date/time):

*Matthew K. [Signature]* 10/1/14 1700

Received By(name/date/time):

*[Signature]* 10-1-14 1700

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Procedural Blank | Procedural Blank |
|------------------------------|------------------|------------------|
| <b>Battelle ID</b>           | CD588PB-P        | CD809PB-P        |
| <b>Sample Type</b>           | PB               | PB               |
| <b>Collection Date</b>       | 11/03/2014       | 11/03/2014       |
| <b>Extraction Date</b>       | 11/03/2014       | 11/03/2014       |
| <b>Analysis Date</b>         | 11/14/2014       | 11/15/2014       |
| <b>Analytical Instrument</b> | ECD              | ECD              |
| <b>% Moisture</b>            | 1.71             | 1.61             |
| <b>% Lipid</b>               | NA               | NA               |
| <b>Matrix</b>                | SEDIMENT         | SEDIMENT         |
| <b>Sample Size</b>           | 9.89             | 9.79             |
| <b>Size Unit-Basis</b>       | G_DRY            | G_DRY            |
| <b>Units</b>                 | NG/G_DRY         | NG/G_DRY         |

|           |         |         |
|-----------|---------|---------|
| Cl2(8)    | 0.243 U | 0.245 U |
| Cl3(18)   | 0.244 U | 0.246 U |
| Cl3(28)   | 0.244 U | 0.246 U |
| Cl4(44)   | 0.244 U | 0.246 U |
| Cl4(52)   | 0.243 U | 0.245 U |
| Cl4(66)   | 0.243 U | 0.245 U |
| Cl5(101)  | 0.243 U | 0.245 U |
| Cl5(105)  | 0.244 U | 0.246 U |
| Cl5(118)  | 0.244 U | 0.246 U |
| Cl6(128)  | 0.244 U | 0.246 U |
| Cl6(138)  | 0.244 U | 0.246 U |
| Cl6(153)  | 0.244 U | 0.246 U |
| Cl7(170)  | 0.244 U | 0.246 U |
| Cl7(180)  | 0.244 U | 0.246 U |
| Cl7(187)  | 0.244 U | 0.246 U |
| Cl8(195)  | 0.244 U | 0.246 U |
| Cl9(206)  | 0.243 U | 0.245 U |
| Cl10(209) | 0.244 U | 0.246 U |

### Surrogate Recoveries (%)

|          |     |     |
|----------|-----|-----|
| Cl3(34)  | 100 | 101 |
| Cl6(152) | 112 | 97  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                       | Laboratroy Control Sample |        |       |      | Laboratory Control Sample |        |       |      |
|---------------------------------|---------------------------|--------|-------|------|---------------------------|--------|-------|------|
| <b>Battelle ID</b>              | CD589LCS-P                |        |       |      | CD810LCS-P                |        |       |      |
| <b>Sample Type</b>              | LCS                       |        |       |      | LCS                       |        |       |      |
| <b>Collection Date</b>          | 11/03/2014                |        |       |      | 11/03/2014                |        |       |      |
| <b>Extraction Date</b>          | 11/03/2014                |        |       |      | 11/03/2014                |        |       |      |
| <b>Analysis Date</b>            | 11/14/2014                |        |       |      | 11/15/2014                |        |       |      |
| <b>Analytical Instrument</b>    | ECD                       |        |       |      | ECD                       |        |       |      |
| <b>% Moisture</b>               | 1.71                      |        |       |      | 1.61                      |        |       |      |
| <b>% Lipid</b>                  | NA                        |        |       |      | NA                        |        |       |      |
| <b>Matrix</b>                   | SEDIMENT                  |        |       |      | SEDIMENT                  |        |       |      |
| <b>Sample Size</b>              | 9.78                      |        |       |      | 9.85                      |        |       |      |
| <b>Size Unit-Basis</b>          | G_DRY                     |        |       |      | G_DRY                     |        |       |      |
| Units                           | NG/G_DRY                  | Target | % REC | Qual | NG/G_DRY                  | Target | % REC | Qual |
| CI2(8)                          | 3.27                      | 3.83   | 85    |      | 2.89                      | 3.81   | 76    |      |
| CI3(18)                         | 3.28                      | 3.83   | 86    |      | 2.75                      | 3.81   | 72    |      |
| CI3(28)                         | 3.39                      | 3.83   | 89    |      | 2.92                      | 3.81   | 77    |      |
| CI4(44)                         | 3.57                      | 3.83   | 93    |      | 2.79                      | 3.81   | 73    |      |
| CI4(52)                         | 3.44                      | 3.83   | 90    |      | 3.10                      | 3.81   | 81    |      |
| CI4(66)                         | 3.58                      | 3.83   | 93    |      | 3.18                      | 3.81   | 83    |      |
| CI5(101)                        | 3.89                      | 3.83   | 102   |      | 3.71                      | 3.81   | 97    |      |
| CI5(105)                        | 3.62                      | 3.83   | 95    |      | 3.25                      | 3.81   | 85    |      |
| CI5(118)                        | 3.43                      | 3.83   | 90    |      | 3.41                      | 3.81   | 90    |      |
| CI6(128)                        | 3.68                      | 3.83   | 96    |      | 3.42                      | 3.81   | 90    |      |
| CI6(138)                        | 3.73                      | 3.83   | 97    |      | 3.51                      | 3.81   | 92    |      |
| CI6(153)                        | 3.48                      | 3.83   | 91    |      | 3.26                      | 3.81   | 86    |      |
| CI7(170)                        | 3.70                      | 3.83   | 97    |      | 3.44                      | 3.81   | 90    |      |
| CI7(180)                        | 3.75                      | 3.83   | 98    |      | 3.53                      | 3.81   | 93    |      |
| CI7(187)                        | 3.75                      | 3.83   | 98    |      | 3.48                      | 3.81   | 91    |      |
| CI8(195)                        | 3.85                      | 3.83   | 101   |      | 3.58                      | 3.81   | 94    |      |
| CI9(206)                        | 3.86                      | 3.83   | 101   |      | 3.63                      | 3.81   | 95    |      |
| CI10(209)                       | 4.15                      | 3.83   | 108   |      | 3.91                      | 3.81   | 103   |      |
| <b>Surrogate Recoveries (%)</b> |                           |        |       |      |                           |        |       |      |
| CI3(34)                         | 98                        |        |       |      | 100                       |        |       |      |
| CI6(152)                        | 96                        |        |       |      | 100                       |        |       |      |

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Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

| Client ID             | NBH14-0073 | NBH14-0081 | NBH14-0085 | NBH14-0105 |
|-----------------------|------------|------------|------------|------------|
| Battelle ID           | M8168-P    | M8170-P    | M8171-P1   | M8388-P    |
| Sample Type           | SA         | SA         | SA         | SA         |
| Collection Date       | 09/23/2014 | 09/23/2014 | 09/23/2014 | 09/24/2014 |
| Extraction Date       | 11/03/2014 | 11/03/2014 | 11/03/2014 | 11/03/2014 |
| Analysis Date         | 11/15/2014 | 11/15/2014 | 11/15/2014 | 11/15/2014 |
| Analytical Instrument | ECD        | ECD        | ECD        | ECD        |
| % Moisture            | 3.76       | 0.51       | 2.02       | 0.55       |
| % Lipid               | NA         | NA         | NA         | NA         |
| Matrix                | SED        | SED        | SED        | SED        |
| Sample Size           | 9.62       | 10.00      | 9.77       | 10.01      |
| Size Unit-Basis       | G_DRY      | G_DRY      | G_DRY      | G_DRY      |
| Units                 | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   | NG/G_DRY   |

|           |         |          |         |         |
|-----------|---------|----------|---------|---------|
| Cl2(8)    | 0.462   | 0.253 U  | 0.629   | 0.476   |
| Cl3(18)   | 0.136 J | 0.254 U  | 0.260 U | 0.254 U |
| Cl3(28)   | 1.43    | 0.188 J  | 2.50    | 1.61    |
| Cl4(44)   | 0.436   | 0.254 U  | 0.459   | 0.355   |
| Cl4(52)   | 1.58 p  | 0.437 p  | 1.44 p  | 1.04    |
| Cl4(66)   | 1.72    | 0.152 J  | 1.66    | 1.20    |
| Cl5(101)  | 1.83    | 0.461    | 1.76    | 1.51    |
| Cl5(105)  | 0.800   | 0.0754 J | 0.822   | 0.812   |
| Cl5(118)  | 3.56    | 0.622    | 3.50    | 3.47    |
| Cl6(128)  | 0.750   | 0.113 pJ | 0.649   | 0.738   |
| Cl6(138)  | 2.62    | 0.548    | 2.47    | 2.68    |
| Cl6(153)  | 2.70    | 0.368    | 2.19    | 2.83    |
| Cl7(170)  | 0.265   | 0.254 U  | 0.166 J | 0.173 J |
| Cl7(180)  | 0.307   | 0.254 U  | 0.239 J | 0.281   |
| Cl7(187)  | 0.294   | 0.254 U  | 0.398 p | 0.611 p |
| Cl8(195)  | 0.264 U | 0.254 U  | 0.260 U | 0.254 U |
| Cl9(206)  | 0.263 U | 0.253 U  | 0.259 U | 0.252 U |
| Cl10(209) | 0.264 U | 0.254 U  | 0.260 U | 0.254 U |

### Surrogate Recoveries (%)

|          |     |     |    |    |
|----------|-----|-----|----|----|
| Cl3(34)  | 101 | 103 | 87 | 95 |
| Cl6(152) | 90  | 93  | 89 | 86 |

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**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | NBH14-0073 | NBH14-0073 |                 |
|------------------------------|------------|------------|-----------------|
| <b>Battelle ID</b>           | M8168-P    | M8168DUP-P |                 |
| <b>Sample Type</b>           | SA         | QADU       |                 |
| <b>Collection Date</b>       | 09/23/2014 | 09/23/2014 |                 |
| <b>Extraction Date</b>       | 11/03/2014 | 11/03/2014 |                 |
| <b>Analysis Date</b>         | 11/15/2014 | 11/15/2014 |                 |
| <b>Analytical Instrument</b> | ECD        | ECD        |                 |
| <b>% Moisture</b>            | 3.76       | 1.05       |                 |
| <b>% Lipid</b>               | NA         | NA         |                 |
| <b>Matrix</b>                | SED        | SED        |                 |
| <b>Sample Size</b>           | 9.62       | 10.00      |                 |
| <b>Size Unit-Basis</b>       | G_DRY      | G_DRY      |                 |
| <b>Units</b>                 | NG/G_DRY   | NG/G_DRY   | <b>RPD Qual</b> |

|           |         |         |      |
|-----------|---------|---------|------|
| Cl2(8)    | 0.462   | 0.432   | 6.7  |
| Cl3(18)   | 0.136 J | 0.254 U |      |
| Cl3(28)   | 1.43    | 1.44    | 0.7  |
| Cl4(44)   | 0.436   | 0.414   | 5.2  |
| Cl4(52)   | 1.58 p  | 1.50    | 5.2  |
| Cl4(66)   | 1.72    | 1.87    | 8.4  |
| Cl5(101)  | 1.83    | 1.76    | 3.9  |
| Cl5(105)  | 0.800   | 0.888   | 10.4 |
| Cl5(118)  | 3.56    | 3.73    | 4.7  |
| Cl6(128)  | 0.750   | 0.741   | 1.2  |
| Cl6(138)  | 2.62    | 2.76    | 5.2  |
| Cl6(153)  | 2.70    | 2.90    | 7.1  |
| Cl7(170)  | 0.265   | 0.239 J | 10.3 |
| Cl7(180)  | 0.307   | 0.308   | 0.3  |
| Cl7(187)  | 0.294   | 0.350   | 17.4 |
| Cl8(195)  | 0.264 U | 0.254 U |      |
| Cl9(206)  | 0.263 U | 0.253 U |      |
| Cl10(209) | 0.264 U | 0.254 U |      |

### Surrogate Recoveries (%)

|          |     |     |  |
|----------|-----|-----|--|
| Cl3(34)  | 101 | 100 |  |
| Cl6(152) | 90  | 92  |  |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID             | NBH14-0081 | NBH14-0081 |        |       |      |
|-----------------------|------------|------------|--------|-------|------|
| Battelle ID           | M8170-P    | M8170MS-P  |        |       |      |
| Sample Type           | SA         | MS         |        |       |      |
| Collection Date       | 09/23/2014 | 09/23/2014 |        |       |      |
| Extraction Date       | 11/03/2014 | 11/03/2014 |        |       |      |
| Analysis Date         | 11/15/2014 | 11/15/2014 |        |       |      |
| Analytical Instrument | ECD        | ECD        |        |       |      |
| % Moisture            | 0.51       | 0.51       |        |       |      |
| % Lipid               | NA         | NA         |        |       |      |
| Matrix                | SED        | SED        |        |       |      |
| Sample Size           | 10.00      | 5.13       |        |       |      |
| Size Unit-Basis       | G_DRY      | G_DRY      |        |       |      |
| Units                 | NG/G_DRY   | NG/G_DRY   | Target | % REC | Qual |

|           |          |      |       |     |
|-----------|----------|------|-------|-----|
| Cl2(8)    | 0.253 U  | 9.78 | 12.18 | 80  |
| Cl3(18)   | 0.254 U  | 10.1 | 12.18 | 83  |
| Cl3(28)   | 0.188 J  | 9.39 | 12.18 | 76  |
| Cl4(44)   | 0.254 U  | 12.9 | 12.18 | 106 |
| Cl4(52)   | 0.437 p  | 11.0 | 12.18 | 87  |
| Cl4(66)   | 0.152 J  | 10.3 | 12.18 | 83  |
| Cl5(101)  | 0.461    | 9.68 | 12.18 | 76  |
| Cl5(105)  | 0.0754 J | 11.2 | 12.18 | 91  |
| Cl5(118)  | 0.622    | 11.1 | 12.18 | 86  |
| Cl6(128)  | 0.113 pJ | 11.5 | 12.18 | 93  |
| Cl6(138)  | 0.548    | 11.8 | 12.18 | 92  |
| Cl6(153)  | 0.368    | 11.1 | 12.18 | 88  |
| Cl7(170)  | 0.254 U  | 11.7 | 12.18 | 96  |
| Cl7(180)  | 0.254 U  | 11.9 | 12.18 | 98  |
| Cl7(187)  | 0.254 U  | 12.3 | 12.18 | 101 |
| Cl8(195)  | 0.254 U  | 12.0 | 12.18 | 99  |
| Cl9(206)  | 0.253 U  | 11.8 | 12.18 | 97  |
| Cl10(209) | 0.254 U  | 12.6 | 12.18 | 103 |

### Surrogate Recoveries (%)

|          |     |    |
|----------|-----|----|
| Cl3(34)  | 103 | 98 |
| Cl6(152) | 93  | 95 |

# Battelle

The Business of Innovation

Project Client: USACE/NAE  
 Project Name: USACE-NAE New Bedford Harbor LTM Study  
 Project Number: 100053747

Client ID NBH14-0081

Battelle ID M8170MSD-P

Sample Type MSD

Collection Date 09/23/2014

Extraction Date 11/03/2014

Analysis Date 11/15/2014

Analytical Instrument ECD

% Moisture 0.51

% Lipid NA

Matrix SED

Sample Size 5.18

Size Unit-Basis G\_DRY

Units NG/G\_DRY Target % REC Qual RPD Qual

|           |      | Target | % REC | Qual | RPD  | Qual |
|-----------|------|--------|-------|------|------|------|
| CI2(8)    | 9.57 | 12.07  | 79    |      | 1.3  |      |
| CI3(18)   | 9.46 | 12.07  | 78    |      | 6.2  |      |
| CI3(28)   | 9.56 | 12.07  | 78    |      | 2.6  |      |
| CI4(44)   | 9.60 | 12.07  | 80    |      | 28.0 |      |
| CI4(52)   | 10.4 | 12.07  | 83    |      | 4.7  |      |
| CI4(66)   | 10.5 | 12.07  | 86    |      | 3.6  |      |
| CI5(101)  | 9.56 | 12.07  | 75    |      | 1.3  |      |
| CI5(105)  | 10.8 | 12.07  | 89    |      | 2.2  |      |
| CI5(118)  | 10.7 | 12.07  | 83    |      | 3.6  |      |
| CI6(128)  | 12.0 | 12.07  | 98    |      | 5.2  |      |
| CI6(138)  | 12.4 | 12.07  | 98    |      | 6.3  |      |
| CI6(153)  | 10.6 | 12.07  | 85    |      | 3.5  |      |
| CI7(170)  | 11.4 | 12.07  | 94    |      | 2.1  |      |
| CI7(180)  | 11.4 | 12.07  | 94    |      | 4.2  |      |
| CI7(187)  | 11.2 | 12.07  | 93    |      | 8.2  |      |
| CI8(195)  | 11.8 | 12.07  | 98    |      | 1.0  |      |
| CI9(206)  | 12.0 | 12.07  | 99    |      | 2.0  |      |
| CI10(209) | 12.8 | 12.07  | 106   |      | 2.9  |      |

**Surrogate Recoveries (%)**

|          |     |
|----------|-----|
| CI3(34)  | 108 |
| CI6(152) | 104 |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Method Detection Limits | Method Detection Limits | Method Detection Limits | Method Detection Limits |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Battelle ID</b>           | CD590MDL-P              | CD591MDL-P              | CD592MDL-P              | CD593MDL-P              |
| <b>Sample Type</b>           | MDL                     | MDL                     | MDL                     | MDL                     |
| <b>Collection Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Extraction Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Analysis Date</b>         | 11/14/2014              | 11/14/2014              | 11/14/2014              | 11/14/2014              |
| <b>Analytical Instrument</b> | ECD                     | ECD                     | ECD                     | ECD                     |
| <b>% Moisture</b>            | 16.89                   | 13.57                   | 14.10                   | 12.79                   |
| <b>% Lipid</b>               | NA                      | NA                      | NA                      | NA                      |
| <b>Matrix</b>                | SEDIMENT                | SEDIMENT                | SEDIMENT                | SEDIMENT                |
| <b>Sample Size</b>           | 8.37                    | 9.02                    | 9.34                    | 9.02                    |
| <b>Size Unit-Basis</b>       | G_DRY                   | G_DRY                   | G_DRY                   | G_DRY                   |
| <b>Units</b>                 | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                |

|           |        |         |         |         |
|-----------|--------|---------|---------|---------|
| CI2(8)    | 0.711  | 0.662   | 0.621   | 0.618   |
| CI3(18)   | 0.512  | 0.532   | 0.418   | 0.430   |
| CI3(28)   | 0.783  | 0.726   | 0.668   | 0.737   |
| CI4(44)   | 0.739  | 0.620   | 0.784   | 0.687   |
| CI4(52)   | 1.09 p | 0.888 p | 0.845 p | 0.913 p |
| CI4(66)   | 0.846  | 0.782   | 0.922   | 0.728   |
| CI5(101)  | 1.28   | 1.09    | 1.18    | 1.30    |
| CI5(105)  | 0.701  | 0.640   | 0.816   | 0.698   |
| CI5(118)  | 0.785  | 0.779   | 0.727   | 0.782   |
| CI6(128)  | 0.735  | 0.655   | 0.692   | 0.735   |
| CI6(138)  | 0.928  | 0.762   | 0.725   | 0.712   |
| CI6(153)  | 0.724  | 0.766   | 0.642   | 0.633   |
| CI7(170)  | 0.775  | 0.726   | 0.756   | 0.756   |
| CI7(180)  | 0.786  | 0.725   | 0.737   | 0.771   |
| CI7(187)  | 0.790  | 0.736   | 0.739   | 0.744   |
| CI8(195)  | 0.828  | 0.749   | 0.813   | 0.815   |
| CI9(206)  | 0.860  | 0.744   | 0.819   | 0.829   |
| CI10(209) | 0.919  | 0.807   | 0.908   | 0.901   |

## Surrogate Recoveries (%)

|          |     |     |    |    |
|----------|-----|-----|----|----|
| CI3(34)  | 92  | 95  | 86 | 84 |
| CI6(152) | 104 | 102 | 87 | 90 |



**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Method Detection Limits | Method Detection Limits | Method Detection Limits | Method Detection Limits |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Battelle ID</b>           | CD594MDL-P              | CD595MDL-P              | CD596MDL-P              | CD597MDL-P              |
| <b>Sample Type</b>           | MDL                     | MDL                     | MDL                     | MDL                     |
| <b>Collection Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Extraction Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Analysis Date</b>         | 11/14/2014              | 11/14/2014              | 11/14/2014              | 11/15/2014              |
| <b>Analytical Instrument</b> | ECD                     | ECD                     | ECD                     | ECD                     |
| <b>% Moisture</b>            | 17.65                   | 15.42                   | 14.98                   | 16.36                   |
| <b>% Lipid</b>               | NA                      | NA                      | NA                      | NA                      |
| <b>Matrix</b>                | SEDIMENT                | SEDIMENT                | SEDIMENT                | SEDIMENT                |
| <b>Sample Size</b>           | 8.28                    | 8.47                    | 8.69                    | 8.37                    |
| <b>Size Unit-Basis</b>       | G_DRY                   | G_DRY                   | G_DRY                   | G_DRY                   |
| <b>Units</b>                 | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                |

|           |        |         |        |         |
|-----------|--------|---------|--------|---------|
| CI2(8)    | 0.729  | 0.667   | 0.717  | 0.725   |
| CI3(18)   | 0.419  | 0.429   | 0.457  | 0.481   |
| CI3(28)   | 0.730  | 0.748   | 0.729  | 0.783 p |
| CI4(44)   | 0.688  | 0.665   | 0.736  | 0.712   |
| CI4(52)   | 1.13 p | 0.870 p | 1.03 p | 1.12 p  |
| CI4(66)   | 0.811  | 0.768   | 0.793  | 0.862   |
| CI5(101)  | 1.28   | 1.19    | 1.20   | 1.22    |
| CI5(105)  | 0.779  | 0.732   | 0.758  | 0.738   |
| CI5(118)  | 0.910  | 0.971   | 0.921  | 0.966   |
| CI6(128)  | 0.830  | 0.812   | 0.762  | 0.822   |
| CI6(138)  | 0.856  | 0.826   | 0.752  | 0.839   |
| CI6(153)  | 0.809  | 0.912   | 0.690  | 0.650   |
| CI7(170)  | 0.925  | 0.903   | 0.804  | 0.835   |
| CI7(180)  | 0.905  | 0.886   | 0.822  | 0.827   |
| CI7(187)  | 0.894  | 0.881   | 0.783  | 0.898   |
| CI8(195)  | 0.984  | 0.954   | 0.879  | 0.929   |
| CI9(206)  | 1.01   | 0.981   | 0.907  | 0.950   |
| CI10(209) | 1.09   | 1.07    | 0.990  | 1.03    |

**Surrogate Recoveries (%)**

|          |    |    |    |    |
|----------|----|----|----|----|
| CI3(34)  | 92 | 99 | 92 | 95 |
| CI6(152) | 92 | 89 | 94 | 97 |

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

Average MDL Weight 8.70 G\_DRY

| <i>MDL Analytes</i> | Average | Standard Deviation | %RSD | MDL (ng/g) | MDL (ng) |
|---------------------|---------|--------------------|------|------------|----------|
| CI2(8)              | 0.681   | 0.046              | 6.8  | 0.138      | 1.20     |
| CI3(18)             | 0.460   | 0.044              | 9.6  | 0.132      | 1.15     |
| CI3(28)             | 0.738   | 0.037              | 5.0  | 0.111      | 0.966    |
| CI4(44)             | 0.704   | 0.050              | 7.1  | 0.150      | 1.30     |
| CI4(52)             | 0.986   | 0.119              | 12.1 | 0.357      | 3.11     |
| CI4(66)             | 0.814   | 0.061              | 7.5  | 0.183      | 1.59     |
| CI5(101)            | 1.218   | 0.069              | 5.7  | 0.207      | 1.80     |
| CI5(105)            | 0.733   | 0.054              | 7.4  | 0.162      | 1.41     |
| CI5(118)            | 0.855   | 0.097              | 11.3 | 0.291      | 2.53     |
| CI6(128)            | 0.755   | 0.063              | 8.3  | 0.189      | 1.64     |
| CI6(138)            | 0.800   | 0.074              | 9.3  | 0.222      | 1.93     |
| CI6(153)            | 0.728   | 0.097              | 13.3 | 0.291      | 2.53     |
| CI7(170)            | 0.810   | 0.072              | 8.9  | 0.216      | 1.88     |
| CI7(180)            | 0.807   | 0.065              | 8.1  | 0.195      | 1.70     |
| CI7(187)            | 0.808   | 0.072              | 8.9  | 0.216      | 1.88     |
| CI8(195)            | 0.869   | 0.081              | 9.3  | 0.243      | 2.11     |
| CI9(206)            | 0.888   | 0.091              | 10.2 | 0.273      | 2.38     |
| CI10(209)           | 0.964   | 0.097              | 10.1 | 0.291      | 2.53     |

**Surrogate Recoveries (%)**

CI3(34)  
 CI6(152)

# Battelle

*The Business of Innovation*

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| <b>Client ID</b>             | <b>Method Detection Limits</b> | <b>Method Detection Limits</b> | <b>Method Detection Limits</b> | <b>Method Detection Limits</b> |
|------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| <b>Battelle ID</b>           | CD590MDL-P                     | CD591MDL-P                     | CD592MDL-P                     | CD593MDL-P                     |
| <b>Sample Type</b>           | MDL                            | MDL                            | MDL                            | MDL                            |
| <b>Collection Date</b>       | 11/03/2014                     | 11/03/2014                     | 11/03/2014                     | 11/03/2014                     |
| <b>Extraction Date</b>       | 11/03/2014                     | 11/03/2014                     | 11/03/2014                     | 11/03/2014                     |
| <b>Analysis Date</b>         | 11/14/2014                     | 11/14/2014                     | 11/14/2014                     | 11/14/2014                     |
| <b>Analytical Instrument</b> | ECD                            | ECD                            | ECD                            | ECD                            |
| <b>% Moisture</b>            | 16.89                          | 13.57                          | 14.10                          | 12.79                          |
| <b>% Lipid</b>               | NA                             | NA                             | NA                             | NA                             |
| <b>Matrix</b>                | SEDIMENT                       | SEDIMENT                       | SEDIMENT                       | SEDIMENT                       |
| <b>Sample Size</b>           | 8.37                           | 9.02                           | 9.34                           | 9.02                           |
| <b>Size Unit-Basis</b>       | G_DRY                          | G_DRY                          | G_DRY                          | G_DRY                          |
| <b>Units</b>                 | NG/G_DRY                       | NG/G_DRY                       | NG/G_DRY                       | NG/G_DRY                       |

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Method Detection Limits | Method Detection Limits | Method Detection Limits | Method Detection Limits |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Battelle ID</b>           | CD594MDL-P              | CD595MDL-P              | CD596MDL-P              | CD597MDL-P              |
| <b>Sample Type</b>           | MDL                     | MDL                     | MDL                     | MDL                     |
| <b>Collection Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Extraction Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Analysis Date</b>         | 11/14/2014              | 11/14/2014              | 11/14/2014              | 11/15/2014              |
| <b>Analytical Instrument</b> | ECD                     | ECD                     | ECD                     | ECD                     |
| <b>% Moisture</b>            | 17.65                   | 15.42                   | 14.98                   | 16.36                   |
| <b>% Lipid</b>               | NA                      | NA                      | NA                      | NA                      |
| <b>Matrix</b>                | SEDIMENT                | SEDIMENT                | SEDIMENT                | SEDIMENT                |
| <b>Sample Size</b>           | 8.28                    | 8.47                    | 8.69                    | 8.37                    |
| <b>Size Unit-Basis</b>       | G_DRY                   | G_DRY                   | G_DRY                   | G_DRY                   |
| <b>Units</b>                 | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                |

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| <i>MDL Analytes</i> | Average MDL Weight |                    |      | G_DRY      |          |
|---------------------|--------------------|--------------------|------|------------|----------|
|                     | Average            | Standard Deviation | %RSD | MDL (ng/g) | MDL (ng) |

# Battelle

The Business of Innovation

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Method Detection Limits | Method Detection Limits | Method Detection Limits | Method Detection Limits |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Battelle ID</b>           | CD590MDL-P              | CD591MDL-P              | CD592MDL-P              | CD593MDL-P              |
| <b>Sample Type</b>           | MDL                     | MDL                     | MDL                     | MDL                     |
| <b>Collection Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Extraction Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Analysis Date</b>         | 11/14/2014              | 11/14/2014              | 11/14/2014              | 11/14/2014              |
| <b>Analytical Instrument</b> | ECD                     | ECD                     | ECD                     | ECD                     |
| <b>% Moisture</b>            | 16.89                   | 13.57                   | 14.10                   | 12.79                   |
| <b>% Lipid</b>               | NA                      | NA                      | NA                      | NA                      |
| <b>Matrix</b>                | SEDIMENT                | SEDIMENT                | SEDIMENT                | SEDIMENT                |
| <b>Sample Size</b>           | 8.37                    | 9.02                    | 9.34                    | 9.02                    |
| <b>Size Unit-Basis</b>       | G_DRY                   | G_DRY                   | G_DRY                   | G_DRY                   |
| <b>Units</b>                 | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                |

## Target Values

|           |      |      |      |      |
|-----------|------|------|------|------|
| Cl2(8)    | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl3(18)   | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl3(28)   | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl4(44)   | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl4(52)   | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl4(66)   | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl5(101)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl5(105)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl5(118)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl6(128)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl6(138)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl6(153)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl7(170)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl7(180)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl7(187)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl8(195)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl9(206)  | 0.90 | 0.83 | 0.80 | 0.83 |
| Cl10(209) | 0.90 | 0.83 | 0.80 | 0.83 |

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| Client ID                    | Method Detection Limits | Method Detection Limits | Method Detection Limits | Method Detection Limits |
|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>Battelle ID</b>           | CD594MDL-P              | CD595MDL-P              | CD596MDL-P              | CD597MDL-P              |
| <b>Sample Type</b>           | MDL                     | MDL                     | MDL                     | MDL                     |
| <b>Collection Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Extraction Date</b>       | 11/03/2014              | 11/03/2014              | 11/03/2014              | 11/03/2014              |
| <b>Analysis Date</b>         | 11/14/2014              | 11/14/2014              | 11/14/2014              | 11/15/2014              |
| <b>Analytical Instrument</b> | ECD                     | ECD                     | ECD                     | ECD                     |
| <b>% Moisture</b>            | 17.65                   | 15.42                   | 14.98                   | 16.36                   |
| <b>% Lipid</b>               | NA                      | NA                      | NA                      | NA                      |
| <b>Matrix</b>                | SEDIMENT                | SEDIMENT                | SEDIMENT                | SEDIMENT                |
| <b>Sample Size</b>           | 8.28                    | 8.47                    | 8.69                    | 8.37                    |
| <b>Size Unit-Basis</b>       | G_DRY                   | G_DRY                   | G_DRY                   | G_DRY                   |
| <b>Units</b>                 | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                | NG/G_DRY                |

**Target Values**

|           |      |      |      |      |
|-----------|------|------|------|------|
| Cl2(8)    | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl3(18)   | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl3(28)   | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl4(44)   | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl4(52)   | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl4(66)   | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl5(101)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl5(105)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl5(118)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl6(128)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl6(138)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl6(153)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl7(170)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl7(180)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl7(187)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl8(195)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl9(206)  | 0.91 | 0.89 | 0.86 | 0.90 |
| Cl10(209) | 0.91 | 0.89 | 0.86 | 0.90 |

**Project Client:** USACE/NAE  
**Project Name:** USACE-NAE New Bedford Harbor LTM Study  
**Project Number:** 100053747

| <i>MDL Analytes</i> | Average MDL Weight |                    |      | G_DRY      |          |
|---------------------|--------------------|--------------------|------|------------|----------|
|                     | Average            | Standard Deviation | %RSD | MDL (ng/g) | MDL (ng) |
| —                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |
| ■                   |                    |                    |      |            |          |



## Glossary of Data Qualifiers

**Flag: Application:**

---

- B Analyte concentration found in the sample at a concentration <5x the level found in the procedural blank.
- D Dilution Run. Initial run outside linear range of instrument.
- E Estimate, result is greater than the highest concentration level in the calibration.
- H Surrogate diluted out. Used when surrogate recovery is affected by excessive dilution of the sample extract.
- J Analyte detected below the sample-specific Reporting Limit (RL).
- m Confirmation column manually over-ridden by analyst, dual column quantitative analysis only.
- ME Significant Matrix Interference - Estimated value.
- MI Significant Matrix Interference - value could not be determined or estimated.
- n Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO), but meets the contingency criteria.
- N Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
- NA Not applicable
- p Dual column value exceeds RPD criteria, dual column quantitative analysis only.
- T Holding Time (HT) exceeded.
- U Analyte not detected at 3:1 signal:noise ratio.

**QA/QC Summary  
Batch 14-0497**

|                   |   |
|-------------------|---|
| Project:          | USACE/NAE – New Bedford Harbor Long Term Monitoring |
| Parameters:       | PCB Congeners (NOAA 18)                             |
| Laboratory:       | Battelle, Norwell, MA                               |
| Matrix:           | Sediment  |
| Data Set:         | DP-14-0679  |
| Analytical SOP:   | 5-128   |
| Method Reference: | EPA Method 8081B and 8082A (modified)               |

**Sample Custody**

| Collection Date | Receipt Date    | Temp (°C) |
|-----------------|-----------------|-----------|
| 9/22-30/2014    | 9/26, 10/1/2014 | 1.0, 1.2  |

|                    |   |
|--------------------|---|
| Corrective Actions | NA  |
| Sample Storage     | The sediment samples were stored frozen until extraction. |
| Related samples    | NA  |

**METHOD SUMMARIES**

|                    |  |
|--------------------|--|
| Sample Preparation | Prior to sediment extraction, an aliquot of approximately 30 g of wet sediment was placed on clean, labeled aluminum foil, covered and placed in a laboratory laminar flow hood to dry the sample to <50% moisture. Aliquots of these dried samples were weighed into sample extraction vessels for sample extraction. Approximately 5 to 10 g sediment was weighed out for extraction (sample weight based on historical analysis results). The sediments were spiked with surrogates, extracted three times with methylene chloride, and the extracts combined, dried over anhydrous sodium sulfate, and concentrated. The concentrated extracts were processed through Florisil to isolate the PCBs, followed by activated copper treatment to remove sulfur. The cleaned extract was concentrated and fortified with internal standard (IS) compounds prior to analysis by GC/ECD. <b>NOTE: This batch includes the project-specific MDL study as well as field samples.</b> |
| Prep Comments      | CD809PB and CD810LCS: Additional QC samples added to batch on 11/3/2014 because project manager was consulted and decided that another PB and LCS were needed for authentic samples due to different spike amounts.  |

|                   |   |
|-------------------|---|
| Analysis          | PCBs were analyzed by gas chromatography electron capture detection (GC/ECD). An initial calibration consisting of target analytes was analyzed prior to sample analysis to demonstrate the linear range. Calibration verification was performed at the beginning and end of each 24-hr period in which samples were analyzed. Concentrations of target compounds were calculated versus internal standards using the average response factors (RF) generated from the initial calibration. |
| Analysis Comments | <ul style="list-style-type: none"> <li>Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed</li> </ul>   |

**QA/QC Summary  
Batch 14-0497**

|  |   |
|--|---|
|  | <p>inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.</p> <ul style="list-style-type: none"> <li>• In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.</li> <li>• In cases where p qualifiers are present, integrations and data were reviewed.</li> <li>• Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak. Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.</li> </ul> |
|--|---|

| Holding Times | Extraction Date(s) | Analysis Date(s) |
|---------------|--------------------|------------------|
|               | 11/3-4/2014        | 11/14-15/2014    |

|                       |  |
|-----------------------|--|
| Procedural Blank (PB) | A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination. |
| Blank value <5x ssMDL | No exceedances noted.  |
| Samples >5X PB        | No comments.   |

|                          |   |
|--------------------------|---|
| Laboratory Control Spike | A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. |
| 70-130% recovery         | No exceedances noted.   |
|                          | No comments.  |

|  |   |
|--|---|
| Matrix Spike (MS)/Matrix Spike Duplicate (MSD) | A MS/MSD pair was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. |
| 70-130% recovery                               | No exceedances noted  |
| <30% RPD                                       | No comments.  |
| Spike must be >5x bkgd conc.                   |   |

**QA/QC Summary  
Batch 14-0497**

|                        |   |
|------------------------|---|
| Sample Duplicate (DUP) | A laboratory duplicate of one sediment was prepared with the analytical batch. The relative percent difference (RPD) was calculated to measure data quality in terms of precision. <b>NOTE: This QC sample was inadvertently included in the sample batch instead of the requested SRM.</b> |
| <30% RPD               | No exceedances noted.   |
| Conc must be >10X MDL  | No comments.  |

|                    |   |
|--------------------|---|
| Surrogate Recovery | Surrogate compounds were added prior to extraction. The surrogate recoveries are calculated to measure extraction efficiency. |
| 40-120% recovery   | No exceedances noted.<br>No comments.   |

|                            |  |
|----------------------------|--|
| Initial Calibration (ICAL) | The GC/ECD was calibrated with six-level quadratic calibration curve for all compounds using an instrument response factor (RF). |
| $R^2 \geq 0.995$           | No exceedances noted.<br>No comments.  |

|  |   |
|--|---|
| Independent Calibration Check (ICC)        | The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL. |
| $\leq 20\%$ difference individual and mean | No exceedances noted.<br>No comments.   |

|  |   |
|--|---|
| Continuing Calibration Verification (CCV)                      | Continuing calibration standards were run every 24 hours to ensure that initial calibration is still valid. |
| $\leq 20\%$ difference individual; $\leq 15\%$ difference mean | No exceedances noted.<br>No comments.   |

## Report Project Data Set MOOs

**Project Title:** USACE/NAE - New Bedford Harbor LTM

**Data Set Number:** DP-14-0679

**Project Number:** 100053747

**Prep Batch Number:** 14-0497

**Test Code (Matrix Type):** Master\_128(S)

| <b>QC_PARAMETER:</b>                   | <b>Exceed:</b> | <b>Contg.:</b> | <b>JUSTIFICATION:</b> |
|--|----------------|----------------|-----------------------|
| Procedural Blank                       | 0              | 0              | None                  |
| PB Measurement Quality Objective       | 0              | 0              | None                  |
| Laboratory Control Sample              | 0              | 0              | None                  |
| Matrix Spike Recovery                  | 0              | 0              | None                  |
| Matrix Spike/Spike Duplicate Precision | 0              | 0              | None                  |
| Standard Reference Material Accuracy   | NA             | NA             | NA                    |
| Analytical Duplicate Precision         | 0              | 0              | None                  |
| Analytical Triplicate Precision        | NA             | NA             | NA                    |
| Surrogate Compound Recovery            | 0              | 0              | None                  |
| Control Oil                            | NA             | NA             | NA                    |
| Instrument Calibration                 | 0              | 0              | None                  |
| Independent Calibration Check Solution | 0              | 0              | None                  |
| Continuing Calibration Verification    | 0              | 0              | None                  |

## BATTELLE - DUXBURY OPERATIONS MISCELLANEOUS DOCUMENTATION FORM

**Project Title:** USACE/NAE - New Bedford Harbor LTM      **Data Set Number:** DP-14-0679  
**Project Number:** 100053747      **Prep Batch Number:** 14-0497  
**Entered By:** Richard Restucci Jr      **Entered On:** 11/25/2014  
**Test Code (Matrix Type):** Master\_128(S)

Integrations by Rich Restucci.  
RR 11/25/14

Method MM0417C is a 6pt quadratic method used to quant all samples. After this batch was quantified, the analyst noticed that PCB 101 was identified incorrectly on the secondary (confirmation) column. A new method was created for PCB 101 only, and the samples re-quantified with the correctly identified peak.

Method MM0417F is a 6pt quadratic method used to quant all undiluted samples and relevant dilutions for PCB 101.  
RR 12/8/14

Method MM0417C utilizes the quant sheets from MM0417B.  
RR 11/25/14

Some congener concentrations were anomalous with surrounding analyte concentrations, or obvious chromatographic interferences were present, likely non-target congeners. In cases where an inflection point was detected in the affected peak, a vertical integration was performed inside the peak to better represent the detected congener. Specific peaks where these interferences present themselves are PCBs 96,161, 28, 66, and 101. As these interferences are not matrix derived, but stem from additional, non-target congeners, the analytes are not ME qualified. A graphical representation of PCB 66 in sample M8402-P-D(5) is located in the unused data section for reference.  
RR 11/25/14

In cases where a congener exhibits dilution level concentrations on one column, but not the other, both columns are reported from dilution for consistency.  
RR 11/25/14

In cases where p qualifiers are present, integrations and data were reviewed.  
RR 11/25/14

**Task Leader Approval:**  Kevin McNerney  
2014.12.08 14:08:23 -05'00'

**Supervisor Approval:**

**PM Approval:**  Carole McCarthy  
2014.12.09 07:43:29 -05'00'

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:   |
|-----------|---------|--------|-------|---------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 2021371 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 2857033 |

L3  
(+)  
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2225995  
4451990  
1112997

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 2508888 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | CI5(96) | 2436917 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | CI5(96) | 2164245 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | CI5(96) | 2270924 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | CI5(96) | 2530448 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | CI5(96) | 2263263 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | CI5(96) | 2569124 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | CI5(96) | 2439258 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | CI5(96) | 2425519 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | CI5(96) | 2687310 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | CI5(96) | 2609586 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | CI5(96) | 2502889 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | CI5(96) | 3196533 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | CI5(96) | 3101992 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | CI5(96) | 3035862 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | CI5(96) | 2850968 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | CI5(96) | 3068867 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | CI5(96) | 3230472 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | CI5(96) | 2970125 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | CI5(96) | 3392393 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | CI5(96) | 3402257 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | CI5(96) | 3424533 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | CI5(96) | 3483421 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417C.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:   |
|-----------|---------|--------|-------|------------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161)   | 4304957 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161)   | 4562564 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161)   | 4815577 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161)   | 5366502 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161)   | 5424577 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161)   | 5785136 |
|           |         |        |       | <b>L3</b>  | 4815577 |
|           |         |        |       | <b>(+)</b> | 9631155 |
|           |         |        |       | <b>(-)</b> | 2407789 |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:   | FLAG: |
|-----------|---------|---------------|-------|----------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 5353469 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | Cl6(161) | 5635758 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | Cl6(161) | 4836853 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | Cl6(161) | 5378808 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | Cl6(161) | 6206066 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | Cl6(161) | 5152353 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | Cl6(161) | 6000805 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | Cl6(161) | 5663145 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | Cl6(161) | 5801937 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | Cl6(161) | 6191104 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | Cl6(161) | 5835931 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | Cl6(161) | 5705689 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | Cl6(161) | 7127913 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | Cl6(161) | 6288454 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | Cl6(161) | 5933033 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | Cl6(161) | 5597103 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | Cl6(161) | 6334278 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | Cl6(161) | 6779955 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | Cl6(161) | 5741188 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | Cl6(161) | 6732509 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | Cl6(161) | 6882455 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | Cl6(161) | 6773303 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | Cl6(161) | 7856766 |       |



## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:   | AREA:    |
|-----------|---------|--------|-------|---------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96) | 12822282 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96) | 12416297 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96) | 13716870 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96) | 14992953 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96) | 15446142 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96) | 15534608 |

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13716870  
27433739  
6858435

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13969685 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | CI5(96) | 15830647 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | CI5(96) | 14681353 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | CI5(96) | 15162087 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | CI5(96) | 15353413 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | CI5(96) | 14964213 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | CI5(96) | 15234569 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | CI5(96) | 15372670 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | CI5(96) | 14204486 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | CI5(96) | 14183601 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | CI5(96) | 16036666 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | CI5(96) | 14887066 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | CI5(96) | 18485755 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | CI5(96) | 15650758 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | CI5(96) | 16224367 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | CI5(96) | 14306291 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | CI5(96) | 15728055 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | CI5(96) | 16143311 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | CI5(96) | 15108158 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | CI5(96) | 15484225 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | CI5(96) | 16555565 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | CI5(96) | 16614511 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | CI5(96) | 19099905 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417C.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | Cl6(161)   | 28199596 |
| SM0417.S  | M7207.D | IE05   | CS    | Cl6(161)   | 27129752 |
| SM0417.S  | M7208.D | IE06   | CS    | Cl6(161)   | 29503850 |
| SM0417.S  | M7209.D | IE07   | CS    | Cl6(161)   | 34497986 |
| SM0417.S  | M7210.D | IE08   | CS    | Cl6(161)   | 34872167 |
| SM0417.S  | M7212.D | IE10   | CS    | Cl6(161)   | 28894537 |
|           |         |        |       | <b>L3</b>  | 29503850 |
|           |         |        |       | <b>(+)</b> | 59007699 |
|           |         |        |       | <b>(-)</b> | 14751925 |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:    | AREA:    | FLAG: |
|-----------|---------|---------------|-------|----------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | Cl6(161) | 30447371 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | Cl6(161) | 36312008 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | Cl6(161) | 34857967 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | Cl6(161) | 37142940 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | Cl6(161) | 37648654 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | Cl6(161) | 36919109 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | Cl6(161) | 38036624 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | Cl6(161) | 37000796 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | Cl6(161) | 34469320 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | Cl6(161) | 36717472 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | Cl6(161) | 38071256 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | Cl6(161) | 35466959 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | Cl6(161) | 41716767 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | Cl6(161) | 35927334 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | Cl6(161) | 37774570 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | Cl6(161) | 33011727 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | Cl6(161) | 36206660 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | Cl6(161) | 39733010 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | Cl6(161) | 34521468 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | Cl6(161) | 37347352 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | Cl6(161) | 38457295 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | Cl6(161) | 38220879 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | Cl6(161) | 46749872 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417F.M

**SIGNAL:** 1

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:   |
|-----------|---------|--------|-------|------------|---------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96)    | 2038180 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96)    | 2103011 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96)    | 2225995 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96)    | 2400478 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96)    | 2523572 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96)    | 2539311 |
|           |         |        |       | <b>L3</b>  | 2225995 |
|           |         |        |       | <b>(+)</b> | 4451990 |
|           |         |        |       | <b>(-)</b> | 1112997 |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:   | FLAG: |
|-----------|---------|---------------|-------|---------|---------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 2508888 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | CI5(96) | 2438735 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | CI5(96) | 2164245 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | CI5(96) | 2270924 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | CI5(96) | 2530448 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | CI5(96) | 2263263 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | CI5(96) | 2631530 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | CI5(96) | 2439258 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | CI5(96) | 2654343 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | CI5(96) | 2634253 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | CI5(96) | 2609586 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | CI5(96) | 2507219 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | CI5(96) | 3196533 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | CI5(96) | 3101992 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | CI5(96) | 3035862 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | CI5(96) | 2850968 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | CI5(96) | 3155710 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | CI5(96) | 3230472 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | CI5(96) | 2970125 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | CI5(96) | 3392393 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | CI5(96) | 3568658 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | CI5(96) | 3645171 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | CI5(96) | 3483421 |       |

## Internal Standard Area Report

**PROJECT NAME:** USACE/NAE - New Bedford Harbor LTM Study

**PROJECT NO:** 100053747

**BATCH:** 14-0497

**METHOD:** MM0417F.M

**SIGNAL:** 2

| SEQUENCE: | FILE:   | LEVEL: | TYPE: | PEAK:      | AREA:    |
|-----------|---------|--------|-------|------------|----------|
| SM0417.S  | M7205.D | IE03   | CS    | CI5(96)    | 12872032 |
| SM0417.S  | M7207.D | IE05   | CS    | CI5(96)    | 13386960 |
| SM0417.S  | M7208.D | IE06   | CS    | CI5(96)    | 13612237 |
| SM0417.S  | M7209.D | IE07   | CS    | CI5(96)    | 14869473 |
| SM0417.S  | M7210.D | IE08   | CS    | CI5(96)    | 15494530 |
| SM0417.S  | M7212.D | IE10   | CS    | CI5(96)    | 15194166 |
|           |         |        |       | <b>L3</b>  | 13612237 |
|           |         |        |       | <b>(+)</b> | 27224474 |
|           |         |        |       | <b>(-)</b> | 6806118  |

| SEQUENCE: | FILE:   | LEVEL:        | TYPE: | PEAK:   | AREA:    | FLAG: |
|-----------|---------|---------------|-------|---------|----------|-------|
| SM0417.S  | M7213.D | HY06 ICC      | ICC   | CI5(96) | 13936712 |       |
| SM0424.S  | M7581.D | IE07          | CCV   | CI5(96) | 15811867 |       |
| SM0424.S  | M7582.D | CD588PB-P(0)  | PB    | CI5(96) | 14712577 |       |
| SM0424.S  | M7583.D | CD589LCS-P(0) | LCS   | CI5(96) | 15266855 |       |
| SM0424.S  | M7584.D | CD590MDL-P(0) | MDL   | CI5(96) | 15423635 |       |
| SM0424.S  | M7585.D | CD591MDL-P(0) | MDL   | CI5(96) | 15016002 |       |
| SM0424.S  | M7586.D | CD592MDL-P(0) | MDL   | CI5(96) | 15278184 |       |
| SM0424.S  | M7587.D | CD593MDL-P(0) | MDL   | CI5(96) | 15384670 |       |
| SM0424.S  | M7588.D | CD594MDL-P(0) | MDL   | CI5(96) | 14296280 |       |
| SM0424.S  | M7589.D | CD595MDL-P(0) | MDL   | CI5(96) | 14387298 |       |
| SM0424.S  | M7590.D | CD596MDL-P(0) | MDL   | CI5(96) | 15921435 |       |
| SM0424.S  | M7591.D | CD597MDL-P(0) | MDL   | CI5(96) | 14980909 |       |
| SM0424.S  | M7592.D | IE08          | CCV   | CI5(96) | 18155079 |       |
| SM0424.S  | M7593.D | CD809PB-P(0)  | PB    | CI5(96) | 15628154 |       |
| SM0424.S  | M7594.D | CD810LCS-P(0) | LCS   | CI5(96) | 16237338 |       |
| SM0424.S  | M7595.D | M8168-P(2)    | SA    | CI5(96) | 14541305 |       |
| SM0424.S  | M7596.D | M8168DUP-P(2) | QADU  | CI5(96) | 15605301 |       |
| SM0424.S  | M7597.D | M8170-P(2)    | SA    | CI5(96) | 16224014 |       |
| SM0424.S  | M7598.D | M8170MS-P(0)  | MS    | CI5(96) | 15250466 |       |
| SM0424.S  | M7599.D | M8170MSD-P(0) | MSD   | CI5(96) | 15643142 |       |
| SM0424.S  | M7600.D | M8171-P1(2)   | SA    | CI5(96) | 16482538 |       |
| SM0424.S  | M7601.D | M8388-P(2)    | SA    | CI5(96) | 16286767 |       |
| SM0424.S  | M7603.D | IE07          | CCV   | CI5(96) | 18994252 |       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE PREPARATION RECORDS

|   |                              |
|---|------------------------------|
| <b><u>Project Title(s)</u></b>                | <b><u>Project No.(s)</u></b> |
| USACE/NAE - New Bedford Harbor LTM Study      | 100053747                    |
| <b>14-0497</b>                                |                              |
| <b>USACE-NAE New Bedford Harbor LTM Study</b> |                              |
| <b>SED, TISSUE</b>                            |                              |
| SOP Numbers (see workplan for modifications)  |                              |
| ExtractionSOP No.                             | 5-192                        |
| CleanupSOP No.                                | 5-327                        |
| CleanupSOP No.                                | 5-328                        |

| This Batch Contains The Following Samples: |            |            |         |
|--|------------|------------|---------|
| CD588PB-P                                  | CD594MDL-P | M8168-P    | M8388-P |
| CD589LCS-P                                 | CD595MDL-P | M8168DUP-P |         |
| CD590MDL-P                                 | CD596MDL-P | M8170-P    |         |
| CD591MDL-P                                 | CD597MDL-P | M8170MS-P  |         |
| CD592MDL-P                                 | CD809PB-P  | M8170MSD-P |         |
| CD593MDL-P                                 | CD810LCS-P | M8171-P1   |         |

Laboratory Preparation Records  
COMPLETE AND VALIDATED

Prep Task Leader: Samuel Guimaraes

| Approved By:     | Date       | Initials |
|------------------|------------|----------|
| Samuel Guimaraes | 11/10/2014 | SG       |

## BATTELLE - DUXBURY OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

|   |  |
|---|--|
| <b>Requested On/By:</b> 10/20/2014 SG         | <b>Purpose:</b> Sample Preparation       |
| <b>Relinquished On/By:</b> 10/20/2014 MDS     | <b>Last Activity:</b> Return             |
| <b>Accepted On/By:</b> 10/20/2014 SG          | <b>Returned On/To:</b> 10/20/2014 MDS    |
| <b>Stored In Facility:</b> Sample Preparation | <b>Returned To Facility:</b> Custody: NA |
| <b>Stored Until:</b> 10/20/2014               | <b>Returned Comment:</b> NA              |
| <b>Stored Comment:</b> NA                     |  |

| No.                  | BDO-ID: | Ctrs | *  | Condition:                 | Custody Comment: |
|----------------------|---------|------|----|----------------------------|------------------|
| 1                    | M8168   | 1    | -- | Intact                     | NA               |
| 2                    | M8170   | 1    | -- | Intact                     | NA               |
| 3                    | M8388   | 1    | -- | Intact                     | NA               |
| <b>Total Samples</b> |         | 3    |    | * "C" = Consumed Container |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE CUSTODY LOG

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

|                                       |                                    |
|---------------------------------------|------------------------------------|
| <b>Requested On/By:</b> 11/07/2014 SG | <b>Purpose:</b> Sample Preparation |
| <b>Relinquished On/By:</b>            | <b>Last Activity:</b> Request      |
| <b>Accepted On/By:</b>                | <b>Returned On/To:</b>             |
| <b>Stored In Facility:</b>            | <b>Returned To Facility:</b>       |
| <b>Stored Until:</b>                  |                                    |
| <b>Stored Comment:</b> NA             | <b>Returned Comment:</b> NA        |

| No.                  | BDO-ID: | Ctrs | *                          | Condition: | Custody Comment: |
|----------------------|---------|------|----------------------------|------------|------------------|
| 1                    | M8171   | 1    | --                         | Intact     | NA               |
| <b>Total Samples</b> |         | 1    | * "C" = Consumed Container |            |                  |

## BATTELLE - DUXBURY OPERATIONS SAMPLE IDENTIFICATION PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID  | Description                          |
|------------|--------------------------------------|
| CD588PB-P  | Procedural Blank                     |
| CD589LCS-P | Laboratory Control Sample            |
| CD590MDL-P | Method Detection Limits              |
| CD591MDL-P | Method Detection Limits              |
| CD592MDL-P | Method Detection Limits              |
| CD593MDL-P | Method Detection Limits              |
| CD594MDL-P | Method Detection Limits              |
| CD595MDL-P | Method Detection Limits              |
| CD596MDL-P | Method Detection Limits              |
| CD597MDL-P | Method Detection Limits              |
| CD809PB-P  | Procedural Blank                     |
| CD810LCS-P | Laboratory Control Sample            |
| M8168-P    | NBH14-0073                           |
| M8168DUP-P | Lab Duplicate of NBH14-0073          |
| M8170-P    | NBH14-0081                           |
| M8170MS-P  | Matrix Spike of NBH14-0081           |
| M8170MSD-P | Matrix Spike Duplicate of NBH14-0081 |
| M8171-P1   | NBH14-0085                           |
| M8388-P    | NBH14-0105                           |

Samples Assigned By

Samuel Guimaraes

Date : October 13, 2014

Comments:



## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID: | Ctrs. | *  | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|------------|-------|----|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD588PB-P  | NA    | -- | NA           | NA              | NA          | 10.06              | 98.29     | 1.71       | 9.89               |
| CD589LCS-P | NA    | -- | NA           | NA              | NA          | 9.95               | 98.29     | 1.71       | 9.78               |
| CD590MDL-P | NA    | -- | 1.08         | 3.33            | 2.95        | 10.07              | 83.11     | 16.89      | 8.37               |
| CD591MDL-P | NA    | -- | 1.10         | 3.31            | 3.01        | 10.44              | 86.43     | 13.57      | 9.02               |
| CD592MDL-P | NA    | -- | 1.11         | 3.45            | 3.12        | 10.87              | 85.90     | 14.10      | 9.34               |
| CD593MDL-P | NA    | -- | 1.10         | 3.29            | 3.01        | 10.34              | 87.21     | 12.79      | 9.02               |
| CD594MDL-P | NA    | -- | 1.10         | 3.65            | 3.20        | 10.06              | 82.35     | 17.65      | 8.28               |
| CD595MDL-P | NA    | -- | 1.11         | 3.12            | 2.81        | 10.01              | 84.58     | 15.42      | 8.47               |
| CD596MDL-P | NA    | -- | 1.09         | 3.16            | 2.85        | 10.22              | 85.02     | 14.98      | 8.69               |
| CD597MDL-P | NA    | -- | 1.11         | 3.31            | 2.95        | 10.01              | 83.64     | 16.36      | 8.37               |
| CD809PB-P  | NA    | -- | NA           | NA              | NA          | 9.95               | 98.39     | 1.61       | 9.79               |
| CD810LCS-P | NA    | -- | NA           | NA              | NA          | 10.01              | 98.39     | 1.61       | 9.85               |
| M8168-P    | 1     | -- | 1.10         | 2.96            | 2.89        | 10.00              | 96.24     | 3.76       | 9.62               |
| M8168DUP-P | 1     | -- | 1.11         | 3.01            | 2.99        | 10.11              | 98.95     | 1.05       | 10.00              |
| M8170-P    | 1     | -- | 1.12         | 3.07            | 3.06        | 10.05              | 99.49     | 0.51       | 10.00              |
| M8170MS-P  | 1     | -- | 1.09         | 3.05            | 3.04        | 5.16               | 99.49     | 0.51       | 5.13               |
| M8170MSD-P | 1     | -- | 1.12         | 3.07            | 3.06        | 5.21               | 99.49     | 0.51       | 5.18               |
| M8171-P1   | 1     | -- | 1.11         | 3.09            | 3.05        | 9.97               | 97.98     | 2.02       | 9.77               |
| M8388-P    | 1     | -- | 1.10         | 2.93            | 2.92        | 10.07              | 99.45     | 0.55       | 10.01              |

|                       |                   |
|-----------------------|-------------------|
| <b>Validation of:</b> | <b>Performed:</b> |
| Wet Wt.               | 11/10/14 SG       |

| Sample ID: | Comments:  | Reference: |
|------------|--|------------|
| CD588PB-P  | Average of percent dry weights from authentic samples in Batch | NA         |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed

## BATTELLE - DUXBURY OPERATIONS ELECTRONIC DRY WEIGHT DETERMINATION

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID:   | Ctrs. | * | Tare Wt. (g) | Aliquot Wt. (g) | Dry Wt. (g) | Sample Wet Wt. (g) | % Dry Wt. | % Moisture | Sample Dry Wt. (g) |
|--|-------|---|--------------|-----------------|-------------|--------------------|-----------|------------|--------------------|
| CD589LCS-P   |       |   |              |                 |             |                    |           |            |                    |
| No. 14-0497 USACE-NAE New Bedford Harbor LTM Study             |       |   |              |                 |             |                    |           |            |                    |
| Average of percent dry weights from authentic samples in Batch |       |   |              |                 |             |                    | NA        |            |                    |
| No. 14-0497 USACE-NAE New Bedford Harbor LTM Study             |       |   |              |                 |             |                    |           |            |                    |
| CD809PB-P  |       |   |              |                 |             |                    |           |            |                    |
| Average of percent dry weights from authentic samples in Batch |       |   |              |                 |             |                    | NA        |            |                    |
| No. 14-0497 USACE-NAE New Bedford Harbor LTM Study             |       |   |              |                 |             |                    |           |            |                    |
| CD810LCS-P   |       |   |              |                 |             |                    |           |            |                    |
| Average of percent dry weights from authentic samples in Batch |       |   |              |                 |             |                    | NA        |            |                    |
| No. 14-0497 USACE-NAE New Bedford Harbor LTM Study             |       |   |              |                 |             |                    |           |            |                    |
| M8171-P1   |       |   |              |                 |             |                    |           |            | M8171 (14-0496)    |

Percent Dry Wt (%) = [(Sample Dry Wt. (g) - Tare Wt. (g))/(Aliquot Wet Wt. (g) - Tare Wt. (g))] \* 100

Sample Dry Wt. (%) = [(Sample Wet Wt. (g) \* (Percent Dry Wt./100)]

\* "C" = Sample Container Is Consumed



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
SURROGATE SPIKE FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| CD588PB-P  | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD589LCS-P | HX10        | LCS/MS | 8        | 75             | 11/03/14 SG               | KAW       | NA      |
| CD589LCS-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD590MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD590MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD591MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD591MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD592MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD592MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD593MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD593MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD594MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD594MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD595MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD595MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD596MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD596MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD597MDL-P | ID59        | SIS    | 1        | 100            | 11/03/14 SG               | KAW       | NA      |
| CD597MDL-P | ID73        | LCS/MS | 1        | 150            | 11/03/14 SG               | KAW       | NA      |
| CD809PB-P  | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| CD810LCS-P | HX10        | LCS/MS | 8        | 75             | 11/03/14 SG               | KAW       | NA      |
| CD810LCS-P | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8168-P    | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8168DUP-P | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8170-P    | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8170MS-P  | HX10        | LCS/MS | 8        | 125            | 11/03/14 SG               | KAW       | NA      |

## BATTELLE - DUXBURY OPERATIONS SURROGATE SPIKE FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID  | Standard ID | Type   | Vial No. | Vol Added (uL) | Date Spiked/<br>Spiked By | Witn'd By | Comment |
|------------|-------------|--------|----------|----------------|---------------------------|-----------|---------|
| M8170MS-P  | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8170MSD-P | HX10        | LCS/MS | 8        | 125            | 11/03/14 SG               | KAW       | NA      |
| M8170MSD-P | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8171-P1   | ID59        | SIS    | 4        | 400            | 11/03/14 SG               | KAW       | NA      |
| M8388-P    | ID59        | SIS    | 1        | 400            | 11/03/14 SG               | KAW       | NA      |

Syringes/Pipettes Used:

| Std ID | Type    | Syr/Pip   |
|--------|---------|-----------|
| HX10   | Pipette | G0400231B |
| ID59   | Pipette | G0400231B |
| ID59   | Pipette | I0827923B |
| ID73   | Pipette | G0400231B |



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
SAMPLE EXTRACTION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID  | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|------------|------------------|-------------------|------------------|----------|-----------|-------|---------|
| CD588PB-P  | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD589LCS-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD590MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD591MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD592MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD593MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD594MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD595MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD596MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD597MDL-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD809PB-P  | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| CD810LCS-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8168-P    | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8168DUP-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8170-P    | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8170MS-P  | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8170MSD-P | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8171-P1   | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |
| M8388-P    | 11/03/14 SG      | 11/03/14 SG       | 11/04/14 KAW     | NA       | NA        | 65    | NA      |

## BATTELLE - DUXBURY OPERATIONS SAMPLE EXTRACTION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID | First Extraction | Second Extraction | Third Extraction | Turbo °C | Turbo PSI | KD °C | Comment |
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|
|-----------|------------------|-------------------|------------------|----------|-----------|-------|---------|

**Reagents:**

| Name           | Expires  | Lot No     | Procedure  | Comments |
|----------------|----------|------------|--|----------|
| Sodium Sulfate | 11/10/14 | 0000084928 | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |
| Sodium Sulfate | 11/04/14 | 084928     | Muffled at 400 °C for more than 4 hours. Expiration date changed from original after reagent was consumed. |          |

**Solvents:**

| Name            | Lot No      | Comments                                |
|-----------------|-------------|---|
| DCM cycletainer | 00000093995 |   |
| Hexane          | 0000078260  | Solvent exchanged during concentration. |



The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT CLEANUP FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Extract Id    | Date     | Init. | Comments |
|---------------|----------|-------|----------|
| CD588PB-P(0)  | 11/06/14 | KAW   | NA       |
| CD589LCS-P(0) | 11/06/14 | KAW   | NA       |
| CD590MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD591MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD592MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD593MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD594MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD595MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD596MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD597MDL-P(0) | 11/06/14 | KAW   | NA       |
| CD809PB-P(0)  | 11/06/14 | KAW   | NA       |
| CD810LCS-P(0) | 11/06/14 | KAW   | NA       |
| M8168-P(0)    | 11/06/14 | KAW   | NA       |
| M8168DUP-P(0) | 11/06/14 | KAW   | NA       |
| M8170-P(0)    | 11/06/14 | KAW   | NA       |
| M8170MS-P(0)  | 11/06/14 | KAW   | NA       |
| M8170MSD-P(0) | 11/06/14 | KAW   | NA       |
| M8171-P1(0)   | 11/06/14 | KAW   | NA       |

## BATTELLE - DUXBURY OPERATIONS EXTRACT CLEANUP FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study  
SED, TISSUE**

| Extract Id | Date     | Init. | Comments |
|------------|----------|-------|----------|
| M8388-P(0) | 11/06/14 | KAW   | NA       |

**Cleanup:**

Copper Cleanup

**Reagents:**

| Name                         | Expires  | Lot No    | Procedure                                  |
|------------------------------|----------|-----------|--|
| Copper, granular, 10-40 mesh | 10/22/19 | MKBT0084V | NA   |
| Activated Copper             | 11/11/14 | MKBT0084V | Activated according to Cleanup SOP (5-328) |





The Business of Innovation

**BATTELLE - DUXBURY OPERATIONS  
COLUMN FRACTIONATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Extract Id    | Date     | Init. | Sample Specific Comments |
|---------------|----------|-------|--------------------------|
| CD588PB-P(0)  | 11/06/14 | KAW   | NA                       |
| CD589LCS-P(0) | 11/06/14 | KAW   | NA                       |
| CD590MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD591MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD592MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD593MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD594MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD595MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD596MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD597MDL-P(0) | 11/06/14 | KAW   | NA                       |
| CD809PB-P(0)  | 11/06/14 | KAW   | NA                       |
| CD810LCS-P(0) | 11/06/14 | KAW   | NA                       |
| M8168-P(0)    | 11/06/14 | KAW   | NA                       |
| M8168DUP-P(0) | 11/06/14 | KAW   | NA                       |
| M8170-P(0)    | 11/06/14 | KAW   | NA                       |
| M8170MS-P(0)  | 11/06/14 | KAW   | NA                       |
| M8170MSD-P(0) | 11/06/14 | KAW   | NA                       |

## BATTELLE - DUXBURY OPERATIONS COLUMN FRACTIONATION FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Extract Id  | Date     | Init. | Sample Specific Comments |
|-------------|----------|-------|--------------------------|
| M8171-P1(0) | 11/06/14 | KAW   | NA                       |
| M8388-P(0)  | 11/06/14 | KAW   | NA                       |

**Column Diameter:** 13 mm **Procedure Comment:**

**Elution Volume:** 15 mL

### Solvents

| Name            | Lot No      |
|-----------------|-------------|
| DCM cycletainer | 00000093995 |
| Hexane          | 0000078260  |
| Hexane          | 0000088997  |

### Reagents

| Weight g | Name     | Expires  | Lot No         | Procedure  |
|----------|----------|----------|----------------|--|
| 3.00     | Florisil | 11/06/14 | 801139-1991484 | Baked at 110 °C for more than 24 hours (SPE columns not baked) |
| 18.00    | Florisil | 11/06/14 | BCBN3313V      | Baked at 110 °C for more than 24 hours (SPE columns not baked) |

### Fractions

**BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Extract    |   | *  | Extract Date          | Source  |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|-----------------------|---------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                       | Name    | # |                          |               |               |                |               |
| CD588PB-P  | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD589LCS-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD590MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD591MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD592MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD593MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD594MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD595MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD596MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD597MDL-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD809PB-P  | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| CD810LCS-P | 0 | -- | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8168-P    | 0 | C  | 11/3/2014 10:30:00 AM | NA      |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8168-P    | 2 | -- | 11/10/2014 9:41:00 AM | M8168-P | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/10/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0497

USACE-NAE New Bedford Harbor LTM Study

SED, TISSUE

| Extract      |   | *  | Extract Date          | Source       |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|--------------|---|----|-----------------------|--------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name         | # |    |                       | Name         | # |                          |               |               |                |               |
| M8168-P-D    | 3 | C  | 11/10/2014 9:41:00 AM | M8168-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/10/14 SG   |
| M8168-P-D    | 4 | -- | 11/10/2014 9:54:00 AM | M8168-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/10/14 SG   |
| M8168-P-D    | 5 | -- | 11/10/2014 9:54:00 AM | M8168-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/10/14 SG   |
| M8168DUP-P   | 0 | C  | 11/3/2014 10:30:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8168DUP-P   | 2 | -- | 11/10/2014 9:41:00 AM | M8168DUP-P   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/10/14 SG   |
| M8168DUP-P-D | 3 | C  | 11/10/2014 9:41:00 AM | M8168DUP-P   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/10/14 SG   |
| M8168DUP-P-D | 4 | -- | 11/10/2014 9:54:00 AM | M8168DUP-P-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/10/14 SG   |
| M8168DUP-P-D | 5 | -- | 11/10/2014 9:54:00 AM | M8168DUP-P-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/10/14 SG   |
| M8170-P      | 0 | C  | 11/3/2014 10:30:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8170-P      | 2 | -- | 11/10/2014 9:41:00 AM | M8170-P      | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/10/14 SG   |
| M8170-P-D    | 3 | C  | 11/10/2014 9:41:00 AM | M8170-P      | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/10/14 SG   |
| M8170-P-D    | 4 | -- | 11/10/2014 9:54:00 AM | M8170-P-D    | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/10/14 SG   |
| M8170-P-D    | 5 | -- | 11/10/2014 9:54:00 AM | M8170-P-D    | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/10/14 SG   |
| M8170MS-P    | 0 | -- | 11/3/2014 10:30:00 AM | NA           |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed



The Business of Innovation

BATTELLE - DUXBURY OPERATIONS  
PREPARATION EXTRACT SPLIT FORM

Project Title(s)

USACE/NAE - New Bedford Harbor LTM Study

Project No.(s)

100053747

14-0497

USACE-NAE New Bedford Harbor LTM Study

SED, TISSUE

| Extract    |   | *  | Extract Date          | Source     |   | Initial Extract Vol (uL) | Extract Split | Extract Split | Total Dilution | Date/Initials |
|------------|---|----|-----------------------|------------|---|--------------------------|---------------|---------------|----------------|---------------|
| Name       | # |    |                       | Name       | # |                          |               |               |                |               |
| M8170MSD-P | 0 | -- | 11/3/2014 10:30:00 AM | NA         |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8171-P1   | 0 | C  | 11/3/2014 3:30:00 PM  | NA         |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8171-P1   | 2 | -- | 11/10/2014 9:41:00 AM | M8171-P1   | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/10/14 SG   |
| M8171-P1-D | 3 | C  | 11/10/2014 9:41:00 AM | M8171-P1   | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/10/14 SG   |
| M8171-P1-D | 4 | -- | 11/10/2014 9:54:00 AM | M8171-P1-D | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/10/14 SG   |
| M8171-P1-D | 5 | -- | 11/10/2014 9:54:00 AM | M8171-P1-D | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/10/14 SG   |
| M8388-P    | 0 | C  | 11/3/2014 10:30:00 AM | NA         |   | NA                       | NA            | 1.000         | 1.000          | 11/03/14 SG   |
| M8388-P    | 2 | -- | 11/10/2014 9:41:00 AM | M8388-P    | 0 | 1000                     | 950           | 1.053         | 1.053          | 11/10/14 SG   |
| M8388-P-D  | 3 | C  | 11/10/2014 9:41:00 AM | M8388-P    | 0 | 1000                     | 50            | 20.000        | 20.000         | 11/10/14 SG   |
| M8388-P-D  | 4 | -- | 11/10/2014 9:54:00 AM | M8388-P-D  | 3 | 1000                     | 950           | 1.053         | 21.053         | 11/10/14 SG   |
| M8388-P-D  | 5 | -- | 11/10/2014 9:54:00 AM | M8388-P-D  | 3 | 1000                     | 50            | 20.000        | 400.000        | 11/10/14 SG   |

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] \* [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] \* Prior Dilution Factor

\* - "C" = Extract is Consumed

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

**(N/A Fraction)**

| Extract Id      | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm. (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution* | Date Spiked/ Spiked By | Witn'd By |
|-----------------|-----------------|------------|---------|------------|----------|---------------------|-----------------|------------------------|-----------|
| CD588PB-P(0)    | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/10/14 SG            | KAW       |
| CD589LCS-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD590MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD591MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD592MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD593MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD594MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD595MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD596MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD597MDL-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD809PB-P(0)    | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| CD810LCS-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| M8168-P(0)      | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| M8168-P-D(3)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/10/14 SG            | KAW       |
| M8168-P-D(5)    | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/10/14 SG            | KAW       |
| M8168DUP-P(0)   | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |
| M8168DUP-P-D(3) | 905             | 95         | IE11    | 100        | 1        | 1000                | 20.000          | 11/10/14 SG            | KAW       |
| M8168DUP-P-D(5) | 905             | 95         | IE11    | 100        | 1        | 1000                | 400.000         | 11/10/14 SG            | KAW       |
| M8170-P(0)      | 900             | 100        | IE11    | 100        | 4        | 1000                | 1.000           | 11/07/14 SG            | KAW       |

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS INTERNAL STANDARD SPIKING FORM

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

**(N/A Fraction)**

| Extract Id    | Extr. Vol. (uL) | Added (uL) | Std. Id | Accm . (uL) | Vial No. | Pre Inj. Vol. (uL)^ | Final Dilution * | Date Spiked/ Spiked By | Witn'd By |
|---------------|-----------------|------------|---------|-------------|----------|---------------------|------------------|------------------------|-----------|
| M8170-P-D(3)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 11/10/14 SG            | KAW       |
| M8170-P-D(5)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/10/14 SG            | KAW       |
| M8170MS-P(0)  | 900             | 100        | IE11    | 100         | 4        | 1000                | 1.000            | 11/07/14 SG            | KAW       |
| M8170MSD-P(0) | 900             | 100        | IE11    | 100         | 4        | 1000                | 1.000            | 11/07/14 SG            | KAW       |
| M8171-P1(0)   | 900             | 100        | IE11    | 100         | 4        | 1000                | 1.000            | 11/07/14 SG            | KAW       |
| M8171-P1-D(3) | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 11/10/14 SG            | KAW       |
| M8171-P1-D(5) | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/10/14 SG            | KAW       |
| M8388-P(0)    | 900             | 100        | IE11    | 100         | 4        | 1000                | 1.000            | 11/07/14 SG            | KAW       |
| M8388-P-D(3)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 20.000           | 11/10/14 SG            | KAW       |
| M8388-P-D(5)  | 905             | 95         | IE11    | 100         | 1        | 1000                | 400.000          | 11/10/14 SG            | KAW       |

Syringes/Pipettes Used:

\* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.

## BATTELLE - DUXBURY OPERATIONS SAMPLE SPECIFIC COMMENTS

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

| Sample ID: | Comment:   | Date/Initials: |
|------------|--|----------------|
| CD588PB-P  | NA   | NA             |
| CD589LCS-P | NA   | NA             |
| CD590MDL-P | NA   | NA             |
| CD591MDL-P | NA   | NA             |
| CD592MDL-P | NA   | NA             |
| CD593MDL-P | NA   | NA             |
| CD594MDL-P | NA   | NA             |
| CD595MDL-P | NA   | NA             |
| CD596MDL-P | NA   | NA             |
| CD597MDL-P | NA   | NA             |
| CD809PB-P  | additional QC sample added to batch on 11/3/2014 because project manager was consulted and decided that another PB was needed for authentic samples due to different spike amounts.  | 11/03/14 SG    |
| CD810LCS-P | additional QC sample added to batch on 11/3/2014 because project manager was consulted and decided that another LCS was needed for authentic samples due to different spike amounts. | 11/03/14 SG    |
| M8168-P    | NA   | NA             |
| M8168DUP-P | NA   | NA             |
| M8170-P    | NA   | NA             |
| M8170MS-P  | NA   | NA             |
| M8170MSD-P | NA   | NA             |
| M8171-P1   | NA   | NA             |
| M8388-P    | NA   | NA             |



## BATTELLE - DUXBURY OPERATIONS EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study**

**SED, TISSUE**

|   |   |
|---|---|
| <b>Purpose:</b> GC/ECD TRANSFER                   | <b>Last Activity:</b> Prep->Inst              |
| <b>Relinquished On/By:</b> Nov 10 2014 11:38AM SG | <b>Received On/By:</b> Nov 10 2014 11:38AM RR |
| <b>Relinquished From:</b>                         | <b>Received Location:</b> GC Laboratory: NA   |
| <b>Relinquish Comment:</b> NA                     | <b>Received Comment:</b> NA                   |

| No. | BDO-ID:         | PIV: | DF:    | Condition: | Custody Comment: |
|-----|-----------------|------|--------|------------|------------------|
| 1   | CD588PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 2   | CD589LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 3   | CD590MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 4   | CD591MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 5   | CD592MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 6   | CD593MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 7   | CD594MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 8   | CD595MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 9   | CD596MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 10  | CD597MDL-P(0)   | 1000 | 1      | Intact     | NA               |
| 11  | CD809PB-P(0)    | 1000 | 1      | Intact     | NA               |
| 12  | CD810LCS-P(0)   | 1000 | 1      | Intact     | NA               |
| 13  | M8168-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 14  | M8168-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 15  | M8168-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 16  | M8168DUP-P(2)   | 1000 | 1.053  | Intact     | NA               |
| 17  | M8168DUP-P-D(4) | 1000 | 21.053 | Intact     | NA               |
| 18  | M8168DUP-P-D(5) | 1000 | 400    | Intact     | NA               |
| 19  | M8170-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 20  | M8170-P-D(4)    | 1000 | 21.053 | Intact     | NA               |
| 21  | M8170-P-D(5)    | 1000 | 400    | Intact     | NA               |
| 22  | M8170MS-P(0)    | 1000 | 1      | Intact     | NA               |
| 23  | M8170MSD-P(0)   | 1000 | 1      | Intact     | NA               |
| 24  | M8171-P1(2)     | 1000 | 1.053  | Intact     | NA               |
| 25  | M8171-P1-D(4)   | 1000 | 21.053 | Intact     | NA               |
| 26  | M8171-P1-D(5)   | 1000 | 400    | Intact     | NA               |
| 27  | M8388-P(2)      | 1000 | 1.053  | Intact     | NA               |
| 28  | M8388-P-D(4)    | 1000 | 21.053 | Intact     | NA               |

**BATTELLE - DUXBURY OPERATIONS  
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study  
SED, TISSUE**

|                        |              |      |     |        |    |
|------------------------|--------------|------|-----|--------|----|
| 29                     | M8388-P-D(5) | 1000 | 400 | Intact | NA |
| <b>Total Extracts:</b> |              | 29   |     |        |    |

**BATTELLE - DUXBURY OPERATIONS  
MISCELLANEOUS DOCUMENTATION FORM**

**Project Title(s)**

USACE/NAE - New Bedford Harbor LTM Study

**Project No.(s)**

100053747

**14-0497**

**USACE-NAE New Bedford Harbor LTM Study  
SED, TISSUE**

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Entered By:

On:

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Task Leader Approval:

On:

Supervisor Approval:

On:

PM Approval:

On:

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## INJECTION LOG

Directory I:\M\DATA\SM0417\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id     | Miscellaneous             | Injected                       |
|-----|-----|---------|---------------|---------------------------|--------------------------------|
| 1   | 1   | M7203.D | HEXANE        |                           | 10-20-2014 05:18 PM            |
| 2   | 2   | M7204.D | HF94          |                           | 10-20-2014 06:02 PM            |
| 3   | 3   | M7205.D | IE03          |                           | 10-20-2014 06:46 PM            |
| 4   | 4   | M7206.D | IE04          | Level not used.           | <del>10-20-2014 07:31 PM</del> |
| 5   | 5   | M7207.D | IE05          |                           | 10-20-2014 08:16 PM            |
| 6   | 6   | M7208.D | IE06          | RR 11/18/14               | 10-20-2014 09:00 PM            |
| 7   | 7   | M7209.D | IE07          |                           | 10-20-2014 09:45 PM            |
| 8   | 8   | M7210.D | IE08          |                           | 10-20-2014 10:29 PM            |
| 9   | 9   | M7211.D | IE09          | Level not used.           | <del>10-20-2014 11:14 PM</del> |
| 10  | 10  | M7212.D | IE10          |                           | 10-20-2014 11:58 PM            |
| 11  | 11  | M7213.D | HY06 ICC      |                           | 10-21-2014 12:43 AM            |
| 12  | 12  | M7214.D | HF94          |                           | 10-21-2014 01:28 AM            |
| 13  | 13  | M7215.D | IE08 mid      |                           | 10-21-2014 02:12 AM            |
| 14  | 14  | M7216.D | CD598PB-P(3)  | Procedural Blank 5-128 14 | 10-21-2014 02:57 AM            |
| 15  | 15  | M7217.D | CD599LCS-P(5) | Laboratory Control Sample | 10-21-2014 03:42 AM            |
| 16  | 16  | M7218.D | CD600SRM-P(5) | Standard Reference Materi | 10-21-2014 04:26 AM            |
| 17  | 17  | M7219.D | M7754-P(5)    | B537PreMnA 5-128 14-0498  | 10-21-2014 05:11 AM            |
| 18  | 18  | M7220.D | M7755-P(5)    | B537PreMnB 5-128 14-0498  | 10-21-2014 05:55 AM            |
| 19  | 19  | M7221.D | M7756-P(5)    | B537PreMnC 5-128 14-0498  | 10-21-2014 06:40 AM            |
| 20  | 20  | M7222.D | M7756MS-P(5)  | Matrix Spike of B537PreMn | 10-21-2014 07:25 AM            |
| 21  | 21  | M7223.D | M7756MSD-P(5) | Matrix Spike Duplicate of | 10-21-2014 08:09 AM            |
| 22  | 22  | M7224.D | M7757-P(5)    | B537R01MnA 5-128 14-0498  | 10-21-2014 08:54 AM            |
| 23  | 23  | M7225.D | M7758-P(5)    | B537R01MnB 5-128 14-0498  | 10-21-2014 09:38 AM            |
| 24  | 24  | M7226.D | HF94          |                           | 10-21-2014 10:22 AM            |
| 25  | 25  | M7227.D | IE08 mid      |                           | 10-21-2014 11:07 AM            |
| 26  | 26  | M7228.D | M7759-P(5)    | B537R01MnC 5-128 14-0498  | 10-21-2014 11:52 AM            |
| 27  | 27  | M7229.D | M7760-P(5)    | B537R01MnD 5-128 14-0498  | 10-21-2014 12:36 PM            |
| 28  | 28  | M7230.D | M7761-P(5)    | B537R01MnE 5-128 14-0498  | 10-21-2014 01:21 PM            |
| 29  | 29  | M7231.D | M7762-P(5)    | B537S01MnA 5-128 14-0498  | 10-21-2014 02:05 PM            |
| 30  | 30  | M7232.D | M7763-P(5)    | B537S01MnB 5-128 14-0498  | 10-21-2014 02:50 PM            |
| 31  | 31  | M7233.D | M7764-P(5)    | B537S01MnC 5-128 14-0498  | 10-21-2014 03:35 PM            |
| 32  | 32  | M7234.D | M7765-P(5)    | B537S01MnD 5-128 14-0498  | 10-21-2014 04:19 PM            |
| 33  | 33  | M7235.D | M7766-P(5)    | B537S01MnE 5-128 14-0498  | 10-21-2014 05:04 PM            |
| 34  | 34  | M7236.D | M7767-P(5)    | B537S02MnA 5-128 14-0498  | 10-21-2014 05:48 PM            |
| 35  | 35  | M7237.D | M7768-P(5)    | B537S02MnB 5-128 14-0498  | 10-21-2014 06:33 PM            |
| 36  | 36  | M7238.D | HF94          |                           | 10-21-2014 07:17 PM            |
| 37  | 37  | M7239.D | IE07 mid      |                           | 10-21-2014 08:02 PM            |
| 38  | 38  | M7240.D | M7768DUP-P(5) | Lab Duplicate of B537S02M | 10-21-2014 08:46 PM            |
| 39  | 39  | M7241.D | M7769-P(5)    | B537S02MnC 5-128 14-0498  | 10-21-2014 09:31 PM            |
| 40  | 40  | M7242.D | M7770-P(5)    | B537S02MnD 5-128 14-0498  | 10-21-2014 10:16 PM            |
| 41  | 41  | M7243.D | M7771-P(5)    | B537S02MnE 5-128 14-0498  | 10-21-2014 11:00 PM            |
| 42  | 42  | M7244.D | CD669PB-P(0)  | Procedural Blank 5-128 14 | 10-21-2014 11:45 PM            |
| 43  | 43  | M7245.D | CD670LCS-P(0) | Laboratory Control Sample | 10-22-2014 12:29 AM            |
| 44  | 44  | M7246.D | CD671LCS-P(0) | Laboratory Control Sample | 10-22-2014 01:14 AM            |
| 45  | 45  | M7247.D | M8926-P(0)    | FLD20141014OSHCO-7-14-7E  | 10-22-2014 01:58 AM            |
| 46  | 46  | M7248.D | M8928-P(0)    | FSW20141014OSHCO-7-14-1 5 | 10-22-2014 02:43 AM            |
| 47  | 47  | M7249.D | HF94          |                           | 10-22-2014 03:28 AM            |
| 48  | 48  | M7250.D | IE07 mid      |                           | 10-22-2014 04:12 AM            |

INJECTION LOG

Directory I:\M\DATA\SM0424\ Highlighted cells reported.

| Lin | BTL | File    | Sample Id       | Miscellaneous             | Injected            |
|-----|-----|---------|-----------------|---------------------------|---------------------|
| 1   | 1   | M7580.D | HEXANE          |                           | 11-14-2014 03:59 PM |
| 2   | 2   | M7581.D | IE07 mid        |                           | 11-14-2014 04:44 PM |
| 3   | 3   | M7582.D | CD588PB-P(0)    | Procedural Blank. Sodium  | 11-14-2014 05:28 PM |
| 4   | 4   | M7583.D | CD589LCS-P(0)   | Laboratory Control Sample | 11-14-2014 06:13 PM |
| 5   | 5   | M7584.D | CD590MDL-P(0)   | Method Detection Limits.  | 11-14-2014 06:57 PM |
| 6   | 6   | M7585.D | CD591MDL-P(0)   | Method Detection Limits.  | 11-14-2014 07:42 PM |
| 7   | 7   | M7586.D | CD592MDL-P(0)   | Method Detection Limits.  | 11-14-2014 08:27 PM |
| 8   | 8   | M7587.D | CD593MDL-P(0)   | Method Detection Limits.  | 11-14-2014 09:11 PM |
| 9   | 9   | M7588.D | CD594MDL-P(0)   | Method Detection Limits.  | 11-14-2014 09:56 PM |
| 10  | 10  | M7589.D | CD595MDL-P(0)   | Method Detection Limits.  | 11-14-2014 10:40 PM |
| 11  | 11  | M7590.D | CD596MDL-P(0)   | Method Detection Limits.  | 11-14-2014 11:25 PM |
| 12  | 12  | M7591.D | CD597MDL-P(0)   | Method Detection Limits.  | 11-15-2014 12:09 AM |
| 13  | 13  | M7592.D | IE08 mid        |                           | 11-15-2014 12:54 AM |
| 14  | 14  | M7593.D | CD809PB-P(0)    | Procedural Blank. Sample  | 11-15-2014 01:38 AM |
| 15  | 15  | M7594.D | CD810LCS-P(0)   | Laboratory Control Sample | 11-15-2014 02:22 AM |
| 16  | 16  | M7595.D | M8168-P(2)      | NBH14-0073 5-128 14-0497  | 11-15-2014 03:07 AM |
| 17  | 17  | M7596.D | M8168DUP-P(2)   | Lab Duplicate of NBH14-00 | 11-15-2014 03:51 AM |
| 18  | 18  | M7597.D | M8170-P(2)      | NBH14-0081 5-128 14-0497  | 11-15-2014 04:36 AM |
| 19  | 19  | M7598.D | M8170MS-P(0)    | Matrix Spike of NBH14-008 | 11-15-2014 05:20 AM |
| 20  | 20  | M7599.D | M8170MSD-P(0)   | Matrix Spike Duplicate of | 11-15-2014 06:05 AM |
| 21  | 21  | M7600.D | M8171-P1(2)     | NBH14-0085 5-128 14-0497  | 11-15-2014 06:49 AM |
| 22  | 22  | M7601.D | M8388-P(2)      | NBH14-0105 5-128 14-0497  | 11-15-2014 07:34 AM |
| 23  | 23  | M7602.D | M8168-P-D(4)    | NBH14-0073 5-128 14-0497  | 11-15-2014 08:18 AM |
| 24  | 24  | M7603.D | IE07 mid        |                           | 11-15-2014 09:03 AM |
| 25  | 25  | M7604.D | M8168DUP-P-D(4) | Lab Duplicate of NBH14-00 | 11-15-2014 09:47 AM |
| 26  | 26  | M7605.D | M8170-P-D(4)    | NBH14-0081 5-128 14-0497  | 11-15-2014 10:31 AM |
| 27  | 27  | M7606.D | M8171-P-D(4)    |                           | 11-15-2014 11:16 AM |
| 28  | 28  | M7607.D | M8388-P-D(4)    | NBH14-0105 5-128 14-0497  | 11-15-2014 12:01 PM |
| 29  | 29  | M7608.D | M8168-P-D(4)    | NBH14-0073 5-128 14-0497  | 11-15-2014 12:45 PM |
| 30  | 30  | M7609.D | M8168DUP-P-D(4) |                           | 11-15-2014 01:29 PM |
| 31  | 31  | M7610.D | M8170-P-D(4)    |                           | 11-15-2014 02:14 PM |
| 32  | 32  | M7611.D | M8171-P-D(4)    | NBH14-0085 5-128 14-0497  | 11-15-2014 02:58 PM |
| 33  | 33  | M7612.D | M8388-P-D(4)    |                           | 11-15-2014 03:43 PM |
| 34  | 34  | M7613.D | M8363-P-D(5)    | NBH14-0232 5-128 14-0493  | 11-15-2014 04:28 PM |
| 35  | 35  | M7614.D | IE08 mid        |                           | 11-15-2014 05:12 PM |
| 36  | 36  | M7615.D | IF27            | AROCLOR 1221              | 11-15-2014 05:57 PM |
| 37  | 37  | M7616.D | IF28            | AROCLOR 1232              | 11-15-2014 06:41 PM |
| 38  | 38  | M7617.D | IF29            | AROCLOR 1242              | 11-15-2014 07:26 PM |
| 39  | 39  | M7618.D | IF30            | AROCLOR 1248              | 11-15-2014 08:10 PM |
| 40  | 40  | M7619.D | IF31            | AROCLOR 1254              | 11-15-2014 08:54 PM |
| 41  | 41  | M7620.D | IB57            | AROCLOR 1262              | 11-15-2014 09:39 PM |
| 42  | 42  | M7621.D | IB58            | AROCLOR 1268              | 11-15-2014 10:23 PM |
| 43  | 43  | M7622.D | IF16            |                           | 11-15-2014 11:08 PM |
| 44  | 44  | M7623.D | IF17            |                           | 11-15-2014 11:52 PM |
| 45  | 45  | M7624.D | IF18            |                           | 11-16-2014 12:37 AM |
| 46  | 46  | M7625.D | IF19            |                           | 11-16-2014 01:21 AM |
| 47  | 47  | M7626.D | IF20            |                           | 11-16-2014 02:06 AM |
| 48  | 48  | M7627.D | IF21            |                           | 11-16-2014 02:50 AM |
| 49  | 49  | M7628.D | IF13 ICC        |                           | 11-16-2014 03:34 AM |
| 50  | 50  | M7629.D | CD899PB-P(3)    | Procedural Blank 5-128 14 | 11-16-2014 04:19 AM |
| 51  | 51  | M7630.D | CD900LCS-P(3)   | Laboratory Control Sample | 11-16-2014 05:03 AM |
| 52  | 52  | M7631.D | M9176-P(3)      | PMP-22-SW-VS 5-128 14-056 | 11-16-2014 05:48 AM |
| 53  | 53  | M7632.D | M9176MS-P(3)    | Matrix Spike of PMP-22-SW | 11-16-2014 06:32 AM |
| 54  | 54  | M7633.D | M9177-P(3)      | PMP-23-SW-VS 5-128 14-056 | 11-16-2014 07:17 AM |
| 55  | 55  | M7634.D | M9177DUP-P(3)   | Lab Duplicate of PMP-23-S | 11-16-2014 08:01 AM |
| 56  | 56  | M7635.D | M9178-P(3)      | PMP-24-SW-VS 5-128 14-056 | 11-16-2014 08:46 AM |
| 57  | 57  | M7636.D | IF29            |                           | 11-16-2014 09:30 AM |
| 58  | 2   | M7637.D | IF19 mid        |                           | 11-17-2014 12:15 PM |
| 59  | 3   | M7638.D | M9176-P-D(5)    | PMP-22-SW-VS 5-128 14-056 | 11-17-2014 01:44 PM |
| 60  | 4   | M7639.D | M9177-P-D(7)    | PMP-23-SW-VS 5-128 14-056 | 11-17-2014 02:29 PM |
| 61  | 5   | M7640.D | M9177DUP-P-D(7) | Lab Duplicate of PMP-23-S | 11-17-2014 03:13 PM |

Dilutions not needed  
RR 11/25/14



## Calibration Response Factor Report

**Batch:** 14-0497      **Project Test Code:** Master 128(S)      RFs validated CRD 12/10/14  
**Data Set:** DP-14-0679      **SOP\_NO:** 5-128-13  
**Project Number:** 100053747      **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M      **Responses Via** Initial Calibration      **Last Updated** 11/14/2014 9:30:00 AM      **Title:** NBH  
**Instrument:** Inst. M      **Operator:** RR      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Type: | Column: | MAD:    | 1<br>IE03<br>M7205.D | 2<br>IE05<br>M7207.D | 3<br>IE06<br>M7208.D | 4<br>IE07<br>M7209.D | 5<br>IE08<br>M7210.D | 6<br>IE10<br>M7212.D | 7 | 8 | Curve Fit: | (A)      | (B)      | (C)     | Stat<br>(r^2/RSD): | Qual:   |  |
|-----|-----------|-------|---------|---------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---|---|------------|----------|----------|---------|--------------------|---------|--|
| 1   | Cl5(96)   | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 2   | Cl2(8)    | 1     | Y       | 1.02677 | 0.82499              | 0.74685              | 0.63118              | 0.55904              | 0.41512              | -                    | - | 6 | Q          | -0.05406 | 0.58100  | 0.02367 | 0.99968            |         |  |
| 3   | Cl3(18)   | 1     | Y       | 1.31210 | 1.10482              | 0.96661              | 0.78724              | 0.69070              | 0.50395              | -                    | - | 6 | Q          | -0.06844 | 0.71262  | 0.03558 | 0.99947            |         |  |
| 4   | Cl3(34)   | s     | 1       | Y       | 2.47273              | 1.36117              | 1.18217              | 1.03139              | 0.92191              | 0.71999              | - | - | 6          | Q        | -0.06938 | 0.92761 | 0.04587            | 0.99994 |  |
| 5   | Cl3(28)   | 1     | Y       | 1.88563 | 1.62148              | 1.53903              | 1.39969              | 1.26450              | 1.01381              | -                    | - | 6 | Q          | -0.09842 | 1.31978  | 0.03237 | 0.99986            |         |  |
| 6   | Cl4(52)   | 1     | Y       | 2.67460 | 1.50893              | 1.27188              | 1.06050              | 0.93014              | 0.70933              | -                    | - | 6 | Q          | -0.07364 | 0.92696  | 0.05816 | 0.99983            |         |  |
| 7   | Cl4(44)   | 1     | Y       | 1.96878 | 1.69047              | 1.60648              | 1.42175              | 1.25645              | 1.00372              | -                    | - | 6 | Q          | -0.09818 | 1.30598  | 0.04163 | 0.99973            |         |  |
| 8   | Cl4(66)   | 1     | Y       | 2.14003 | 1.91334              | 1.75148              | 1.60565              | 1.43266              | 1.15511              | -                    | - | 6 | Q          | -0.10876 | 1.49082  | 0.04098 | 0.99982            |         |  |
| 9   | Cl5(101)  | 1     | Y       | 1.87327 | 1.59373              | 1.70864              | 1.61385              | 1.42978              | 1.22422              | -                    | - | 6 | Q          | -0.08750 | 1.49635  | 0.02623 | 0.99975            |         |  |
| 10  | Cl6(161)  | I     | 1       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 11  | Cl6(152)  | s     | 1       | Y       | 1.02184              | 0.73169              | 0.67623              | 0.59438              | 0.54889              | 0.47996              | - | - | 6          | Q        | -0.02339 | 0.54921 | 0.01882            | 0.99992 |  |
| 12  | Cl5(118)  | 1     | Y       | 1.02402 | 0.91463              | 0.85020              | 0.75415              | 0.68354              | 0.58350              | -                    | - | 6 | Q          | -0.03737 | 0.69686  | 0.02122 | 0.99982            |         |  |
| 13  | Cl6(153)  | 1     | Y       | 0.88266 | 0.81935              | 0.60192              | 0.77537              | 0.66030              | 0.59647              | -                    | - | 6 | Q          | -0.02991 | 0.69018  | 0.00733 | 0.99932            |         |  |
| 14  | Cl5(105)  | 1     | Y       | 1.20312 | 1.04021              | 0.99965              | 0.96015              | 0.82296              | 0.65909              | -                    | - | 6 | Q          | -0.06789 | 0.87004  | 0.02177 | 0.99963            |         |  |
| 15  | Cl6(138)  | 1     | Y       | 1.22541 | 1.06675              | 1.00587              | 0.91669              | 0.84817              | 0.76297              | -                    | - | 6 | Q          | -0.03117 | 0.85646  | 0.02109 | 0.99991            |         |  |
| 16  | Cl7(187)  | 1     | Y       | 1.07415 | 0.94434              | 0.88498              | 0.79082              | 0.74346              | 0.66512              | -                    | - | 6 | Q          | -0.02786 | 0.74881  | 0.01846 | 0.99992            |         |  |
| 17  | Cl6(128)  | 1     | Y       | 1.16100 | 0.91667              | 0.89359              | 0.85607              | 0.84318              | 0.73247              | -                    | - | 6 | Q          | -0.04270 | 0.86786  | 0.00587 | 0.99999            |         |  |
| 18  | Cl7(180)  | 1     | Y       | 1.23170 | 1.08198              | 0.99753              | 0.93689              | 0.88497              | 0.82624              | -                    | - | 6 | Q          | -0.02031 | 0.88592  | 0.01772 | 0.99996            |         |  |
| 19  | Cl7(170)  | 1     | Y       | 1.33635 | 1.19973              | 1.11853              | 1.05917              | 1.00487              | 0.94111              | -                    | - | 6 | Q          | -0.02267 | 1.00845  | 0.01743 | 0.99997            |         |  |
| 20  | Cl8(195)  | 1     | Y       | 1.24821 | 1.10061              | 1.05076              | 0.99234              | 0.94476              | 0.89153              | -                    | - | 6 | Q          | -0.01887 | 0.94735  | 0.01528 | 0.99997            |         |  |
| 21  | Cl9(206)  | 1     | Y       | 1.18038 | 1.03661              | 0.99467              | 0.96457              | 0.91081              | 0.85789              | -                    | - | 6 | Q          | -0.02022 | 0.91869  | 0.01268 | 0.99997            |         |  |
| 22  | Cl10(209) | 1     | Y       | 0.99002 | 0.86426              | 0.82007              | 0.78889              | 0.73849              | 0.67758              | -                    | - | 6 | Q          | -0.02343 | 0.74907  | 0.01198 | 0.99996            |         |  |
| 23  | Signal    | 2     | -       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 24  | Cl5(96)   | I     | 2       | -       | -                    | -                    | -                    | -                    | -                    | -                    | - | - | -          | -        | -        | -       | -                  | -       |  |
| 25  | Cl2(8)    | 2     | Y       | 0.94637 | 0.83650              | 0.76620              | 0.67202              | 0.62199              | 0.48595              | -                    | - | 6 | Q          | -0.05185 | 0.64681  | 0.01712 | 0.99988            |         |  |
| 26  | Cl3(18)   | 2     | Y       | 1.39241 | 1.13741              | 1.00550              | 0.76551              | 0.70491              | 0.54182              | -                    | - | 6 | Q          | -0.05533 | 0.70768  | 0.03799 | 0.99943            |         |  |
| 27  | Cl3(34)   | s     | 2       | Y       | 2.23518              | 1.39531              | 1.20146              | 1.04748              | 0.98379              | 0.79730              | - | - | 6          | Q        | -0.06315 | 0.98749 | 0.03800            | 0.99996 |  |
| 28  | Cl3(28)   | 2     | Y       | 2.05612 | 1.73008              | 1.59254              | 1.42520              | 1.36560              | 1.12979              | -                    | - | 6 | Q          | -0.08759 | 1.40224  | 0.02866 | 0.99996            |         |  |
| 29  | Cl4(52)   | 2     | Y       | 1.32543 | 1.01634              | 1.04226              | 0.82635              | 0.80598              | 0.62728              | -                    | - | 6 | Q          | -0.06549 | 0.83027  | 0.02172 | 0.99971            |         |  |
| 30  | Cl4(44)   | 2     | Y       | 2.26696 | 1.68554              | 1.62828              | 1.44775              | 1.40139              | 1.13801              | -                    | - | 6 | Q          | -0.09853 | 1.44647  | 0.02603 | 0.99996            |         |  |

## Calibration Response Factor Report

**Batch:** 14-0497                      **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0679              **SOP\_NO:** 5-128-13  
**Project Number:** 100053747        **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M        **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte:  | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | (A)      | (B)     | (C)     | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|-----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|----------|---------|---------|-----------------------------|-------|
|     |           |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |   |   | Levels:    |          |         |         |                             |       |
|     |           |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D |   |   |            |          |         |         |                             |       |
| 31  | Cl4(66)   |              | Y       | 2.28150 | 1.94181 | 1.76289 | 1.65364 | 1.54066 | 1.31516 | - | - | 6 Q        | -0.08582 | 1.58007 | 0.03256 | 0.99996                     |       |
| 32  | Cl5(101)  |              | Y       | 1.56754 | 1.17777 | 1.01633 | 1.01029 | 0.86410 | 0.96534 | - | - | 6 Q        | 0.04538  | 0.80794 | 0.03732 | 0.99968                     |       |
| 33  | Cl6(161)  | I            | -       | -       | -       | -       | -       | -       | -       | - | - | -          | -        | -       | -       | -                           |       |
| 34  | Cl6(152)  | S            | Y       | 0.69735 | 0.69234 | 0.57622 | 0.54795 | 0.47409 | 0.53607 | - | - | 6 Q        | 0.02791  | 0.43955 | 0.02156 | 0.99966                     |       |
| 35  | Cl5(118)  |              | Y       | 1.37021 | 0.63622 | 0.73177 | 0.70795 | 0.59017 | 0.57149 | - | - | 6 Q        | -0.00725 | 0.58778 | 0.02195 | 0.99943                     |       |
| 36  | Cl6(153)  |              | Y       | 1.07545 | 0.86632 | 0.79677 | 0.69128 | 0.63279 | 0.63321 | - | - | 6 Q        | 0.00578  | 0.60663 | 0.02539 | 0.99983                     |       |
| 37  | Cl5(105)  |              | Y       | 1.20126 | 1.01455 | 0.97857 | 0.92200 | 0.88341 | 0.94009 | - | - | 6 Q        | 0.02686  | 0.84840 | 0.01736 | 0.99996                     |       |
| 38  | Cl6(138)  |              | Y       | 0.67940 | 0.66822 | 0.62305 | 0.61544 | 0.61172 | 0.68345 | - | - | 6 Q        | 0.03117  | 0.58132 | 0.00625 | 0.99999                     |       |
| 39  | Cl7(187)  |              | Y       | 0.98245 | 0.80842 | 0.76633 | 0.69224 | 0.65688 | 0.68482 | - | - | 6 Q        | 0.01569  | 0.62875 | 0.01795 | 0.99993                     |       |
| 40  | Cl6(128)  |              | Y       | 1.29556 | 1.08544 | 1.04052 | 0.96581 | 0.92997 | 0.98492 | - | - | 6 Q        | 0.02722  | 0.89128 | 0.01958 | 0.99996                     |       |
| 41  | Cl7(180)  |              | Y       | 1.15986 | 0.95311 | 0.92022 | 0.85738 | 0.83699 | 0.89707 | - | - | 6 Q        | 0.02897  | 0.79906 | 0.01566 | 0.99998                     |       |
| 42  | Cl7(170)  |              | Y       | 1.17715 | 1.00944 | 0.98379 | 0.93732 | 0.91404 | 0.98260 | - | - | 6 Q        | 0.03138  | 0.87743 | 0.01381 | 0.99998                     |       |
| 43  | Cl8(195)  |              | Y       | 1.05313 | 0.90773 | 0.89676 | 0.85979 | 0.84072 | 0.91395 | - | - | 6 Q        | 0.03255  | 0.80577 | 0.01137 | 0.99998                     |       |
| 44  | Cl9(206)  |              | Y       | 0.94156 | 0.80488 | 0.80171 | 0.77400 | 0.75899 | 0.82033 | - | - | 6 Q        | 0.02717  | 0.73041 | 0.00888 | 0.99999                     |       |
| 45  | Cl10(209) |              | Y       | 0.76301 | 0.64557 | 0.63678 | 0.60540 | 0.58689 | 0.62005 | - | - | 6 Q        | 0.01548  | 0.56751 | 0.00888 | 0.99998                     |       |

## Calibration Response Factor Report

**Batch:** 14-0497                      **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0679                **SOP\_NO:** 5-128-13  
**Project Number:** 100053747            **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417C.M    **Responses Via** Initial Calibration    **Last Updated** 11/14/2014 9:30:00 AM    **Title:** NBH  
**Instrument:** Inst. M            **Operator:** RR                      **Path:** I:\M\DATA\MM0417C.M

| No: | Analyte: | Column Type: | Column: | 1       | 2       | 3       | 4       | 5       | 6       | 7 | 8 | Curve Fit: | Levels: | (A) | (B) | (C) | Stat (r <sup>2</sup> /RSD): | Qual: |
|-----|----------|--------------|---------|---------|---------|---------|---------|---------|---------|---|---|------------|---------|-----|-----|-----|-----------------------------|-------|
|     |          |              | MQO:    | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    | - | - |            |         |     |     |     |                             |       |
|     |          |              |         | M7205.D | M7207.D | M7208.D | M7209.D | M7210.D | M7212.D | - | - |            |         |     |     |     |                             |       |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:                 | Evaluate: |
|------------|-----------------|------------------------------|-----------|
| L          | Linear          | y = Bx + C                   | r-squared |
| RF         | Average RF      | y = Bx                       | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0                   | r-squared |
| Q          | Quadratic       | y = Ax <sup>2</sup> + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax <sup>2</sup> + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:                    |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|------------------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C                   |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx                       |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0                   |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax <sup>2</sup> + Bx + 0 |



## Calibration Response Factor Report

**Batch:** 14-0497 **Project Test Code:** Master 128(S)  
**Data Set:** DP-14-0679 **SOP\_NO:** 5-128-13 **RFs validated CRD 12/10/14**  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**File:** MM0417F.M **Responses Via** Initial Calibration **Last Updated** 12/5/2014 3:22:00 PM **Title:** NBH 101 only to compliment B method  
**Instrument:** Inst. M **Operator:** RR **Path:** I:\M\DATA\MM0417F.M

| No: | Analyte: | Type: | Column: | MQO:    | 1       | 2       | 3       | 4       | 5       | 6    | 7 | 8 | Curve Fit: | (A) | (B)      | (C)     | Stat (r^2/RSD): | Qual:   |
|-----|----------|-------|---------|---------|---------|---------|---------|---------|---------|------|---|---|------------|-----|----------|---------|-----------------|---------|
|     |          |       |         |         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10 |   |   | Levels:    |     |          |         |                 |         |
| 1   | Cl5(96)  | I     | 1       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -   | -        | -       | -               | -       |
| 2   | Cl5(101) | 1     | Y       | 2.10045 | 1.55920 | 1.68988 | 1.70104 | 1.46973 | 1.35619 | -    | - | - | 6          | Q   | -0.05296 | 1.51726 | 0.02697         | 0.99964 |
| 3   | Signal   | 2     | -       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -   | -        | -       | -               | -       |
| 4   | Cl5(96)  | I     | 2       | -       | -       | -       | -       | -       | -       | -    | - | - | -          | -   | -        | -       | -               | -       |
| 5   | Cl5(101) | 2     | Y       | 1.67256 | 2.33575 | 1.99479 | 1.98711 | 2.06595 | 1.40514 | -    | - | - | 6          | Q   | -0.26866 | 2.27420 | -0.02348        | 0.99966 |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean RSD:** -  
**Count RSD:** -

### Calibration Curve Definitions:

| Curve Fit: | Name:           | Description:      | Evaluate: |
|------------|-----------------|-------------------|-----------|
| L          | Linear          | y = Bx + C        | r-squared |
| RF         | Average RF      | y = Bx            | RSD       |
| L0         | Linear (0,0)    | y = Bx + 0        | r-squared |
| Q          | Quadratic       | y = Ax^2 + Bx + C | r-squared |
| Q0         | Quadratic (0,0) | y = Ax^2 + Bx + 0 | r-squared |

### Calibration Curve Acceptance Criteria:

| Curve Fit:      | Limit Mean(%): | Mean Qual: | Limit Ind.: | Ind. Qual: | Min Points: | Points Qual: | Comments:         |
|-----------------|----------------|------------|-------------|------------|-------------|--------------|-------------------|
| Linear          | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + C        |
| Average RF      | 15             | N          | 25          | N          | 5           | N            | y = Bx            |
| Linear (0,0)    | NA             | NA         | 0.995       | N          | 5           | N            | y = Bx + 0        |
| Quadratic       | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + C |
| Quadratic (0,0) | NA             | NA         | 0.995       | N          | 6           | N            | y = Ax^2 + Bx + 0 |

## Calibration Response Factor Report

**Batch:** 14-0497 **Project Test Code:** Master\_128(S)  
**Data Set:** DP-14-0679 **SOP\_NO:** 5-128-13  
**Project Number:** 100053747 **Project Name:** USACE/NAE - New Bedford Harbor LTM Study

**Method:** I:\M\DATA\MM0417C.M  
**Title:** NBH  
**Last Update:** Fri Nov 14 9:30 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:     | Quant Time:      | Acquisition Time:    |
|-----|------|--------------------------|------------------|------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Oct 28 9:02 2014 | Oct 28 8:27 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Oct 28 9:02 2014 | Oct 28 8:32 2014 | 20 Oct 2014 11:58 PM |

**Method:** I:\M\DATA\MM0417F.M  
**Title:** NBH 101 only to compliment B method  
**Last Update:** Fri Dec 05 15:22 2014  
**Response via:** Initial Calibration  
**Instrument:** Inst. M  
**Operator:** RR

| No: | ID:  | Path\File:               | Update Time:      | Quant Time:       | Acquisition Time:    |
|-----|------|--------------------------|-------------------|-------------------|----------------------|
| 1   | IE03 | I:\M\DATA\SM0417\M7205.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 6:47 PM  |
| 2   | IE05 | I:\M\DATA\SM0417\M7207.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 8:16 PM  |
| 3   | IE06 | I:\M\DATA\SM0417\M7208.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:01 PM  |
| 4   | IE07 | I:\M\DATA\SM0417\M7209.D | Dec 05 15:22 2014 | Dec 05 15:15 2014 | 20 Oct 2014 9:45 PM  |
| 5   | IE08 | I:\M\DATA\SM0417\M7210.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 10:29 PM |
| 6   | IE10 | I:\M\DATA\SM0417\M7212.D | Dec 05 15:21 2014 | Dec 05 15:15 2014 | 20 Oct 2014 11:58 PM |

## ICC Summary Report

**Batch:** 14-0497 **Data Set:** DP-14-0679  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0497 **Matrix:** SED, TISSUE  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04000 | 0.04325 | 8.3    |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04000 | 0.04152 | 3.8    |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.04104 | 2.5    |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04000 | 0.04097 | 2.5    |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04000 | 0.04111 | 2.8    |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04000 | 0.04166 | 4.3    |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04000 | 0.04028 | 0.8    |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04000 | 0.03706 | 7.3    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04020 | 0.04329 | 7.8    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04000 | 0.04151 | 3.8    |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04000 | 0.03933 | 1.8    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04000 | 0.03777 | 5.5    |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04000 | 0.04232 | 5.8    |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04000 | 0.04280 | 7.0    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04000 | 0.03934 | 1.8    |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04000 | 0.04137 | 3.5    |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04000 | 0.04068 | 1.8    |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04000 | 0.03988 | 0.3    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04000 | 0.03884 | 3.0    |
| 22  | Cl10(209) |       | 1    | Y    | 0.04000 | 0.03908 | 2.3    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04000 | 0.04248 | 6.3    |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04000 | 0.03989 | 0.3    |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.04170 | 4.3    |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04000 | 0.04093 | 2.3    |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04000 | 0.04057 | 1.5    |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04000 | 0.04125 | 3.3    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04000 | 0.04095 | 2.5    |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04000 | 0.03828 | 4.3    |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04020 | 0.04128 | 2.8    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04000 | 0.03951 | 1.3    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04000 | 0.04346 | 8.8    |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04000 | 0.04078 | 2.0    |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04000 | 0.04108 | 2.8    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04000 | 0.04269 | 6.8    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04000 | 0.04136 | 3.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04000 | 0.04073 | 1.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04000 | 0.04050 | 1.3    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04000 | 0.03956 | 1.0    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04000 | 0.03878 | 3.0    |

## ICC Summary Report

**Batch:** 14-0497 **Data Set:** DP-14-0679  
**Project Test Code:** Master\_128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project No:** 100053747  
**Batch:** 14-0497 **Matrix:** SED, TISSUE  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte:  | Type: | Col: | MQO:    | (ug/mL) | (ug/mL) | % Diff |
|-----|-----------|-------|------|---------|---------|---------|--------|
| 45  | Cl10(209) | 2     | Y    | 0.04000 | 0.03893 | 2.8     |        |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean PD:** 3.49  
**Follow ICAL:** PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## ICC Summary Report

Batch: 14-0497 Data Set: DP-14-0679  
Project Test Code: Master\_128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Project Name: USACE/NAE - New Bedford Harbor LTM Study Project No: 100053747  
Batch: 14-0497 Matrix: SED, TISSUE  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

### M7213.D

HY06

Acq'd: 10/21/2014 00:43

| No: | Analyte: | Type: | Col: | MQO: | (ug/mL) | (ug/mL) | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | C15(96)  | I     | 1    | -    |         |         |        |
| 2   | C15(101) |       | 1    | Y    | 0.04000 | 0.03858 | 3.5    |
| 4   | C15(96)  | I     | 2    | -    |         |         |        |
| 5   | C15(101) |       | 2    | Y    | 0.04000 | 0.03850 | 3.8    |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 3.65  
Follow ICAL: PASS

#### ICC Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Mean PD(%):       | <u>20</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0497 **Data Set:** DP-14-0679  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED, TISSUE  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | M7581.D          |        | M7603.D          |        |
|-----|-----------|-------|------|------|---------|------------------|--------|------------------|--------|
|     |           |       |      |      |         | MID              | % Diff | MID              | % Diff |
|     |           |       |      |      |         | 11/14/2014 16:44 |        | 11/15/2014 09:03 |        |
|     |           |       |      |      |         |                  |        |                  |        |
| 1   | Cl5(96)   | I     | 1    | -    |         |                  |        |                  |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.04008 | 0.03981          | -0.7   | 0.03830          | -4.4   |
| 3   | Cl3(18)   |       | 1    | Y    | 0.04016 | 0.04239          | 5.6    | 0.03844          | -4.3   |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.04000 | 0.03861          | -3.5   | 0.03865          | -3.4   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.04016 | 0.04015          | 0.0    | 0.03954          | -1.5   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.04004 | 0.03817          | -4.7   | 0.03849          | -3.9   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.04016 | 0.03958          | -1.4   | 0.03985          | -0.8   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.04008 | 0.03776          | -5.8   | 0.03790          | -5.4   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.04008 | 0.04186          | 4.4    | 0.04003          | -0.1   |
| 10  | Cl6(161)  | I     | 1    | -    |         |                  |        |                  |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.04016 | 0.03982          | -0.8   | 0.04190          | 4.3    |
| 12  | Cl5(118)  |       | 1    | Y    | 0.04016 | 0.03520          | -12.4  | 0.03705          | -7.7   |
| 13  | Cl6(153)  |       | 1    | Y    | 0.04016 | 0.03735          | -7.0   | 0.03798          | -5.4   |
| 14  | Cl5(105)  |       | 1    | Y    | 0.04012 | 0.03890          | -3.0   | 0.03748          | -6.6   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.04016 | 0.03909          | -2.7   | 0.03851          | -4.1   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.04016 | 0.04046          | 0.7    | 0.04050          | 0.8    |
| 17  | Cl6(128)  |       | 1    | Y    | 0.04016 | 0.04175          | 4.0    | 0.03678          | -8.4   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.04016 | 0.03976          | -1.0   | 0.03974          | -1.0   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.04016 | 0.03911          | -2.6   | 0.03944          | -1.8   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.04016 | 0.04021          | 0.1    | 0.04013          | -0.1   |
| 21  | Cl9(206)  |       | 1    | Y    | 0.04008 | 0.03982          | -0.6   | 0.03983          | -0.6   |
| 22  | Cl10(209) |       | 1    | Y    | 0.04016 | 0.04073          | 1.4    | 0.04018          | 0.0    |
| 24  | Cl5(96)   | I     | 2    | -    |         |                  |        |                  |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.04008 | 0.03829          | -4.5   | 0.03704          | -7.6   |
| 26  | Cl3(18)   |       | 2    | Y    | 0.04016 | 0.03835          | -4.5   | 0.03708          | -7.7   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.04000 | 0.03889          | -2.8   | 0.03850          | -3.8   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.04016 | 0.03596          | -10.5  | 0.03701          | -7.8   |
| 29  | Cl4(52)   |       | 2    | Y    | 0.04004 | 0.03985          | -0.5   | 0.03714          | -7.2   |
| 30  | Cl4(44)   |       | 2    | Y    | 0.04016 | 0.04018          | 0.0    | 0.03975          | -1.0   |
| 31  | Cl4(66)   |       | 2    | Y    | 0.04008 | 0.03809          | -5.0   | 0.04003          | -0.1   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.04008 | 0.03792          | -5.4   | 0.04194          | 4.6    |
| 33  | Cl6(161)  | I     | 2    | -    |         |                  |        |                  |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.04016 | 0.04175          | 4.0    | 0.04330          | 7.8    |
| 35  | Cl5(118)  |       | 2    | Y    | 0.04016 | 0.04316          | 7.5    | 0.04074          | 1.4    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.04016 | 0.04026          | 0.2    | 0.03906          | -2.7   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.04012 | 0.03743          | -6.7   | 0.03717          | -7.4   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.04016 | 0.04195          | 4.5    | 0.04201          | 4.6    |
| 39  | Cl7(187)  |       | 2    | Y    | 0.04016 | 0.04196          | 4.5    | 0.04144          | 3.2    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.04016 | 0.04015          | 0.0    | 0.04075          | 1.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.04016 | 0.04000          | -0.4   | 0.04167          | 3.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.04016 | 0.03960          | -1.4   | 0.04180          | 4.1    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.04016 | 0.04066          | 1.2    | 0.04195          | 4.5    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.04008 | 0.04151          | 3.6    | 0.04240          | 5.8    |

## CCV Summary Report

Batch: 14-0497 Data Set: DP-14-0679  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED, TISSUE  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

| No:   | Analyte:  | Type: | Col: | MQO: | CAL     | M7581.D     |        | M7603.D |        |
|---|-----------|-------|------|------|---------|-------------|--------|---------|--------|
|   |           |       |      |      |         | MID         | % Diff | MID     | % Diff |
| 45  | Cl10(209) |       | 2    | Y    | 0.04016 | 0.04293     | 6.9    | 0.04308 | 7.3    |
| MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences. |           |       |      |      |         | Mean PD:    | 3.4    | 4.0     |        |
|   |           |       |      |      |         | Time Check: | < 24   | < 24    |        |

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

**Batch:** 14-0497 **Data Set:** DP-14-0679  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED, TISSUE  
**Calibration File:** MM0417C.M **Last Updated:** 11/14/2014 9:30:00 AM

**M7592.D**

IE08 mid

11/15/2014 00:54

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)   | I     | 1    | -    |         |         |        |
| 2   | Cl2(8)    |       | 1    | Y    | 0.08016 | 0.06866 | -14.3  |
| 3   | Cl3(18)   |       | 1    | Y    | 0.08032 | 0.06986 | -13.0  |
| 4   | Cl3(34)   | s     | 1    | Y    | 0.08000 | 0.07751 | -3.1   |
| 5   | Cl3(28)   |       | 1    | Y    | 0.08032 | 0.07424 | -7.6   |
| 6   | Cl4(52)   |       | 1    | Y    | 0.08008 | 0.07255 | -9.4   |
| 7   | Cl4(44)   |       | 1    | Y    | 0.08032 | 0.07720 | -3.9   |
| 8   | Cl4(66)   |       | 1    | Y    | 0.08016 | 0.07340 | -8.4   |
| 9   | Cl5(101)  |       | 1    | Y    | 0.08016 | 0.08078 | 0.8    |
| 10  | Cl6(161)  | I     | 1    | -    |         |         |        |
| 11  | Cl6(152)  | s     | 1    | Y    | 0.08032 | 0.07873 | -2.0   |
| 12  | Cl5(118)  |       | 1    | Y    | 0.08032 | 0.06966 | -13.3  |
| 13  | Cl6(153)  |       | 1    | Y    | 0.08032 | 0.08183 | 1.9    |
| 14  | Cl5(105)  |       | 1    | Y    | 0.08024 | 0.08013 | -0.1   |
| 15  | Cl6(138)  |       | 1    | Y    | 0.08032 | 0.07636 | -4.9   |
| 16  | Cl7(187)  |       | 1    | Y    | 0.08032 | 0.07819 | -2.7   |
| 17  | Cl6(128)  |       | 1    | Y    | 0.08032 | 0.07553 | -6.0   |
| 18  | Cl7(180)  |       | 1    | Y    | 0.08032 | 0.07926 | -1.3   |
| 19  | Cl7(170)  |       | 1    | Y    | 0.08032 | 0.07915 | -1.5   |
| 20  | Cl8(195)  |       | 1    | Y    | 0.08032 | 0.08239 | 2.6    |
| 21  | Cl9(206)  |       | 1    | Y    | 0.08016 | 0.08312 | 3.7    |
| 22  | Cl10(209) |       | 1    | Y    | 0.08032 | 0.08448 | 5.2    |
| 24  | Cl5(96)   | I     | 2    | -    |         |         |        |
| 25  | Cl2(8)    |       | 2    | Y    | 0.08016 | 0.06939 | -13.4  |
| 26  | Cl3(18)   |       | 2    | Y    | 0.08032 | 0.07854 | -2.2   |
| 27  | Cl3(34)   | s     | 2    | Y    | 0.08000 | 0.07284 | -8.9   |
| 28  | Cl3(28)   |       | 2    | Y    | 0.08032 | 0.06965 | -13.3  |
| 29  | Cl4(52)   |       | 2    | Y    | 0.08008 | 0.07157 | -10.6  |
| 30  | Cl4(44)   |       | 2    | Y    | 0.08032 | 0.08647 | 7.7    |
| 31  | Cl4(66)   |       | 2    | Y    | 0.08016 | 0.07508 | -6.3   |
| 32  | Cl5(101)  |       | 2    | Y    | 0.08016 | 0.07668 | -4.3   |
| 33  | Cl6(161)  | I     | 2    | -    |         |         |        |
| 34  | Cl6(152)  | s     | 2    | Y    | 0.08032 | 0.07745 | -3.6   |
| 35  | Cl5(118)  |       | 2    | Y    | 0.08032 | 0.08127 | 1.2    |
| 36  | Cl6(153)  |       | 2    | Y    | 0.08032 | 0.07721 | -3.9   |
| 37  | Cl5(105)  |       | 2    | Y    | 0.08024 | 0.07631 | -4.9   |
| 38  | Cl6(138)  |       | 2    | Y    | 0.08032 | 0.08855 | 10.2   |
| 39  | Cl7(187)  |       | 2    | Y    | 0.08032 | 0.08160 | 1.6    |
| 40  | Cl6(128)  |       | 2    | Y    | 0.08032 | 0.08075 | 0.5    |
| 41  | Cl7(180)  |       | 2    | Y    | 0.08032 | 0.08334 | 3.8    |
| 42  | Cl7(170)  |       | 2    | Y    | 0.08032 | 0.08292 | 3.2    |
| 43  | Cl8(195)  |       | 2    | Y    | 0.08032 | 0.08547 | 6.4    |
| 44  | Cl9(206)  |       | 2    | Y    | 0.08016 | 0.08803 | 9.8    |



## CCV Summary Report

Batch: 14-0497 Data Set: DP-14-0679  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED, TISSUE  
Calibration File: MM0417C.M Last Updated: 11/14/2014 9:30:00 AM

M7592.D

IE08 mid

11/15/2014 00:54

| No: | Analyte:  | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|-----------|-------|------|------|---------|---------|--------|
| 45  | Cl10(209) |       | 2    | Y    | 0.08032 | 0.08972 | 11.7   |

MQO: Only compounds flagged with "Y" will be counted towards MQO exceedences.

Mean PD: 5.8  
Time Check: < 24

### CCV Acceptance Criteria:

|                   |           |       |          |
|-------------------|-----------|-------|----------|
| Frequency Hours:  | <u>24</u> | Qual: | <u>N</u> |
| Mean PD(%):       | <u>15</u> | Qual: | <u>N</u> |
| Individual PD(%): | <u>20</u> | Qual: | <u>N</u> |

## CCV Summary Report

Batch: 14-0497 Data Set: DP-14-0679  
Project Test Code: Master 128(S) SOP\_NO: 5-128-13  
Project Name: USACE/NAE - New Bedford Harbor LTM Study Project Number: 100053747

Matrix: SED, TISSUE  
Calibration File: MM0417F.M Last Updated: 12/5/2014 3:22:00 PM

| No:  | Analyte: | Type: | Col: | MQO: | CAL     | M7581.D            |                  | M7603.D        |        |
|--|----------|-------|------|------|---------|--------------------|------------------|----------------|--------|
|  |          |       |      |      |         | MID                | % Diff           | MID            | % Diff |
|  |          |       |      |      |         | IE07 mid           | IE07 mid         |                |        |
|  |          |       |      |      |         | 11/14/2014 16:44   | 11/15/2014 09:03 |                |        |
| 1  | Cl5(96)  | I     | 1    | -    |         |                    |                  |                |        |
| 2  | Cl5(101) |       | 1    | Y    | 0.04008 | 0.03970            | -0.9             | 0.03983        | -0.6   |
| 4  | Cl5(96)  | I     | 2    | -    |         |                    |                  |                |        |
| 5  | Cl5(101) |       | 2    | Y    | 0.04008 | 0.04080            | 1.8              | 0.04073        | 1.6    |
| <b>MQO:</b> Only compounds flagged with "Y" will be counted towards MQO exceedences. |          |       |      |      |         | <b>Mean PD:</b>    | <b>1.4</b>       | <b>1.1</b>     |        |
|  |          |       |      |      |         | <b>Time Check:</b> | <b>&lt; 24</b>   | <b>&lt; 24</b> |        |

### CCV Acceptance Criteria:

|                   |    |       |   |
|-------------------|----|-------|---|
| Frequency Hours:  | 24 | Qual: | N |
| Mean PD(%):       | 15 | Qual: | N |
| Individual PD(%): | 20 | Qual: | N |

## CCV Summary Report

**Batch:** 14-0497 **Data Set:** DP-14-0679  
**Project Test Code:** Master 128(S) **SOP\_NO:** 5-128-13  
**Project Name:** USACE/NAE - New Bedford Harbor LTM Study **Project Number:** 100053747

**Matrix:** SED, TISSUE  
**Calibration File:** MM0417F.M **Last Updated:** 12/5/2014 3:22:00 PM

**M7592.D**

IE08 mid

11/15/2014 00:54

| No: | Analyte: | Type: | Col: | MQO: | CAL     | MID     | % Diff |
|-----|----------|-------|------|------|---------|---------|--------|
| 1   | Cl5(96)  | I     | 1    | -    |         |         |        |
| 2   | Cl5(101) |       | 1    | Y    | 0.08016 | 0.07859 | -2.0   |
| 4   | Cl5(96)  | I     | 2    | -    |         |         |        |
| 5   | Cl5(101) |       | 2    | Y    | 0.08016 | 0.07255 | -9.5   |

**MQO:** Only compounds flagged with "Y" will be counted towards MQO exceedences.

**Mean PD:** **5.8**  
**Time Check:** **< 24**

### CCV Acceptance Criteria:

|                   |           |                       |
|-------------------|-----------|-----------------------|
| Frequency Hours:  | <u>24</u> | <b>Qual:</b> <u>N</u> |
| Mean PD(%):       | <u>15</u> | <b>Qual:</b> <u>N</u> |
| Individual PD(%): | <u>20</u> | <b>Qual:</b> <u>N</u> |

Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : NA  
 Total Cpnds : 45

IE03 =M7205.D IE05 =M7207.D IE06 =M7208.D IE07 =M7209.D  
 IE08 =M7210.D IE10 =M7212.D

| Compound         | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|------------------|---------|---------|---------|---------|---------|---------|
| 1 I C15(96)      | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2 C12(8)         | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3 C13(18)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 4 s C13(34)      | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 5 C13(28)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 6 C14(52)        | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 7 C14(44)        | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 8 C14(66)        | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 9 C15(101)       | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 10 I C16(161)    | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 11 s C16(152)    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 12 C15(118)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 13 C16(153)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 14 C15(105)      | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 15 C16(138)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 16 C17(187)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 17 C16(128)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 18 C17(180)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 19 C17(170)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 20 C18(195)      | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 21 C19(206)      | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 22 C110(209)     | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 23 Signal #2     | -----   | -----   | -----   | -----   | -----   | -----   |
| 24 I C15(96) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 25 C12(8) #2     | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 26 C13(18) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 27 s C13(34) #2  | 0.00240 | 0.01040 | 0.02000 | 0.04000 | 0.08000 | 0.32000 |
| 28 C13(28) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 29 C14(52) #2    | 0.00240 | 0.01041 | 0.02002 | 0.04004 | 0.08008 | 0.32032 |
| 30 C14(44) #2    | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 31 C14(66) #2    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 32 C15(101) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 33 I C16(161) #2 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 34 s C16(152) #2 | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 35 C15(118) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 36 C16(153) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 37 C15(105) #2   | 0.00241 | 0.01043 | 0.02006 | 0.04012 | 0.08024 | 0.32096 |
| 38 C16(138) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 39 C17(187) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 40 C16(128) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 41 C17(180) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 42 C17(170) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 43 C18(195) #2   | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |
| 44 C19(206) #2   | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 45 C110(209) #2  | 0.00241 | 0.01044 | 0.02008 | 0.04016 | 0.08032 | 0.32128 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015

Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
Last Updated : 9/8/2014 2:00:05 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
Last Updated : 9/8/2014 2:00:06 PM  
Create Date : Sep 8 2014 12:00AM KM  
Expire Date : 7/25/2015  
Approval Date: Not Approved  
Override Date: No Override

Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:28:41 2014  
 Response via : Initial Calibration  
 RIS/SIS Mult : 1.000  
 Total Cpnds : 5

IE03 =M7205.D      IE05 =M7207.D      IE06 =M7208.D      IE07 =M7209.D  
 IE08 =M7210.D      IE10 =M7212.D

| Compound |             | IE03    | IE05    | IE06    | IE07    | IE08    | IE10    |
|----------|-------------|---------|---------|---------|---------|---------|---------|
| 1 I      | C15(96)     | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 2        | C15(101)    | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |
| 3        | Signal #2   | -----   | -----   | -----   | -----   | -----   | -----   |
| 4 I      | C15(96) #2  | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 | 0.10000 |
| 5        | C15(101) #2 | 0.00240 | 0.01042 | 0.02004 | 0.04008 | 0.08016 | 0.32064 |

Standards Loaded From LIMS

Solution ID : IE03 - 5-128 ECD ICAL - L1  
 Last Updated : 9/8/2014 1:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE05 - 5-128 ECD ICAL - L3  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE06 - 5-128 ECD ICAL - L4  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE07 - 5-128 ECD ICAL - L5  
 Last Updated : 9/8/2014 2:00:05 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE08 - 5-128 ECD ICAL - L6  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Solution ID : IE10 - 5-128 ECD ICAL - L8  
 Last Updated : 9/8/2014 2:00:06 PM  
 Create Date : Sep 8 2014 12:00AM KM  
 Expire Date : 7/25/2015  
 Approval Date: Not Approved  
 Override Date: No Override

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc     | Units |
|-----------------------------|----------|-----------|----------|-------|
| Internal Standards          |          |           |          |       |
| 1) I C15(96)                | 17.39    | 2021371m  | 0.10000  | ng    |
| 10) I C16(161)              | 23.21    | 4304957   | 0.10000  | ng    |
| 24) I C15(96) #2            | 20.51    | 12822282m | 0.10000  | ng    |
| 33) I C16(161) #2           | 26.79    | 28199596m | 0.10000  | ng    |
| System Monitoring Compounds |          |           |          |       |
| 4) s C13(34)                | 13.40    | 119959m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 11) s C16(152)              | 20.48    | 106015    | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2            | 16.48    | 687843m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2           | 23.58    | 473925m   | BelowCal | ng    |
| Spiked Amount               | 0.0024   | Recovery  | =        | 0.00% |
| Target Compounds            |          |           |          |       |
| 2) C12(8)                   | 10.21    | 49812m    | BelowCal | ng    |
| 3) C13(18)                  | 12.13    | 63919m    | BelowCal | ng    |
| 5) C13(28)                  | 14.21    | 91859m    | BelowCal | ng    |
| 6) C14(52)                  | 15.84    | 129752    | BelowCal | ng    |
| 7) C14(44)                  | 16.70    | 95909     | BelowCal | ng    |
| 8) C14(66)                  | 18.60    | 103819m   | BelowCal | ng    |
| 9) C15(101)                 | 19.73    | 90878m    | BelowCal | ng    |
| 12) C15(118)                | 22.40    | 106241m   | BelowCal | ng    |
| 13) C16(153)                | 23.43 TW | 91576m    | BelowCal | ng    |
| 14) C15(105)                | 23.44 TW | 124823m   | BelowCal | ng    |
| 15) C16(138)                | 24.53    | 127136m   | BelowCal | ng    |
| 16) C17(187)                | 25.29    | 111442m   | BelowCal | ng    |
| 17) C16(128)                | 25.63    | 120454m   | BelowCal | ng    |
| 18) C17(180)                | 27.16    | 127788    | BelowCal | ng    |
| 19) C17(170)                | 27.96    | 138646m   | BelowCal | ng    |
| 20) C18(195)                | 29.04    | 129501    | BelowCal | ng    |
| 21) C19(206)                | 30.30    | 121956m   | BelowCal | ng    |
| 22) C110(209)               | 30.90    | 102714m   | BelowCal | ng    |
| 25) C12(8) #2               | 13.11    | 291232m   | BelowCal | ng    |
| 26) C13(18) #2              | 15.00    | 430280m   | BelowCal | ng    |
| 28) C13(28) #2              | 17.76    | 635375m   | BelowCal | ng    |
| 29) C14(52) #2              | 19.15f   | 407881m   | BelowCal | ng    |
| 30) C14(44) #2              | 19.96    | 700530m   | BelowCal | ng    |
| 31) C14(66) #2              | 22.36    | 702095m   | BelowCal | ng    |
| 32) C15(101) #2             | 23.30f   | 369053m   | BelowCal | ng    |
| 35) C15(118) #2             | 26.37    | 931211m   | BelowCal | ng    |
| 36) C16(153) #2             | 26.93    | 730887    | BelowCal | ng    |
| 37) C15(105) #2             | 27.20    | 816392    | BelowCal | ng    |
| 38) C16(138) #2             | 27.78    | 461727m   | BelowCal | ng    |
| 39) C17(187) #2             | 28.14    | 667680    | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:27:48 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:27:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 880477m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 788251m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 800002m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 715719m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 637238m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 518551m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc     | Units |
|------------------------------------|----------|-----------|----------|-------|
| <b>Internal Standards</b>          |          |           |          |       |
| 1) I C15(96)                       | 17.39    | 2103011   | 0.10000  | ng    |
| 10) I C16(161)                     | 23.21    | 4562564   | 0.10000  | ng    |
| 24) I C15(96) #2                   | 20.51    | 12416297m | 0.10000  | ng    |
| 33) I C16(161) #2                  | 26.79    | 27129752m | 0.10000  | ng    |
| <b>System Monitoring Compounds</b> |          |           |          |       |
| 4) s C13(34)                       | 13.39    | 297705    | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 11) s C16(152)                     | 20.48    | 348526    | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 27) s C13(34) #2                   | 16.47    | 1801754m  | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| 34) s C16(152) #2                  | 23.57    | 1960933m  | BelowCal | ng    |
| Spiked Amount                      | 0.0104   | Recovery  | =        | 0.00% |
| <b>Target Compounds</b>            |          |           |          |       |
| 2) C12(8)                          | 10.21    | 180784    | BelowCal | ng    |
| 3) C13(18)                         | 12.12    | 242567    | BelowCal | ng    |
| 5) C13(28)                         | 14.21    | 356002    | BelowCal | ng    |
| 6) C14(52)                         | 15.83    | 330341    | BelowCal | ng    |
| 7) C14(44)                         | 16.70    | 371149    | BelowCal | ng    |
| 8) C14(66)                         | 18.60    | 419278    | BelowCal | ng    |
| 9) C15(101)                        | 19.73    | 349240m   | BelowCal | ng    |
| 12) C15(118)                       | 22.39    | 435665    | BelowCal | ng    |
| 13) C16(153)                       | 23.43 TW | 390283m   | BelowCal | ng    |
| 14) C15(105)                       | 23.44 TW | 495013m   | BelowCal | ng    |
| 15) C16(138)                       | 24.54    | 508129    | BelowCal | ng    |
| 16) C17(187)                       | 25.29    | 449817    | BelowCal | ng    |
| 17) C16(128)                       | 25.63    | 436637m   | BelowCal | ng    |
| 18) C17(180)                       | 27.16    | 515383    | BelowCal | ng    |
| 19) C17(170)                       | 27.96    | 571467    | BelowCal | ng    |
| 20) C18(195)                       | 29.04    | 524255m   | BelowCal | ng    |
| 21) C19(206)                       | 30.30    | 492822m   | BelowCal | ng    |
| 22) C110(209)                      | 30.90    | 411674m   | BelowCal | ng    |
| 25) C12(8) #2                      | 13.11    | 1082243m  | BelowCal | ng    |
| 26) C13(18) #2                     | 14.99    | 1474380m  | BelowCal | ng    |
| 28) C13(28) #2                     | 17.76    | 2242630m  | BelowCal | ng    |
| 29) C14(52) #2                     | 19.14    | 1313663m  | BelowCal | ng    |
| 30) C14(44) #2                     | 19.96    | 2184906m  | BelowCal | ng    |
| 31) C14(66) #2                     | 22.36    | 2512274m  | BelowCal | ng    |
| 32) C15(101) #2                    | 23.22f   | 2401459m  | BelowCal | ng    |
| 35) C15(118) #2                    | 26.34    | 1802006m  | BelowCal | ng    |
| 36) C16(153) #2                    | 26.93    | 2453717   | BelowCal | ng    |
| 37) C15(105) #2                    | 27.20    | 2870795   | BelowCal | ng    |
| 38) C16(138) #2                    | 27.78    | 1892629m  | BelowCal | ng    |
| 39) C17(187) #2                    | 28.14    | 2289736   | BelowCal | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:21 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:30:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 3074334  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 2699532  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 2859094m | BelowCal | ng    |
| 43) | C18(195) #2  | 31.08 | 2571011m | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 2275330m | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 1828475m | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc          | Units |
|-----------------------------|----------|-----------|---------------|-------|
| Internal Standards          |          |           |               |       |
| 1) I C15(96)                | 17.39    | 2225995   | 0.10000       | ng    |
| 10) I C16(161)              | 23.21    | 4815577   | 0.10000       | ng    |
| 24) I C15(96) #2            | 20.51    | 13716870m | 0.10000       | ng    |
| 33) I C16(161) #2           | 26.79    | 29503850m | 0.10000       | ng    |
| System Monitoring Compounds |          |           |               |       |
| 4) s C13(34)                | 13.40    | 526303    | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 11) s C16(152)              | 20.48    | 653892    | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| 27) s C13(34) #2            | 16.47    | 3296041m  | BelowCal      | ng    |
| Spiked Amount               | 0.0200   | Recovery  | =             | 0.00% |
| 34) s C16(152) #2           | 23.58    | 3413733m  | BelowCal      | ng    |
| Spiked Amount               | 0.0201   | Recovery  | =             | 0.00% |
| Target Compounds            |          |           |               |       |
| 2) C12(8)                   | 10.20    | 333163    | BelowCal      | ng    |
| 3) C13(18)                  | 12.12    | 432057    | BelowCal      | ng    |
| 5) C13(28)                  | 14.21    | 687914    | BelowCal      | ng    |
| 6) C14(52)                  | 15.83    | 566807    | BelowCal      | ng    |
| 7) C14(44)                  | 16.70    | 718063    | BelowCal      | ng    |
| 8) C14(66)                  | 18.60    | 781317    | BelowCal      | ng    |
| 9) C15(101)                 | 19.73    | 762207m   | BelowCal      | ng    |
| 12) C15(118)                | 22.39    | 822121    | 0.03093       | ng    |
| 13) C16(153)                | 23.43 TW | 582042m   | BelowCal      | ng    |
| 14) C15(105)                | 23.44 TW | 965663m   | BelowCal      | ng    |
| 15) C16(138)                | 24.53    | 972641    | BelowCal      | ng    |
| 16) C17(187)                | 25.29    | 855745    | BelowCal      | ng    |
| 17) C16(128)                | 25.63    | 864076m   | BelowCal      | ng    |
| 18) C17(180)                | 27.16    | 964577    | BelowCal      | ng    |
| 19) C17(170)                | 27.96    | 1081580   | BelowCal      | ng    |
| 20) C18(195)                | 29.04    | 1016052   | 0.02214       | ng    |
| 21) C19(206)                | 30.30 e  | 959902m   | BelowCal      | ng    |
| 22) C110(209)               | 30.90    | 792978    | BelowCal      | ng    |
| 25) C12(8) #2               | 13.10    | 2106184m  | BelowCal      | ng    |
| 26) C13(18) #2              | 14.99    | 2769502m  | BelowCal      | ng    |
| 28) C13(28) #2              | 17.76    | 4386422m  | BelowCal      | ng    |
| 29) C14(52) #2              | 19.14    | 2862174m  | BelowCal      | ng    |
| 30) C14(44) #2              | 19.96    | 4484836m  | BelowCal      | ng    |
| 31) C14(66) #2              | 22.35    | 4845930m  | BelowCal      | ng    |
| 32) C15(101) #2             | 23.22f   | 5513291m  | BelowCal      | ng    |
| 35) C15(118) #2             | 26.35    | 4335255m  | BelowCal      | ng    |
| 36) C16(153) #2             | 26.93    | 4720338   | 1858066.56915 | ng    |
| 37) C15(105) #2             | 27.20    | 5791618   | 1122307.10620 | ng    |
| 38) C16(138) #2             | 27.78    | 3691173m  | BelowCal      | ng    |
| 39) C17(187) #2             | 28.14    | 4540027   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:27 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc          | Units |
|-----|--------------|-------|----------|---------------|-------|
| 40) | C16(128) #2  | 28.54 | 6164428  | BelowCal      | ng    |
| 41) | C17(180) #2  | 29.58 | 5451699  | BelowCal      | ng    |
| 42) | C17(170) #2  | 30.21 | 5828332m | 1341992.36163 | ng    |
| 43) | C18(195) #2  | 31.08 | 5312720  | BelowCal      | ng    |
| 44) | C19(206) #2  | 32.18 | 4740147m | BelowCal      | ng    |
| 45) | C110(209) #2 | 32.62 | 3772500m | 1559880.63544 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response    | Conc          | Units |
|------------------------------------|--------|-------------|---------------|-------|
| <b>Internal Standards</b>          |        |             |               |       |
| 1) I C15(96)                       | 17.39  | 2400478     | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5366502     | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 14992953m   | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34497986    | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |             |               |       |
| 4) s C13(34)                       | 13.40  | 990336      | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 1280995     | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 6281919m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0400 | Recovery    | =             | 0.00% |
| 34) s C16(152) #2                  | 23.58  | 7591525m    | BelowCal      | ng    |
| Spiked Amount                      | 0.0402 | Recovery    | =             | 0.00% |
| <b>Target Compounds</b>            |        |             |               |       |
| 2) C12(8)                          | 10.21  | e 607269    | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | e 758928    | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | e 1349346   | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | e 1019304   | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | e 1370610   | 4937947.47625 | ng    |
| 8) C14(66)                         | 18.60  | e 1544814   | BelowCal      | ng    |
| 9) C15(101)                        | 19.73  | e 1552699m  | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | e 1625326   | BelowCal      | ng    |
| 13) C16(153)                       | 23.43  | TW 1671077m | BelowCal      | ng    |
| 14) C15(105)                       | 23.44  | TW 2067241m | BelowCal      | ng    |
| 15) C16(138)                       | 24.53  | E 1975640   | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | e 1704362m  | BelowCal      | ng    |
| 17) C16(128)                       | 25.63  | e 1845001m  | BelowCal      | ng    |
| 18) C17(180)                       | 27.16  | E 2019174m  | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 2282709   | 3008040.19192 | ng    |
| 20) C18(195)                       | 29.04  | E 2138682m  | BelowCal      | ng    |
| 21) C19(206)                       | 30.30  | E 2074698m  | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 1700197m  | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | e 4038278m  | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | e 4609294m  | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | e 8581359m  | 2635734.36911 | ng    |
| 29) C14(52) #2                     | 19.14  | e 4960711m  | BelowCal      | ng    |
| 30) C14(44) #2                     | 19.96  | e 8717176m  | 1574158.07943 | ng    |
| 31) C14(66) #2                     | 22.36  | e 9936993m  | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | e 12947398m | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | 9808234m    | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 9577231   | 5152267.10485 | ng    |
| 37) C15(105) #2                    | 27.20  | E 12760987  | 3375570.13183 | ng    |
| 38) C16(138) #2                    | 27.78  | e 8526537m  | 1389497.67562 | ng    |
| 39) C17(187) #2                    | 28.14  | E 9590626   | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:33 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units            |
|-----|--------------|-------|----------|-----------|------------------|
| 40) | C16(128) #2  | 28.54 | E        | 13380771  | BelowCal ng      |
| 41) | C17(180) #2  | 29.58 | E        | 11878441m | BelowCal ng      |
| 42) | C17(170) #2  | 30.21 | E        | 12986040m | 4087411.97930 ng |
| 43) | C18(195) #2  | 31.08 | E        | 11911883m | BelowCal ng      |
| 44) | C19(206) #2  | 32.18 | E        | 10701956m | BelowCal ng      |
| 45) | C110(209) #2 | 32.62 | E        | 8387432m  | 5983940.61406 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response      | Conc          | Units |
|------------------------------------|--------|---------------|---------------|-------|
| <b>Internal Standards</b>          |        |               |               |       |
| 1) I C15(96)                       | 17.39  | 2523572       | 0.10000       | ng    |
| 10) I C16(161)                     | 23.21  | 5424577       | 0.10000       | ng    |
| 24) I C15(96) #2                   | 20.51  | 15446142m     | 0.10000       | ng    |
| 33) I C16(161) #2                  | 26.79  | 34872167      | 0.10000       | ng    |
| <b>System Monitoring Compounds</b> |        |               |               |       |
| 4) s C13(34)                       | 13.40  | 1861197       | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 11) s C16(152)                     | 20.48  | 2391536       | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 12156621m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0800 | Recovery      | =             | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 13279030m     | BelowCal      | ng    |
| Spiked Amount                      | 0.0803 | Recovery      | =             | 0.00% |
| <b>Target Compounds</b>            |        |               |               |       |
| 2) C12(8)                          | 10.21  | E 1130878     | BelowCal      | ng    |
| 3) C13(18)                         | 12.12  | E 1399997     | BelowCal      | ng    |
| 5) C13(28)                         | 14.21  | E 2563059     | BelowCal      | ng    |
| 6) C14(52)                         | 15.83  | E 1879706     | BelowCal      | ng    |
| 7) C14(44)                         | 16.70  | E 2546734m    | 8209713.15303 | ng    |
| 8) C14(66)                         | 18.60  | E 2898127     | BelowCal      | ng    |
| 9) C15(101)                        | 19.74  | E 2892299m    | BelowCal      | ng    |
| 12) C15(118)                       | 22.39  | E 2978206     | BelowCal      | ng    |
| 13) C16(153)                       | 23.44  | TW e 2876946m | BelowCal      | ng    |
| 14) C15(105)                       | 23.45  | TW e 3582092m | 1460512.29312 | ng    |
| 15) C16(138)                       | 24.54  | E 3695490     | BelowCal      | ng    |
| 16) C17(187)                       | 25.29  | E 3239289     | BelowCal      | ng    |
| 17) C16(128)                       | 25.64  | E 3673746m    | 3005443.36077 | ng    |
| 18) C17(180)                       | 27.15  | E 3855848m    | BelowCal      | ng    |
| 19) C17(170)                       | 27.96  | E 4378231     | 5123824.53354 | ng    |
| 20) C18(195)                       | 29.04  | E 4116319m    | BelowCal      | ng    |
| 21) C19(206)                       | 30.31  | E 3960506m    | BelowCal      | ng    |
| 22) C110(209)                      | 30.90  | E 3217630m    | BelowCal      | ng    |
| 25) C12(8) #2                      | 13.10  | E 7701304     | BelowCal      | ng    |
| 26) C13(18) #2                     | 14.99  | E 8745402m    | BelowCal      | ng    |
| 28) C13(28) #2                     | 17.76  | E 16942159    | 4721046.44848 | ng    |
| 29) C14(52) #2                     | 19.14  | E 9969394     | 3586542.90657 | ng    |
| 30) C14(44) #2                     | 19.96  | E 17386149m   | 5402544.89334 | ng    |
| 31) C14(66) #2                     | 22.35  | E 19075871m   | BelowCal      | ng    |
| 32) C15(101) #2                    | 23.21f | E 25811518m   | BelowCal      | ng    |
| 35) C15(118) #2                    | 26.35  | e 16530172m   | BelowCal      | ng    |
| 36) C16(153) #2                    | 26.93  | E 17723976    | 8475069.04022 | ng    |
| 37) C15(105) #2                    | 27.20  | E 24719069    | 5584053.95798 | ng    |
| 38) C16(138) #2                    | 27.78  | E 17133888m   | 4026737.36316 | ng    |
| 39) C17(187) #2                    | 28.14  | E 18398636    | BelowCal      | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:39 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 26047859  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 23443478m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 25601551m | 6820215.95092 ng  |
| 43) | C18(195) #2  | 31.08 | E        | 23548017m | BelowCal ng       |
| 44) | C19(206) #2  | 32.18 | E        | 21216572m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 16438463m | 10094597.27940 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.   | Response       | Conc           | Units |
|------------------------------------|--------|----------------|----------------|-------|
| <b>Internal Standards</b>          |        |                |                |       |
| 1) I C15(96)                       | 17.39  | 2857033m       | 0.10000        | ng    |
| 10) I C16(161)                     | 23.21  | 5785136        | 0.10000        | ng    |
| 24) I C15(96) #2                   | 20.51  | 15534608m      | 0.10000        | ng    |
| 33) I C16(161) #2                  | 26.79  | 28894537       | 0.10000        | ng    |
| <b>System Monitoring Compounds</b> |        |                |                |       |
| 4) s C13(34)                       | 13.40  | 6582490m       | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 11) s C16(152)                     | 20.48  | 8920810        | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| 27) s C13(34) #2                   | 16.47  | 39634387m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3200 | Recovery       | =              | 0.00% |
| 34) s C16(152) #2                  | 23.57  | 49764814m      | BelowCal       | ng    |
| Spiked Amount                      | 0.3213 | Recovery       | =              | 0.00% |
| <b>Target Compounds</b>            |        |                |                |       |
| 2) C12(8)                          | 10.21  | E 3802803      | BelowCal       | ng    |
| 3) C13(18)                         | 12.12  | E 4625770      | BelowCal       | ng    |
| 5) C13(28)                         | 14.20  | E 9305861      | BelowCal       | ng    |
| 6) C14(52)                         | 15.83  | E 6491550m     | BelowCal       | ng    |
| 7) C14(44)                         | 16.70  | E 9213228m     | 16878676.73504 | ng    |
| 8) C14(66)                         | 18.60  | E 10581706     | BelowCal       | ng    |
| 9) C15(101)                        | 19.74  | E 11214785m    | BelowCal       | ng    |
| 12) C15(118)                       | 22.39  | E 10845273     | BelowCal       | ng    |
| 13) C16(153)                       | 23.44  | TW E 11086255m | BelowCal       | ng    |
| 14) C15(105)                       | 23.45  | TW E 12238036m | 4834222.71684  | ng    |
| 15) C16(138)                       | 24.54  | E 14181010     | BelowCal       | ng    |
| 16) C17(187)                       | 25.28  | E 12362255m    | BelowCal       | ng    |
| 17) C16(128)                       | 25.63  | E 13614003m    | 7619432.15592  | ng    |
| 18) C17(180)                       | 27.16  | E 15356923     | BelowCal       | ng    |
| 19) C17(170)                       | 27.96  | E 17491960     | 11231671.25949 | ng    |
| 20) C18(195)                       | 29.04  | E 16570469m    | BelowCal       | ng    |
| 21) C19(206)                       | 30.30  | E 15913312m    | BelowCal       | ng    |
| 22) C110(209)                      | 30.90  | E 12593895m    | BelowCal       | ng    |
| 25) C12(8) #2                      | 13.10  | E 24205484m    | BelowCal       | ng    |
| 26) C13(18) #2                     | 14.99  | E 27041957m    | BelowCal       | ng    |
| 28) C13(28) #2                     | 17.76  | E 56387566m    | 9817113.52330  | ng    |
| 29) C14(52) #2                     | 19.14  | E 31213496m    | 8327658.06829  | ng    |
| 30) C14(44) #2                     | 19.96  | E 56797595m    | 12385262.50102 | ng    |
| 31) C14(66) #2                     | 22.36  | E 65508405m    | BelowCal       | ng    |
| 32) C15(101) #2                    | 23.21f | E 73990498m    | BelowCal       | ng    |
| 35) C15(118) #2                    | 26.34  | E 53052856m    | BelowCal       | ng    |
| 36) C16(153) #2                    | 26.93  | E 58782173     | 19272949.92145 | ng    |
| 37) C15(105) #2                    | 27.20  | E 87183647     | 12882056.53676 | ng    |
| 38) C16(138) #2                    | 27.78  | E 63446136m    | 10766758.70710 | ng    |
| 39) C17(187) #2                    | 28.14  | E 63573730     | BelowCal       | ng    |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Oct 28 08:32:43 2014 Quant Results File: MM0417B.RES

Quant Method : I:\M\DATA\MM0417B.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Tue Oct 28 08:32:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc      | Units             |
|-----|--------------|-------|----------|-----------|-------------------|
| 40) | C16(128) #2  | 28.54 | E        | 91431997  | BelowCal ng       |
| 41) | C17(180) #2  | 29.58 | E        | 83277221m | BelowCal ng       |
| 42) | C17(170) #2  | 30.21 | E        | 91217127m | 15760612.61828 ng |
| 43) | C18(195) #2  | 31.08 | E        | 84844015m | BelowCal ng       |
| 44) | C19(206) #2  | 32.17 | E        | 76001510m | BelowCal ng       |
| 45) | C110(209) #2 | 32.62 | E        | 57560994m | 23285632.07742 ng |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.   | Response  | Conc    | Units   |      |
|-----------------------------|--------|-----------|---------|---------|------|
| Internal Standards          |        |           |         |         |      |
| 1) I C15(96)                | 17.39  | 2508888   | 0.10000 | ng      |      |
| 10) I C16(161)              | 23.21  | 5353469   | 0.10000 | ng      |      |
| 24) I C15(96) #2            | 20.51  | 13969685m | 0.10000 | ng      |      |
| 33) I C16(161) #2           | 26.78  | 30447371  | 0.10000 | ng      |      |
| System Monitoring Compounds |        |           |         |         |      |
| 4) s C13(34)                | 13.40  | 1040909   | 0.04104 | ng      | 2.6  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 102.60% |      |
| 11) s C16(152)              | 20.48  | 1350202   | 0.04329 | ng      | 7.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 107.79% |      |
| 27) s C13(34) #2            | 16.47  | 6131122m  | 0.04171 | ng      | 4.3  |
| Spiked Amount               | 0.0400 | Recovery  | =       | 104.27% |      |
| 34) s C16(152) #2           | 23.57  | 6327177m  | 0.04129 | ng      | 2.8  |
| Spiked Amount               | 0.0402 | Recovery  | =       | 102.81% |      |
| Target Compounds            |        |           |         |         |      |
| 2) C12(8)                   | 10.21  | 664551    | 0.04326 | ng      | 8.1  |
| 3) C13(18)                  | 12.12  | 802051    | 0.04152 | ng      | 3.8  |
| 5) C13(28)                  | 14.21  | 1396518   | 0.04098 | ng      | 2.5  |
| 6) C14(52)                  | 15.83  | 1070948   | 0.04112 | ng      | 2.8  |
| 7) C14(44)                  | 16.70  | 1426889m  | 0.04167 | ng      | 4.2  |
| 8) C14(66)                  | 18.60  | 1565208   | 0.04028 | ng      | 0.7  |
| 9) C15(101)                 | 19.73  | 1426993m  | 0.03706 | ng      | -7.3 |
| 12) C15(118)                | 22.39  | 1627776   | 0.04151 | ng      | 3.8  |
| 13) C16(153)                | 23.43  | 1467714m  | 0.03933 | ng      | -1.7 |
| 14) C15(105)                | 23.45  | 1824192m  | 0.03778 | ng      | -5.5 |
| 15) C16(138)                | 24.53  | 2023467   | 0.04232 | ng      | 5.8  |
| 16) C17(187)                | 25.29  | 1787515   | 0.04281 | ng      | 7.0  |
| 17) C16(128)                | 25.63  | 1824156m  | 0.03935 | ng      | -1.6 |
| 18) C17(180)                | 27.15  | 2038700   | 0.04138 | ng      | 3.4  |
| 19) C17(170)                | 27.96  | 2269675   | 0.04068 | ng      | 1.7  |
| 20) C18(195)                | 29.04  | 2088594m  | 0.03989 | ng      | -0.3 |
| 21) C19(206)                | 30.30  | 1961931m  | 0.03884 | ng      | -2.9 |
| 22) C110(209)               | 30.90  | 1612364m  | 0.03909 | ng      | -2.3 |
| 25) C12(8) #2               | 13.10  | 3947204m  | 0.04248 | ng      | 6.2  |
| 26) C13(18) #2              | 14.99  | 4351305m  | 0.03989 | ng      | -0.3 |
| 28) C13(28) #2              | 17.76  | 8214453m  | 0.04094 | ng      | 2.3  |
| 29) C14(52) #2              | 19.14  | 4859257m  | 0.04058 | ng      | 1.4  |
| 30) C14(44) #2              | 19.96  | 8466239m  | 0.04126 | ng      | 3.1  |
| 31) C14(66) #2              | 22.35  | 9294328m  | 0.04096 | ng      | 2.4  |
| 32) C15(101) #2             | 23.24  | 4934904m  | 0.03828 | ng      | -4.3 |
| 35) C15(118) #2             | 26.35  | 7705344m  | 0.03951 | ng      | -1.2 |
| 36) C16(153) #2             | 26.93  | 8835029   | 0.04347 | ng      | 8.7  |
| 37) C15(105) #2             | 27.20  | 11200960m | 0.04079 | ng      | 2.0  |
| 38) C16(138) #2             | 27.78  | 7622194m  | 0.04108 | ng      | 2.7  |
| 39) C17(187) #2             | 28.14  | 8806327   | 0.04269 | ng      | 6.7  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 19 11:40:34 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Wed Nov 19 11:40:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |      |
|-----|--------------|-------|-----------|---------|-------|------|
| 40) | C16(128) #2  | 28.54 | 11964334m | 0.04137 | ng    | 3.4  |
| 41) | C17(180) #2  | 29.58 | 10533125m | 0.04073 | ng    | 1.8  |
| 42) | C17(170) #2  | 30.21 | 11398863m | 0.04051 | ng    | 1.3  |
| 43) | C18(195) #2  | 31.08 | 10207239m | 0.03956 | ng    | -1.1 |
| 44) | C19(206) #2  | 32.18 | 9021058m  | 0.03879 | ng    | -3.0 |
| 45) | C110(209) #2 | 32.62 | 7069806m  | 0.03894 | ng    | -2.6 |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7581.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0424\M7581.D\ECD2B.CH  
 Acq On : 11-14-2014 04:44:21 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units   |
|------------------------------------|----------|-----------|---------|---------|
| <b>Internal Standards</b>          |          |           |         |         |
| 1) I C15(96)                       | 17.40    | 2436917m  | 0.10000 | ng      |
| 10) I C16(161)                     | 23.21    | 5635758m  | 0.10000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 15830647m | 0.10000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 36312008  | 0.10000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |         |         |
| 4) s C13(34)                       | 13.40    | 959411m   | 0.03861 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 96.52%  |
| 11) s C16(152)                     | 20.48    | 1317698m  | 0.03982 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 99.15%  |
| 27) s C13(34) #2                   | 16.48    | 6530178m  | 0.03889 | ng      |
| Spiked Amount                      | 0.0400   | Recovery  | =       | 97.23%  |
| 34) s C16(152) #2                  | 23.58    | 7623201m  | 0.04175 | ng      |
| Spiked Amount                      | 0.0402   | Recovery  | =       | 103.96% |
| <b>Target Compounds</b>            |          |           |         |         |
| 2) C12(8)                          | 10.21    | 600443m   | 0.03981 | ng      |
| 3) C13(18)                         | 12.13    | 792814m   | 0.04239 | ng      |
| 5) C13(28)                         | 14.21    | 1331400m  | 0.04015 | ng      |
| 6) C14(52)                         | 15.83    | 977893m   | 0.03817 | ng      |
| 7) C14(44)                         | 16.70    | 1323551m  | 0.03958 | ng      |
| 8) C14(66)                         | 18.60    | 1433905m  | 0.03776 | ng      |
| 9) C15(101)                        | 19.74    | 1552909m  | 0.04186 | ng      |
| 12) C15(118)                       | 22.39    | 1475787m  | 0.03520 | ng      |
| 13) C16(153)                       | 23.44 TW | 1470491m  | 0.03735 | ng      |
| 14) C15(105)                       | 23.45 TW | 1972037m  | 0.03890 | ng      |
| 15) C16(138)                       | 24.54    | 1978720m  | 0.03909 | ng      |
| 16) C17(187)                       | 25.29    | 1785925m  | 0.04046 | ng      |
| 17) C16(128)                       | 25.64    | 2032967m  | 0.04175 | ng      |
| 18) C17(180)                       | 27.16    | 2066800m  | 0.03976 | ng      |
| 19) C17(170)                       | 27.96    | 2301627m  | 0.03911 | ng      |
| 20) C18(195)                       | 29.04    | 2215813m  | 0.04021 | ng      |
| 21) C19(206)                       | 30.31    | 2115042m  | 0.03982 | ng      |
| 22) C110(209)                      | 30.90    | 1765150m  | 0.04073 | ng      |
| 25) C12(8) #2                      | 13.11    | 4071508m  | 0.03829 | ng      |
| 26) C13(18) #2                     | 14.99    | 4768665m  | 0.03835 | ng      |
| 28) C13(28) #2                     | 17.77    | 8255934m  | 0.03596 | ng      |
| 29) C14(52) #2                     | 19.15    | 5416893m  | 0.03985 | ng      |
| 30) C14(44) #2                     | 19.96    | 9360950m  | 0.04018 | ng      |
| 31) C14(66) #2                     | 22.36    | 9845591m  | 0.03809 | ng      |
| 32) C15(101) #2                    | 23.25    | 5544867m  | 0.03792 | ng      |
| 35) C15(118) #2                    | 26.36    | 9960431m  | 0.04316 | ng      |
| 36) C16(153) #2                    | 26.94    | 9824442   | 0.04026 | ng      |
| 37) C15(105) #2                    | 27.20    | 12298947  | 0.03743 | ng      |
| 38) C16(138) #2                    | 27.78    | 9280417m  | 0.04195 | ng      |
| 39) C17(187) #2                    | 28.14    | 10332711  | 0.04196 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7581.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0424\M7581.D\ECD2B.CH  
 Acq On : 11-14-2014 04:44:21 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:26 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 13863683  | 0.04015 | ng    |
| 41) | C17(180) #2  | 29.59 | 12344518m | 0.04000 | ng    |
| 42) | C17(170) #2  | 30.22 | 13297627m | 0.03960 | ng    |
| 43) | C18(195) #2  | 31.09 | 12505962m | 0.04066 | ng    |
| 44) | C19(206) #2  | 32.18 | 11501257m | 0.04151 | ng    |
| 45) | C110(209) #2 | 32.62 | 9273414m  | 0.04293 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7592.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0424\M7592.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:54 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 08:54:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc    | Units  |
|------------------------------------|----------|-----------|---------|--------|
| <b>Internal Standards</b>          |          |           |         |        |
| 1) I C15(96)                       | 17.39    | 3196533   | 0.10000 | ng     |
| 10) I C16(161)                     | 23.22    | 7127913m  | 0.10000 | ng     |
| 24) I C15(96) #2                   | 20.52    | 18485755m | 0.10000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 41716767  | 0.10000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |         |        |
| 4) s C13(34)                       | 13.40    | 2311739   | 0.07751 | ng     |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 96.89% |
| 11) s C16(152)                     | 20.48    | 3112933   | 0.07873 | ng     |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 98.02% |
| 27) s C13(34) #2                   | 16.48    | 13378875m | 0.07284 | ng     |
| Spiked Amount                      | 0.0800   | Recovery  | =       | 91.05% |
| 34) s C16(152) #2                  | 23.57    | 15800091m | 0.07745 | ng     |
| Spiked Amount                      | 0.0803   | Recovery  | =       | 96.43% |
| <b>Target Compounds</b>            |          |           |         |        |
| 2) C12(8)                          | 10.21    | 1269323   | 0.06866 | ng     |
| 3) C13(18)                         | 12.13    | 1598267   | 0.06986 | ng     |
| 5) C13(28)                         | 14.21    | 3062205   | 0.07424 | ng     |
| 6) C14(52)                         | 15.84    | 2211776   | 0.07255 | ng     |
| 7) C14(44)                         | 16.70    | 3168753   | 0.07720 | ng     |
| 8) C14(66)                         | 18.60    | 3441391   | 0.07340 | ng     |
| 9) C15(101)                        | 19.74    | 3765248m  | 0.08078 | ng     |
| 12) C15(118)                       | 22.39    | 3482088m  | 0.06966 | ng     |
| 13) C16(153)                       | 23.45 TW | 3935235m  | 0.08183 | ng     |
| 14) C15(105)                       | 23.46 TW | 4813727m  | 0.08013 | ng     |
| 15) C16(138)                       | 24.54    | 4682573   | 0.07636 | ng     |
| 16) C17(187)                       | 25.29    | 4183330m  | 0.07819 | ng     |
| 17) C16(128)                       | 25.64    | 4540678m  | 0.07553 | ng     |
| 18) C17(180)                       | 27.16    | 5040122m  | 0.07926 | ng     |
| 19) C17(170)                       | 27.96    | 5712601m  | 0.07915 | ng     |
| 20) C18(195)                       | 29.04    | 5581046m  | 0.08239 | ng     |
| 21) C19(206)                       | 30.31    | 5433962m  | 0.08312 | ng     |
| 22) C110(209)                      | 30.90    | 4477057   | 0.08448 | ng     |
| 25) C12(8) #2                      | 13.11    | 8151568m  | 0.06939 | ng     |
| 26) C13(18) #2                     | 14.99    | 10345352m | 0.07854 | ng     |
| 28) C13(28) #2                     | 17.76    | 17798827m | 0.06965 | ng     |
| 29) C14(52) #2                     | 19.14    | 10765497m | 0.07157 | ng     |
| 30) C14(44) #2                     | 19.97    | 22240672m | 0.08647 | ng     |
| 31) C14(66) #2                     | 22.36    | 21637375m | 0.07508 | ng     |
| 32) C15(101) #2                    | 23.24    | 12636361m | 0.07668 | ng     |
| 35) C15(118) #2                    | 26.35    | 20643147m | 0.08127 | ng     |
| 36) C16(153) #2                    | 26.94    | 20743471  | 0.07721 | ng     |
| 37) C15(105) #2                    | 27.20    | 28383886m | 0.07631 | ng     |
| 38) C16(138) #2                    | 27.78    | 22754437m | 0.08855 | ng     |
| 39) C17(187) #2                    | 28.14    | 22587452  | 0.08160 | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7592.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0424\M7592.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:54 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 08:54:25 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 31581348  | 0.08075 | ng    |
| 41) | C17(180) #2  | 29.59 | 29274447  | 0.08334 | ng    |
| 42) | C17(170) #2  | 30.22 | 31829402m | 0.08292 | ng    |
| 43) | C18(195) #2  | 31.09 | 30195091m | 0.08547 | ng    |
| 44) | C19(206) #2  | 32.18 | 28072736m | 0.08803 | ng    |
| 45) | C110(209) #2 | 32.62 | 22132202m | 0.08972 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7603.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0424\M7603.D\ECD2B.CH  
 Acq On : 11-15-2014 09:03:03 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:37 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 08:54:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc    | Units   |
|-----------------------------|----------|-----------|---------|---------|
| Internal Standards          |          |           |         |         |
| 1) I C15(96)                | 17.39    | 3483421   | 0.10000 | ng      |
| 10) I C16(161)              | 23.21    | 7856766m  | 0.10000 | ng      |
| 24) I C15(96) #2            | 20.51    | 19099905m | 0.10000 | ng      |
| 33) I C16(161) #2           | 26.79    | 46749872  | 0.10000 | ng      |
| System Monitoring Compounds |          |           |         |         |
| 4) s C13(34)                | 13.40    | 1372584   | 0.03865 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 96.63%  |
| 11) s C16(152)              | 20.48    | 1923497   | 0.04190 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 104.33% |
| 27) s C13(34) #2            | 16.47    | 7809416m  | 0.03850 | ng      |
| Spiked Amount               | 0.0400   | Recovery  | =       | 96.25%  |
| 34) s C16(152) #2           | 23.57    | 10151436m | 0.04330 | ng      |
| Spiked Amount               | 0.0402   | Recovery  | =       | 107.82% |
| Target Compounds            |          |           |         |         |
| 2) C12(8)                   | 10.21    | 829981    | 0.03830 | ng      |
| 3) C13(18)                  | 12.12    | 1042862   | 0.03844 | ng      |
| 5) C13(28)                  | 14.21    | 1877061   | 0.03954 | ng      |
| 6) C14(52)                  | 15.83    | 1407349   | 0.03849 | ng      |
| 7) C14(44)                  | 16.70    | 1903784m  | 0.03985 | ng      |
| 8) C14(66)                  | 18.60    | 2056583   | 0.03790 | ng      |
| 9) C15(101)                 | 19.73    | 2129225m  | 0.04003 | ng      |
| 12) C15(118)                | 22.39    | 2155199   | 0.03705 | ng      |
| 13) C16(153)                | 23.44 TW | 2083007m  | 0.03798 | ng      |
| 14) C15(105)                | 23.45 TW | 2658053m  | 0.03748 | ng      |
| 15) C16(138)                | 24.53    | 2720464m  | 0.03851 | ng      |
| 16) C17(187)                | 25.28    | 2491705m  | 0.04050 | ng      |
| 17) C16(128)                | 25.63    | 2508648m  | 0.03678 | ng      |
| 18) C17(180)                | 27.16    | 2879797   | 0.03974 | ng      |
| 19) C17(170)                | 27.96    | 3234445   | 0.03944 | ng      |
| 20) C18(195)                | 29.04    | 3083288m  | 0.04013 | ng      |
| 21) C19(206)                | 30.30    | 2949327   | 0.03983 | ng      |
| 22) C110(209)               | 30.90    | 2429092m  | 0.04018 | ng      |
| 25) C12(8) #2               | 13.10    | 4766578m  | 0.03704 | ng      |
| 26) C13(18) #2              | 14.99    | 5592276m  | 0.03708 | ng      |
| 28) C13(28) #2              | 17.76    | 10230408m | 0.03701 | ng      |
| 29) C14(52) #2              | 19.14    | 6132136m  | 0.03714 | ng      |
| 30) C14(44) #2              | 19.96    | 11180819m | 0.03975 | ng      |
| 31) C14(66) #2              | 22.35    | 12439948m | 0.04003 | ng      |
| 32) C15(101) #2             | 23.24    | 7336904m  | 0.04194 | ng      |
| 35) C15(118) #2             | 26.35    | 12165725m | 0.04074 | ng      |
| 36) C16(153) #2             | 26.93    | 12307201  | 0.03906 | ng      |
| 37) C15(105) #2             | 27.20    | 15727319m | 0.03717 | ng      |
| 38) C16(138) #2             | 27.78    | 11966951m | 0.04201 | ng      |
| 39) C17(187) #2             | 28.14    | 13147349  | 0.04144 | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7603.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0424\M7603.D\ECD2B.CH  
 Acq On : 11-15-2014 09:03:03 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 20 08:54:37 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Thu Nov 20 08:54:30 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc    | Units |
|-----|--------------|-------|-----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 18105282  | 0.04075 | ng    |
| 41) | C17(180) #2  | 29.58 | 16531801  | 0.04167 | ng    |
| 42) | C17(170) #2  | 30.21 | 18046457m | 0.04180 | ng    |
| 43) | C18(195) #2  | 31.08 | 16600840m | 0.04195 | ng    |
| 44) | C19(206) #2  | 32.18 | 15122348m | 0.04240 | ng    |
| 45) | C110(209) #2 | 32.62 | 11979441m | 0.04308 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0417\M7205.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0417\M7205.D\ECD2B.CH  
 Acq On : 10-20-2014 06:46:57 PM Operator: RR  
 Sample : IE03 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Nov 14 09:31:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2038180   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 12872032m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 102746m   | 0.00162 | ng    |
| 5) C15(101) #2     | 23.23 | 516701m   | 0.00035 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7205.D MM0417F.M Fri Dec 05 16:10:49 2014

Signal #1 : I:\M\DATA\SM0417\M7207.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0417\M7207.D\ECD2B.CH  
 Acq On : 10-20-2014 08:16:06 PM Operator: RR  
 Sample : IE05 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response | Conc    | Units |
|--------------------|-------|----------|---------|-------|
| Internal Standards |       |          |         |       |
| 1) I C15(96)       | 17.39 | 2103011  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13386960 | 0.10000 | ng    |
| Target Compounds   |       |          |         |       |
| 2) C15(101)        | 19.73 | 341674m  | 0.00915 | ng    |
| 5) C15(101) #2     | 23.22 | 3258192m | 0.02515 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7207.D MM0417F.M Fri Dec 05 16:10:55 2014

Signal #1 : I:\M\DATA\SM0417\M7208.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0417\M7208.D\ECD2B.CH  
 Acq On : 10-20-2014 09:00:35 PM Operator: RR  
 Sample : IE06 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2225995   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 13612237m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 753837m   | 0.02114 | ng    |
| 5) C15(101) #2     | 23.22 | 5441576m  | 0.04378 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7208.D MM0417F.M Fri Dec 05 16:10:57 2014

Signal #1 : I:\M\DATA\SM0417\M7209.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0417\M7209.D\ECD2B.CH  
 Acq On : 10-20-2014 09:45:07 PM Operator: RR  
 Sample : IE07 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:46 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2400478   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14869473m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1636592m  | 0.04499 | ng    |
| 5) C15(101) #2     | 23.21 | 11842524m | 0.08946 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7209.D MM0417F.M Fri Dec 05 16:10:58 2014

Signal #1 : I:\M\DATA\SM0417\M7210.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0417\M7210.D\ECD2B.CH  
 Acq On : 20 Oct 2014 10:29 pm Operator: RR  
 Sample : IE08 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:50 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:44 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 2523572   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15494530m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 2973113m  | 0.08080 | ng    |
| 5) C15(101) #2     | 23.21 | 25660002m | 0.18179 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7210.D MM0417F.M Fri Dec 05 16:11:00 2014

Signal #1 : I:\M\DATA\SM0417\M7212.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0417\M7212.D\ECD2B.CH  
 Acq On : 20 Oct 2014 11:58 pm Operator: RR  
 Sample : IE10 Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:15:54 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:15:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.    | Response  | Conc    | Units |
|--------------------|---------|-----------|---------|-------|
| Internal Standards |         |           |         |       |
| 1) I C15(96)       | 17.39   | 2539311m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51   | 15194166m | 0.10000 | ng    |
| Target Compounds   |         |           |         |       |
| 2) C15(101)        | 19.74   | 11042195m | 0.36809 | ng    |
| 5) C15(101) #2     | 23.22 e | 68456197m | 0.44286 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7212.D MM0417F.M Fri Dec 05 16:11:01 2014



Signal #1 : I:\M\DATA\SM0417\M7213.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0417\M7213.D\ECD2B.CH  
 Acq On : 21 Oct 2014 12:43 am Operator: RR  
 Sample : HY06 ICC Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 05 15:24:15 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Fri Dec 05 15:22:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |      |
|--------------------|-------|-----------|---------|-------|------|
| -----              |       |           |         |       |      |
| Internal Standards |       |           |         |       |      |
| 1) I C15(96)       | 17.39 | 2508888   | 0.10000 | ng    |      |
| 4) I C15(96) #2    | 20.51 | 13936712m | 0.10000 | ng    |      |
| Target Compounds   |       |           |         |       |      |
| 2) C15(101)        | 19.73 | 1516710m  | 0.03859 | ng    | -3.5 |
| 5) C15(101) #2     | 23.21 | 11320633m | 0.03850 | ng    | -3.8 |
| -----              |       |           |         |       |      |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7213.D MM0417F.M Fri Dec 05 16:11:01 2014

Signal #1 : I:\M\DATA\SM0424\M7581.D\ECD1A.CH Vial: 2  
 Signal #2 : I:\M\DATA\SM0424\M7581.D\ECD2B.CH  
 Acq On : 11-14-2014 04:44:21 PM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 13:01:58 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 13:01:52 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.40 | 2438735m  | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 15811867m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 1514385m  | 0.03970 | ng    |
| 5) C15(101) #2     | 23.22 | 13593386m | 0.04080 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7581.D MM0417F.M Mon Dec 08 13:24:19 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7592.D\ECD1A.CH Vial: 13  
 Signal #2 : I:\M\DATA\SM0424\M7592.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:54 am Operator: RR  
 Sample : IE08 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:48 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3196533   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.52 | 18155079m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.74 | 3793149m  | 0.07859 | ng    |
| 5) C15(101) #2     | 23.21 | 26961876m | 0.07255 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7592.D MM0417F.M Mon Dec 08 13:24:40 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7603.D\ECD1A.CH Vial: 24  
 Signal #2 : I:\M\DATA\SM0424\M7603.D\ECD2B.CH  
 Acq On : 11-15-2014 09:03:03 AM Operator: RR  
 Sample : IE07 mid Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:26 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:21 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc    | Units |
|--------------------|-------|-----------|---------|-------|
| Internal Standards |       |           |         |       |
| 1) I C15(96)       | 17.39 | 3483421   | 0.10000 | ng    |
| 4) I C15(96) #2    | 20.51 | 18994252m | 0.10000 | ng    |
| Target Compounds   |       |           |         |       |
| 2) C15(101)        | 19.73 | 2170047m  | 0.03983 | ng    |
| 5) C15(101) #2     | 23.21 | 16300926m | 0.04073 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7603.D MM0417F.M Mon Dec 08 13:24:58 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7582.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0424\M7582.D\ECD2B.CH  
 Acq On : 11-14-2014 05:28:55 PM Operator: RR  
 Sample : CD588PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sodium Sulfate lot # 1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 11:13:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 2164245   | 100.00000 | ng      |
| 10) I C16(161)                     | 23.22    | 4836853m  | 100.00000 | ng      |
| 24) I C15(96) #2                   | 20.52    | 14681353m | 100.00000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 34857967m | 100.00000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 1918008   | 97.73931  | ng      |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 97.74%  |
| 11) s C16(152)                     | 20.48    | 2692587   | 102.40069 | ng      |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 101.99% |
| 27) s C13(34) #2                   | 16.48    | 14113962m | 99.88526  | ng      |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 99.89%  |
| 34) s C16(152) #2                  | 23.62    | 19192299m | 112.34149 | ng      |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 111.89% |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 0.00     | 0d        | N.D.      | ng      |
| 3) C13(18)                         | 0.00     | 0d        | N.D.      | ng      |
| 5) C13(28)                         | 0.00     | 0d        | N.D.      | ng      |
| 6) C14(52)                         | 0.00     | 0d        | N.D.      | ng      |
| 7) C14(44)                         | 0.00     | 0d        | N.D.      | ng      |
| 8) C14(66)                         | 0.00     | 0d        | N.D.      | ng      |
| 9) C15(101)                        | 0.00     | 0d        | N.D.      | ng      |
| 12) C15(118)                       | 0.00     | 0d        | N.D.      | ng      |
| 13) C16(153)                       | 0.00     | 0d        | N.D.      | ng      |
| 14) C15(105)                       | 0.00     | 0d        | N.D.      | ng      |
| 15) C16(138)                       | 0.00     | 0d        | N.D.      | ng      |
| 16) C17(187)                       | 0.00     | 0d        | N.D.      | ng      |
| 17) C16(128)                       | 0.00     | 0d        | N.D.      | ng      |
| 18) C17(180)                       | 0.00     | 0d        | N.D.      | ng      |
| 19) C17(170)                       | 0.00     | 0d        | N.D.      | ng      |
| 20) C18(195)                       | 0.00     | 0d        | N.D.      | ng      |
| 21) C19(206)                       | 0.00     | 0d        | N.D.      | ng      |
| 22) C110(209)                      | 0.00     | 0d        | N.D.      | ng      |
| 25) C12(8) #2                      | 0.00     | 0d        | N.D.      | ng      |
| 26) C13(18) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 28) C13(28) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 29) C14(52) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 30) C14(44) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 31) C14(66) #2                     | 0.00     | 0d        | N.D.      | ng      |
| 32) C15(101) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 35) C15(118) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 36) C16(153) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 37) C15(105) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 38) C16(138) #2                    | 0.00     | 0d        | N.D.      | ng      |
| 39) C17(187) #2                    | 0.00     | 0d        | N.D.      | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7582.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0424\M7582.D\ECD2B.CH  
 Acq On : 11-14-2014 05:28:55 PM Operator: RR  
 Sample : CD588PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sodium Sulfate lot # 1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:38 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 11:13:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7583.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0424\M7583.D\ECD2B.CH  
 Acq On : 11-14-2014 06:13:22 PM Operator: RR  
 Sample : CD589LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sodium Sulfa Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:44 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |      |
|-----------------------------|----------|-----------|-----------|--------|------|
| Internal Standards          |          |           |           |        |      |
| 1) I C15(96)                | 17.39    | 2270924   | 100.00000 | ng     |      |
| 10) I C16(161)              | 23.21    | 5378808m  | 100.00000 | ng     |      |
| 24) I C15(96) #2            | 20.52    | 15162087m | 100.00000 | ng     |      |
| 33) I C16(161) #2           | 26.79    | 37142940  | 100.00000 | ng     |      |
| System Monitoring Compounds |          |           |           |        |      |
| 4) s C13(34)                | 13.40    | 1922888m  | 92.77561  | ng     | 93%  |
| Spiked Amount               | 100.0000 | Recovery  | =         | 92.78% |      |
| 11) s C16(152)              | 20.48    | 2825005   | 96.14107  | ng     | 96%  |
| Spiked Amount               | 100.4000 | Recovery  | =         | 95.76% |      |
| 27) s C13(34) #2            | 16.48    | 14291607m | 97.71017  | ng     | 98%  |
| Spiked Amount               | 100.0000 | Recovery  | =         | 97.71% |      |
| 34) s C16(152) #2           | 23.61    | 15583495m | 85.86369  | ng     | 86%  |
| Spiked Amount               | 100.4000 | Recovery  | =         | 85.52% |      |
| Target Compounds            |          |           |           |        |      |
| 2) C12(8)                   | 10.21    | 445676    | 30.57386  | ng     | 82%  |
| 3) C13(18)                  | 12.13    | 574104    | 31.43178  | ng     | 84%  |
| 5) C13(28)                  | 14.21    | 1023631m  | 32.48837  | ng     | 87%  |
| 6) C14(52)                  | 15.83    | 773038    | 31.22357  | ng     | 83%  |
| 7) C14(44)                  | 16.70    | 1072539   | 33.83702  | ng     | 90%  |
| 8) C14(66)                  | 18.60    | 1154711   | 32.11043  | ng     | 86%  |
| 9) C15(101)                 | 19.74    | 1327275m  | 38.15835  | ng     | 102% |
| 12) C15(118)                | 22.39    | 1299604   | 32.18199  | ng     | 86%  |
| 13) C16(153)                | 23.44 TW | 1085195m  | 28.52316  | ng     | 76%  |
| 14) C15(105)                | 23.45 TW | 1666021m  | 33.99972  | ng     | 91%  |
| 15) C16(138)                | 24.54    | 1655448   | 33.89123  | ng     | 90%  |
| 16) C17(187)                | 25.29    | 1453171   | 34.04556  | ng     | 91%  |
| 17) C16(128)                | 25.64    | 1448851m  | 30.82869  | ng     | 82%  |
| 18) C17(180)                | 27.16    | 1715503m  | 34.27047  | ng     | 91%  |
| 19) C17(170)                | 27.96    | 1894397m  | 33.44761  | ng     | 89%  |
| 20) C18(195)                | 29.04    | 1878013m  | 35.49339  | ng     | 95%  |
| 21) C19(206)                | 30.31    | 1784305m  | 34.99887  | ng     | 93%  |
| 22) C110(209)               | 30.90    | 1560940m  | 37.58436  | ng     | 100% |
| 25) C12(8) #2               | 13.11    | 3259111m  | 31.37526  | ng     | 84%  |
| 26) C13(18) #2              | 14.99    | 3848907m  | 31.26749  | ng     | 83%  |
| 28) C13(28) #2              | 17.76    | 6586458m  | 29.47835  | ng     | 79%  |
| 29) C14(52) #2              | 19.15    | 4369881m  | 32.95341  | ng     | 88%  |
| 30) C14(44) #2              | 19.96    | 7720480m  | 34.20032  | ng     | 91%  |
| 31) C14(66) #2              | 22.36    | 8559904m  | 34.30902  | ng     | 91%  |
| 32) C15(101) #2             | 23.24    | 5299665m  | 37.83851  | ng     | 101% |
| 35) C15(118) #2             | 26.35    | 7617413m  | 31.27768  | ng     | 83%  |
| 36) C16(153) #2             | 26.94    | 8338100m  | 32.71743  | ng     | 87%  |
| 37) C15(105) #2             | 27.20    | 11225285  | 33.22606  | ng     | 89%  |
| 38) C16(138) #2             | 27.78    | 7937083m  | 35.02611  | ng     | 93%  |
| 39) C17(187) #2             | 28.14    | 8958840   | 35.19734  | ng     | 94%  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7583.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0424\M7583.D\ECD2B.CH  
 Acq On : 11-14-2014 06:13:22 PM Operator: RR  
 Sample : CD589LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sodium Sulfa Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:44 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:37 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |      |
|-----|--------------|-------|-----------|----------|-------|------|
| 40) | C16(128) #2  | 28.54 | 12297873m | 34.58667 | ng    | 92%  |
| 41) | C17(180) #2  | 29.59 | 11157847m | 35.18602 | ng    | 94%  |
| 42) | C17(170) #2  | 30.22 | 11968286m | 34.71789 | ng    | 93%  |
| 43) | C18(195) #2  | 31.09 | 11408069m | 36.17707 | ng    | 96%  |
| 44) | C19(206) #2  | 32.18 | 10304820m | 36.27821 | ng    | 97%  |
| 45) | C110(209) #2 | 32.62 | 8626270m  | 38.94511 | ng    | 104% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7584.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0424\M7584.D\ECD2B.CH  
 Acq On : 11-14-2014 06:57:58 PM Operator: RR  
 Sample : CD590MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 2530448   | 100.00000 | ng      |
| 10) I C16(161)                     | 23.21    | 6206066   | 100.00000 | ng      |
| 24) I C15(96) #2                   | 20.51    | 15353413m | 100.00000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 37648654m | 100.00000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 2122058   | 91.75847  | ng      |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 91.76%  |
| 11) s C16(152)                     | 20.48    | 3128999   | 91.97913  | ng      |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 91.61%  |
| 27) s C13(34) #2                   | 16.47    | 13686410m | 91.81438  | ng      |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 91.81%  |
| 34) s C16(152) #2                  | 23.62    | 19265426m | 104.56902 | ng      |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 104.15% |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 116696    | 3.87695   | ng      |
| 3) C13(18)                         | 12.13    | 146899    | 3.16334   | ng      |
| 5) C13(28)                         | 14.20    | 282337m   | 6.02863   | ng      |
| 6) C14(52)                         | 15.83    | 221405    | 3.17325   | ng      |
| 7) C14(44)                         | 16.70    | 286879m   | 5.51623   | ng      |
| 8) C14(66)                         | 18.60    | 328139m   | 5.97557   | ng      |
| 9) C15(101)                        | 19.74    | 356000m   | 7.68392   | ng      |
| 12) C15(118)                       | 22.39    | 426235m   | 6.83523   | ng      |
| 13) C16(153)                       | 23.43 TW | 314555m   | 6.29957   | ng      |
| 14) C15(105)                       | 23.44 TW | 461452m   | 6.07228   | ng      |
| 15) C16(138)                       | 24.54    | 469436    | 6.38459   | ng      |
| 16) C17(187)                       | 25.29    | 421101    | 6.61257   | ng      |
| 17) C16(128)                       | 25.63    | 349680m   | 5.83256   | ng      |
| 18) C17(180)                       | 27.16    | 472633    | 6.60670   | ng      |
| 19) C17(170)                       | 27.96    | 515842    | 6.52343   | ng      |
| 20) C18(195)                       | 29.04    | 492193    | 6.76769   | ng      |
| 21) C19(206)                       | 30.31    | 453034m   | 6.57577   | ng      |
| 22) C110(209)                      | 30.90    | 409843m   | 7.23337   | ng      |
| 25) C12(8) #2                      | 13.10    | 804186m   | 5.47551   | ng      |
| 26) C13(18) #2                     | 14.99    | 1009888m  | 3.93908   | ng      |
| 28) C13(28) #2                     | 17.76    | 1520111m  | 5.03281   | ng      |
| 29) C14(52) #2                     | 19.15    | 1397082m  | 8.39905   | ng      |
| 30) C14(44) #2                     | 19.96    | 1658942m  | 5.69279   | ng      |
| 31) C14(66) #2                     | 22.36    | 2075430m  | 6.51777   | ng      |
| 32) C15(101) #2                    | 23.25    | 1412997m  | 6.74570   | ng      |
| 35) C15(118) #2                    | 26.36    | 2282343m  | 6.58490   | ng      |
| 36) C16(153) #2                    | 26.94    | 2265068   | 5.72844   | ng      |
| 37) C15(105) #2                    | 27.20    | 2607736   | 6.10564   | ng      |
| 38) C16(138) #2                    | 27.78    | 2010467m  | 8.07574   | ng      |
| 39) C17(187) #2                    | 28.14    | 2306028   | 6.87467   | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7584.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0424\M7584.D\ECD2B.CH  
 Acq On : 11-14-2014 06:57:58 PM Operator: RR  
 Sample : CD590MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:49 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:43 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2887440m | 6.39616 | ng    |
| 41) | C17(180) #2  | 29.59 | 2651470m | 6.83730 | ng    |
| 42) | C17(170) #2  | 30.21 | 2752886m | 6.74278 | ng    |
| 43) | C18(195) #2  | 31.09 | 2620863m | 7.20674 | ng    |
| 44) | C19(206) #2  | 32.18 | 2398133m | 7.48383 | ng    |
| 45) | C110(209) #2 | 32.62 | 2047772m | 8.00221 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7585.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0424\M7585.D\ECD2B.CH  
 Acq On : 11-14-2014 07:42:36 PM Operator: RR  
 Sample : CD591MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:53 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units   |
|-----------------------------|----------|-----------|-----------|---------|
| Internal Standards          |          |           |           |         |
| 1) I C15(96)                | 17.39    | 2263263   | 100.00000 | ng      |
| 10) I C16(161)              | 23.21    | 5152353   | 100.00000 | ng      |
| 24) I C15(96) #2            | 20.51    | 14964213m | 100.00000 | ng      |
| 33) I C16(161) #2           | 26.79    | 36919109  | 100.00000 | ng      |
| System Monitoring Compounds |          |           |           |         |
| 4) s C13(34)                | 13.40    | 1886137m  | 91.10418  | ng      |
| Spiked Amount               | 100.0000 | Recovery  | =         | 91.10%  |
| 11) s C16(152)              | 20.48    | 2744000   | 97.60210  | ng      |
| Spiked Amount               | 100.4000 | Recovery  | =         | 97.21%  |
| 27) s C13(34) #2            | 16.48    | 13674813m | 94.39054  | ng      |
| Spiked Amount               | 100.0000 | Recovery  | =         | 94.39%  |
| 34) s C16(152) #2           | 23.62    | 18388513m | 101.82533 | ng      |
| Spiked Amount               | 100.4000 | Recovery  | =         | 101.42% |
| Target Compounds            |          |           |           |         |
| 2) C12(8)                   | 10.21    | 110686    | 4.36068   | ng      |
| 3) C13(18)                  | 12.12    | 153695    | 4.55674   | ng      |
| 5) C13(28)                  | 14.21    | 258141    | 6.21834   | ng      |
| 6) C14(52)                  | 15.83    | 212825    | 3.88256   | ng      |
| 7) C14(44)                  | 16.69    | 249323m   | 5.26844   | ng      |
| 8) C14(66)                  | 18.60    | 292323    | 5.94063   | ng      |
| 9) C15(101)                 | 19.73    | 299539m   | 7.12181   | ng      |
| 12) C15(118)                | 22.39    | 346386m   | 6.62541   | ng      |
| 13) C16(153)                | 23.43    | 287635m   | 7.04875   | ng      |
| 14) C15(105)                | 23.45    | 375042m   | 5.89075   | ng      |
| 15) C16(138)                | 24.54    | 403253    | 6.69247   | ng      |
| 16) C17(187)                | 25.29    | 355598    | 6.76874   | ng      |
| 17) C16(128)                | 25.63    | 267623m   | 5.32241   | ng      |
| 18) C17(180)                | 27.16    | 387568m   | 6.50082   | ng      |
| 19) C17(170)                | 27.96    | 428248    | 6.52323   | ng      |
| 20) C18(195)                | 29.04    | 414645m   | 6.89137   | ng      |
| 21) C19(206)                | 30.31    | 382453m   | 6.71007   | ng      |
| 22) C110(209)               | 30.90    | 347709m   | 7.42735   | ng      |
| 25) C12(8) #2               | 13.10    | 802616m   | 5.67166   | ng      |
| 26) C13(18) #2              | 14.99    | 960228m   | 3.71052   | ng      |
| 28) C13(28) #2              | 17.76    | 1602974m  | 5.61523   | ng      |
| 29) C14(52) #2              | 19.15    | 1264264m  | 7.60506   | ng      |
| 30) C14(44) #2              | 19.96    | 1536160m  | 5.31701   | ng      |
| 31) C14(66) #2              | 22.36    | 2066003m  | 6.70173   | ng      |
| 32) C15(101) #2             | 23.25    | 1328891m  | 6.34922   | ng      |
| 35) C15(118) #2             | 26.36    | 2363946m  | 7.16574   | ng      |
| 36) C16(153) #2             | 26.93    | 2073017m  | 5.06758   | ng      |
| 37) C15(105) #2             | 27.20    | 2409303m  | 5.63519   | ng      |
| 38) C16(138) #2             | 27.78    | 1741525m  | 7.01275   | ng      |
| 39) C17(187) #2             | 28.14    | 2199646   | 6.60977   | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7585.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0424\M7585.D\ECD2B.CH  
 Acq On : 11-14-2014 07:42:36 PM Operator: RR  
 Sample : CD591MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:53 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:48 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2710662m | 6.03035 | ng    |
| 41) | C17(180) #2  | 29.59 | 2549440m | 6.66644 | ng    |
| 42) | C17(170) #2  | 30.21 | 2678474m | 6.67805 | ng    |
| 43) | C18(195) #2  | 31.09 | 2470276m | 6.87315 | ng    |
| 44) | C19(206) #2  | 32.18 | 2179825m | 6.84997 | ng    |
| 45) | C110(209) #2 | 32.62 | 1882155m | 7.40366 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7586.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0424\M7586.D\ECD2B.CH  
 Acq On : 11-14-2014 08:27:09 PM Operator: RR  
 Sample : CD592MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:52 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2569124m  | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 6000805m  | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 15234569m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.78    | 38036624m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 1983040m  | 83.47879  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 83.48% |
| 11) s C16(152)                     | 20.48    | 2878435   | 87.14791  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 86.80% |
| 27) s C13(34) #2                   | 16.47    | 12747654m | 85.57017  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 85.57% |
| 34) s C16(152) #2                  | 23.62    | 15077767m | 81.10110  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 80.78% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 115689    | 3.68864   | ng     |
| 3) C13(18)                         | 12.12    | 152619m   | 3.35434   | ng     |
| 5) C13(28)                         | 14.21    | 261947m   | 5.29379   | ng     |
| 6) C14(52)                         | 15.83    | 215574m   | 2.78448   | ng     |
| 7) C14(44)                         | 16.70    | 257467m   | 4.50132   | ng     |
| 8) C14(66)                         | 18.60    | 387323    | 7.40377   | ng     |
| 9) C15(101)                        | 19.73    | 313349m   | 6.42251   | ng     |
| 12) C15(118)                       | 22.39    | 373635m   | 5.90817   | ng     |
| 13) C16(153)                       | 23.43    | 259395m   | 5.21351   | ng     |
| 14) C15(105)                       | 23.45    | 474916m   | 6.62800   | ng     |
| 15) C16(138)                       | 24.54    | 416828m   | 5.65989   | ng     |
| 16) C17(187)                       | 25.29    | 373204m   | 5.85309   | ng     |
| 17) C16(128)                       | 25.63    | 327186m   | 5.62153   | ng     |
| 18) C17(180)                       | 27.16    | 422538m   | 5.95656   | ng     |
| 19) C17(170)                       | 27.96    | 464691m   | 5.95853   | ng     |
| 20) C18(195)                       | 29.04    | 466959m   | 6.60975   | ng     |
| 21) C19(206)                       | 30.31    | 442408m   | 6.65504   | ng     |
| 22) C110(209)                      | 30.90    | 402760m   | 7.37802   | ng     |
| 25) C12(8) #2                      | 13.10    | 750468m   | 4.98945   | ng     |
| 26) C13(18) #2                     | 14.99    | 931321m   | 3.27913   | ng     |
| 28) C13(28) #2                     | 17.76    | 1579665m  | 5.36885   | ng     |
| 29) C14(52) #2                     | 19.15    | 1184657m  | 6.78581   | ng     |
| 30) C14(44) #2                     | 19.96    | 1779042m  | 6.30104   | ng     |
| 31) C14(66) #2                     | 22.36    | 1906094m  | 5.87673   | ng     |
| 32) C15(101) #2                    | 23.24    | 1368916m  | 6.47842   | ng     |
| 35) C15(118) #2                    | 26.36    | 2027870m  | 5.33966   | ng     |
| 36) C16(153) #2                    | 26.93    | 1962462m  | 4.31718   | ng     |
| 37) C15(105) #2                    | 27.20    | 2338890m  | 5.19252   | ng     |
| 38) C16(138) #2                    | 27.78    | 1543992m  | 5.88877   | ng     |
| 39) C17(187) #2                    | 28.14    | 2121915m  | 6.00823   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7586.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0424\M7586.D\ECD2B.CH  
 Acq On : 11-14-2014 08:27:09 PM Operator: RR  
 Sample : CD592MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:54:57 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:52 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2565977m | 5.36386 | ng    |
| 41) | C17(180) #2  | 29.59 | 2419520m | 5.98820 | ng    |
| 42) | C17(170) #2  | 30.21 | 2579315m | 6.14048 | ng    |
| 43) | C18(195) #2  | 31.09 | 2409464m | 6.43314 | ng    |
| 44) | C19(206) #2  | 32.18 | 2164347m | 6.55822 | ng    |
| 45) | C110(209) #2 | 32.62 | 1883135m | 7.14530 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7587.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0424\M7587.D\ECD2B.CH  
 Acq On : 11-14-2014 09:11:36 PM Operator: RR  
 Sample : CD593MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:02 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2439258   | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 5663145m  | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 15372670m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 37000796m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 1901879   | 84.44313  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 84.44% |
| 11) s C16(152)                     | 20.48    | 2691749   | 86.28974  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 85.95% |
| 27) s C13(34) #2                   | 16.48    | 12682825m | 84.23711  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 84.24% |
| 34) s C16(152) #2                  | 23.62    | 16285997m | 90.07889  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 89.72% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 108053    | 3.56161   | ng     |
| 3) C13(18)                         | 12.12    | 143224m   | 3.25702   | ng     |
| 5) C13(28)                         | 14.21    | 258023    | 5.58557   | ng     |
| 6) C14(52)                         | 15.83    | 211955m   | 3.10786   | ng     |
| 7) C14(44)                         | 16.70    | 238754m   | 4.32123   | ng     |
| 8) C14(66)                         | 18.60    | 296955    | 5.43874   | ng     |
| 9) C15(101)                        | 19.73    | 283497m   | 6.03580   | ng     |
| 12) C15(118)                       | 22.39    | 357005m   | 6.02023   | ng     |
| 13) C16(153)                       | 23.43    | 241578m   | 5.13072   | ng     |
| 14) C15(105)                       | 23.45    | 373541m   | 5.09890   | ng     |
| 15) C16(138)                       | 24.54    | 396899    | 5.73289   | ng     |
| 16) C17(187)                       | 25.29    | 355405    | 5.92889   | ng     |
| 17) C16(128)                       | 25.63    | 325795m   | 5.96979   | ng     |
| 18) C17(180)                       | 27.16    | 395008m   | 5.88152   | ng     |
| 19) C17(170)                       | 27.96    | 445038m   | 6.07256   | ng     |
| 20) C18(195)                       | 29.04    | 433202m   | 6.46992   | ng     |
| 21) C19(206)                       | 30.31    | 409340m   | 6.49747   | ng     |
| 22) C110(209)                      | 30.90    | 368935m   | 7.11368   | ng     |
| 25) C12(8) #2                      | 13.11    | 727024m   | 4.68288   | ng     |
| 26) C13(18) #2                     | 14.99    | 824784m   | 2.21766   | ng     |
| 28) C13(28) #2                     | 17.76    | 1559517m  | 5.20790   | ng     |
| 29) C14(52) #2                     | 19.15    | 1211860m  | 6.91621   | ng     |
| 30) C14(44) #2                     | 19.96    | 1553517m  | 5.20570   | ng     |
| 31) C14(66) #2                     | 22.36    | 1836620m  | 5.51735   | ng     |
| 32) C15(101) #2                    | 23.25    | 1294995m  | 5.78809   | ng     |
| 35) C15(118) #2                    | 26.36    | 2192419m  | 6.35164   | ng     |
| 36) C16(153) #2                    | 26.93    | 2093670   | 5.13909   | ng     |
| 37) C15(105) #2                    | 27.20    | 2423375   | 5.66294   | ng     |
| 38) C16(138) #2                    | 27.78    | 1477669m  | 5.77661   | ng     |
| 39) C17(187) #2                    | 28.14    | 2070654   | 6.03619   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7587.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0424\M7587.D\ECD2B.CH  
 Acq On : 11-14-2014 09:11:36 PM Operator: RR  
 Sample : CD593MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:02 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:54:57 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2692107  | 5.95617 | ng    |
| 41) | C17(180) #2  | 29.59 | 2433589m | 6.25744 | ng    |
| 42) | C17(170) #2  | 30.22 | 2508538m | 6.13884 | ng    |
| 43) | C18(195) #2  | 31.09 | 2399735m | 6.61960 | ng    |
| 44) | C19(206) #2  | 32.18 | 2152556m | 6.73182 | ng    |
| 45) | C110(209) #2 | 32.62 | 1866817m | 7.31115 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7588.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0424\M7588.D\ECD2B.CH  
 Acq On : 11-14-2014 09:56:09 PM Operator: RR  
 Sample : CD594MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units  |
|-----------------------------|----------|-----------|-----------|--------|
| Internal Standards          |          |           |           |        |
| 1) I C15(96)                | 17.39    | 2425519m  | 100.00000 | ng     |
| 10) I C16(161)              | 23.21    | 5801937m  | 100.00000 | ng     |
| 24) I C15(96) #2            | 20.51    | 14204486m | 100.00000 | ng     |
| 33) I C16(161) #2           | 26.79    | 34469320m | 100.00000 | ng     |
| System Monitoring Compounds |          |           |           |        |
| 4) s C13(34)                | 13.40    | 1991439m  | 89.56667  | ng     |
| Spiked Amount               | 100.0000 | Recovery  | =         | 89.57% |
| 11) s C16(152)              | 20.48    | 2925820m  | 91.99877  | ng     |
| Spiked Amount               | 100.4000 | Recovery  | =         | 91.63% |
| 27) s C13(34) #2            | 16.48    | 12648562m | 91.70400  | ng     |
| Spiked Amount               | 100.0000 | Recovery  | =         | 91.70% |
| 34) s C16(152) #2           | 23.62    | 15201988m | 90.25789  | ng     |
| Spiked Amount               | 100.4000 | Recovery  | =         | 89.90% |
| Target Compounds            |          |           |           |        |
| 2) C12(8)                   | 10.21    | 122700    | 4.65253   | ng     |
| 3) C13(18)                  | 12.12    | 141312m   | 3.19271   | ng     |
| 5) C13(28)                  | 14.21    | 255846m   | 5.56277   | ng     |
| 6) C14(52)                  | 15.83    | 218183m   | 3.43970   | ng     |
| 7) C14(44)                  | 16.69    | 266419m   | 5.24367   | ng     |
| 8) C14(66)                  | 18.60    | 297838m   | 5.51000   | ng     |
| 9) C15(101)                 | 19.73    | 292743m   | 6.33672   | ng     |
| 12) C15(118)                | 22.39    | 402458m   | 6.93437   | ng     |
| 13) C16(153)                | 23.43 TW | 288652m   | 6.16350   | ng     |
| 14) C15(105)                | 23.44 TW | 354829m   | 4.54267   | ng     |
| 15) C16(138)                | 24.54    | 445500    | 6.51870   | ng     |
| 16) C17(187)                | 25.29    | 393762    | 6.61449   | ng     |
| 17) C16(128)                | 25.63    | 328857m   | 5.87147   | ng     |
| 18) C17(180)                | 27.15    | 431656m   | 6.40767   | ng     |
| 19) C17(170)                | 27.96    | 488397m   | 6.62879   | ng     |
| 20) C18(195)                | 29.04    | 477616m   | 7.08648   | ng     |
| 21) C19(206)                | 30.31    | 444607m   | 6.97232   | ng     |
| 22) C110(209)               | 30.90    | 402870m   | 7.68912   | ng     |
| 25) C12(8) #2               | 13.10    | 750966m   | 5.55193   | ng     |
| 26) C13(18) #2              | 14.99    | 854829m   | 3.14394   | ng     |
| 28) C13(28) #2              | 17.76    | 1401504m  | 5.00829   | ng     |
| 29) C14(52) #2              | 19.15    | 1320358m  | 8.63818   | ng     |
| 30) C14(44) #2              | 19.96    | 1423300m  | 5.14608   | ng     |
| 31) C14(66) #2              | 22.35    | 1844682m  | 6.17931   | ng     |
| 32) C15(101) #2             | 23.24    | 1295453m  | 6.64359   | ng     |
| 35) C15(118) #2             | 26.35    | 1785836m  | 5.08342   | ng     |
| 36) C16(153) #2             | 26.93    | 1925953m  | 5.02215   | ng     |
| 37) C15(105) #2             | 27.20    | 2336544m  | 5.93199   | ng     |
| 38) C16(138) #2             | 27.78    | 1503183m  | 6.40437   | ng     |
| 39) C17(187) #2             | 28.14    | 2096354m  | 6.80598   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7588.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0424\M7588.D\ECD2B.CH  
 Acq On : 11-14-2014 09:56:09 PM Operator: RR  
 Sample : CD594MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:05 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2619878m | 6.31923 | ng    |
| 41) | C17(180) #2  | 29.59 | 2443185m | 6.89374 | ng    |
| 42) | C17(170) #2  | 30.21 | 2612459m | 7.04563 | ng    |
| 43) | C18(195) #2  | 31.09 | 2480737m | 7.49737 | ng    |
| 44) | C19(206) #2  | 32.18 | 2248605m | 7.69311 | ng    |
| 45) | C110(209) #2 | 32.62 | 1928959m | 8.27763 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7589.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0424\M7589.D\ECD2B.CH  
 Acq On : 14 Nov 2014 10:40 pm Operator: RR  
 Sample : CD595MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2687310m  | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 6191104m  | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 14183601m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 36717472m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 2179183   | 88.30827  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 88.31% |
| 11) s C16(152)                     | 20.48    | 3060330   | 90.03038  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 89.67% |
| 27) s C13(34) #2                   | 16.47    | 13530108m | 99.02356  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 99.02% |
| 34) s C16(152) #2                  | 23.62    | 15480911m | 86.28775  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 85.94% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 137817m   | 4.77359   | ng     |
| 3) C13(18)                         | 12.12    | 152640    | 2.98656   | ng     |
| 5) C13(28)                         | 14.21    | 308377    | 6.27157   | ng     |
| 6) C14(52)                         | 15.83    | 259917m   | 4.17417   | ng     |
| 7) C14(44)                         | 16.70    | 282093    | 4.86810   | ng     |
| 8) C14(66)                         | 18.60    | 323216    | 5.33970   | ng     |
| 9) C15(101)                        | 19.73    | 337015m   | 6.65434   | ng     |
| 12) C15(118)                       | 22.39    | 446027m   | 7.32150   | ng     |
| 13) C16(153)                       | 23.43 TW | 338221m   | 6.87445   | ng     |
| 14) C15(105)                       | 23.44 TW | 392770m   | 4.80712   | ng     |
| 15) C16(138)                       | 24.54    | 460023    | 6.22770   | ng     |
| 16) C17(187)                       | 25.29    | 420045    | 6.61170   | ng     |
| 17) C16(128)                       | 25.63    | 363124m   | 6.10003   | ng     |
| 18) C17(180)                       | 27.16    | 470209m   | 6.58320   | ng     |
| 19) C17(170)                       | 27.96    | 532431m   | 6.80991   | ng     |
| 20) C18(195)                       | 29.04    | 511933    | 7.12548   | ng     |
| 21) C19(206)                       | 30.31    | 479200m   | 7.05646   | ng     |
| 22) C110(209)                      | 30.90    | 429264m   | 7.67551   | ng     |
| 25) C12(8) #2                      | 13.10    | 753308m   | 5.58983   | ng     |
| 26) C13(18) #2                     | 14.99    | 898646m   | 3.59537   | ng     |
| 28) C13(28) #2                     | 17.76    | 1498067m  | 5.50744   | ng     |
| 29) C14(52) #2                     | 19.15    | 1162102m  | 7.29390   | ng     |
| 30) C14(44) #2                     | 19.96    | 1509438m  | 5.57930   | ng     |
| 31) C14(66) #2                     | 22.36    | 1900851m  | 6.44386   | ng     |
| 32) C15(101) #2                    | 23.25    | 1232136m  | 6.11150   | ng     |
| 35) C15(118) #2                    | 26.36    | 2218758m  | 6.55179   | ng     |
| 36) C16(153) #2                    | 26.94    | 2158998m  | 5.50398   | ng     |
| 37) C15(105) #2                    | 27.20    | 2359603m  | 5.51830   | ng     |
| 38) C16(138) #2                    | 27.78    | 1491187m  | 5.89223   | ng     |
| 39) C17(187) #2                    | 28.14    | 2194580m  | 6.63976   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7589.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0424\M7589.D\ECD2B.CH  
 Acq On : 14 Nov 2014 10:40 pm Operator: RR  
 Sample : CD595MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:09 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:05 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2724491m | 6.11752 | ng    |
| 41) | C17(180) #2  | 29.58 | 2538798m | 6.67757 | ng    |
| 42) | C17(170) #2  | 30.21 | 2663192m | 6.67603 | ng    |
| 43) | C18(195) #2  | 31.08 | 2550716m | 7.18885 | ng    |
| 44) | C19(206) #2  | 32.18 | 2315604m | 7.39774 | ng    |
| 45) | C110(209) #2 | 32.62 | 2005759m | 8.04347 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7589.D MM0417C.M Tue Nov 25 10:32:14 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7590.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0424\M7590.D\ECD2B.CH  
 Acq On : 14 Nov 2014 11:25 pm Operator: RR  
 Sample : CD596MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:14 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc Units   |
|-----------------------------|----------|-----------|--------------|
| Internal Standards          |          |           |              |
| 1) I C15(96)                | 17.39    | 2609586   | 100.00000 ng |
| 10) I C16(161)              | 23.21    | 5835931   | 100.00000 ng |
| 24) I C15(96) #2            | 20.51    | 16036666m | 100.00000 ng |
| 33) I C16(161) #2           | 26.79    | 38071256m | 100.00000 ng |
| System Monitoring Compounds |          |           |              |
| 4) s C13(34)                | 13.40    | 2158995m  | 90.35099 ng  |
| Spiked Amount               | 100.0000 | Recovery  | = 90.35%     |
| 11) s C16(152)              | 20.48    | 3015385   | 94.45324 ng  |
| Spiked Amount               | 100.4000 | Recovery  | = 94.08%     |
| 27) s C13(34) #2            | 16.47    | 14351404m | 92.21464 ng  |
| Spiked Amount               | 100.0000 | Recovery  | = 92.21%     |
| 34) s C16(152) #2           | 23.62    | 17456721m | 93.82217 ng  |
| Spiked Amount               | 100.4000 | Recovery  | = 93.45%     |
| Target Compounds            |          |           |              |
| 2) C12(8)                   | 10.21    | 133149    | 4.72823 ng   |
| 3) C13(18)                  | 12.13    | 160066m   | 3.62737 ng   |
| 5) C13(28)                  | 14.21    | 284423m   | 5.83107 ng   |
| 6) C14(52)                  | 15.83    | 248381    | 4.00694 ng   |
| 7) C14(44)                  | 16.70    | 261200m   | 4.49179 ng   |
| 8) C14(66)                  | 18.60    | 343829    | 6.11631 ng   |
| 9) C15(101)                 | 19.73    | 307805m   | 6.15216 ng   |
| 12) C15(118)                | 22.38    | 428664m   | 7.52538 ng   |
| 13) C16(153)                | 23.44 TW | 267888m   | 5.60314 ng   |
| 14) C15(105)                | 23.45 TW | 440142m   | 6.19580 ng   |
| 15) C16(138)                | 24.54    | 422672m   | 6.00742 ng   |
| 16) C17(187)                | 25.29    | 376405m   | 6.16236 ng   |
| 17) C16(128)                | 25.63    | 333742m   | 5.93021 ng   |
| 18) C17(180)                | 27.16    | 417733m   | 6.08853 ng   |
| 19) C17(170)                | 27.96    | 466653m   | 6.20950 ng   |
| 20) C18(195)                | 29.04    | 461550m   | 6.74433 ng   |
| 21) C19(206)                | 30.30    | 427410m   | 6.60187 ng   |
| 22) C110(209)               | 30.90    | 385983m   | 7.24677 ng   |
| 25) C12(8) #2               | 13.10    | 866410m   | 5.73269 ng   |
| 26) C13(18) #2              | 14.99    | 1022995m  | 3.65689 ng   |
| 28) C13(28) #2              | 17.76    | 1447959m  | 4.40744 ng   |
| 29) C14(52) #2              | 19.15    | 1435757m  | 8.22023 ng   |
| 30) C14(44) #2              | 19.96    | 1776594m  | 5.88322 ng   |
| 31) C14(66) #2              | 22.36    | 2123349m  | 6.34115 ng   |
| 32) C15(101) #2             | 23.25    | 1372184m  | 5.95106 ng   |
| 35) C15(118) #2             | 26.36    | 2340002m  | 6.72832 ng   |
| 36) C16(153) #2             | 26.93    | 2268154m  | 5.63181 ng   |
| 37) C15(105) #2             | 27.20    | 2515981m  | 5.73234 ng   |
| 38) C16(138) #2             | 27.78    | 1601159m  | 6.13911 ng   |
| 39) C17(187) #2             | 28.14    | 2217252m  | 6.39724 ng   |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7590.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0424\M7590.D\ECD2B.CH  
 Acq On : 14 Nov 2014 11:25 pm Operator: RR  
 Sample : CD596MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:14 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:09 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2862466m | 6.22769 | ng    |
| 41) | C17(180) #2  | 29.59 | 2644486m | 6.71710 | ng    |
| 42) | C17(170) #2  | 30.21 | 2725835m | 6.57012 | ng    |
| 43) | C18(195) #2  | 31.09 | 2642070m | 7.18013 | ng    |
| 44) | C19(206) #2  | 32.18 | 2403408m | 7.40642 | ng    |
| 45) | C110(209) #2 | 32.62 | 2088368m | 8.08336 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7591.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0424\M7591.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:09 am Operator: RR  
 Sample : CD597MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2502889m  | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 5705689m  | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 14887066m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 35466959m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 2098335m  | 91.72788  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 91.73% |
| 11) s C16(152)                     | 20.48    | 3035935   | 97.50618  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 97.12% |
| 27) s C13(34) #2                   | 16.47    | 13641356m | 94.67716  | ng     |
| Spiked Amount                      | 100.0000 | Recovery  | =         | 94.68% |
| 34) s C16(152) #2                  | 23.62    | 16365905m | 94.41420  | ng     |
| Spiked Amount                      | 100.4000 | Recovery  | =         | 94.04% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 129854    | 4.87737   | ng     |
| 3) C13(18)                         | 12.13    | 157003m   | 3.82398   | ng     |
| 5) C13(28)                         | 14.21    | 285787m   | 6.22797   | ng     |
| 6) C14(52)                         | 15.83    | 230434    | 3.66905   | ng     |
| 7) C14(44)                         | 16.70    | 288520m   | 5.66326   | ng     |
| 8) C14(66)                         | 18.60    | 353866    | 6.76819   | ng     |
| 9) C15(101)                        | 19.73    | 295682m   | 6.16460   | ng     |
| 12) C15(118)                       | 22.38    | 431519m   | 7.84038   | ng     |
| 13) C16(153)                       | 23.43    | 239956m   | 5.04306   | ng     |
| 14) C15(105)                       | 23.45    | 420148m   | 5.98893   | ng     |
| 15) C16(138)                       | 24.54    | 433521m   | 6.42435   | ng     |
| 16) C17(187)                       | 25.29    | 381719m   | 6.48486   | ng     |
| 17) C16(128)                       | 25.63    | 362911m   | 6.67431   | ng     |
| 18) C17(180)                       | 27.16    | 423622m   | 6.39033   | ng     |
| 19) C17(170)                       | 27.96    | 474631m   | 6.53007   | ng     |
| 20) C18(195)                       | 29.04    | 458443m   | 6.87777   | ng     |
| 21) C19(206)                       | 30.31    | 410594m   | 6.46262   | ng     |
| 22) C110(209)                      | 30.90    | 384039m   | 7.40355   | ng     |
| 25) C12(8) #2                      | 13.10    | 807076m   | 5.76177   | ng     |
| 26) C13(18) #2                     | 14.99    | 930885m   | 3.47768   | ng     |
| 28) C13(28) #2                     | 17.76    | 1167900m  | 3.55886   | ng     |
| 29) C14(52) #2                     | 19.15    | 1418557m  | 8.92328   | ng     |
| 30) C14(44) #2                     | 19.96    | 1558062m  | 5.45652   | ng     |
| 31) C14(66) #2                     | 22.36    | 2090600m  | 6.85269   | ng     |
| 32) C15(101) #2                    | 23.24    | 1311714m  | 6.26397   | ng     |
| 35) C15(118) #2                    | 26.36    | 2138768m  | 6.53054   | ng     |
| 36) C16(153) #2                    | 26.93    | 2036842m  | 5.27822   | ng     |
| 37) C15(105) #2                    | 27.20    | 2422256m  | 5.99187   | ng     |
| 38) C16(138) #2                    | 27.78    | 1631552m  | 6.81308   | ng     |
| 39) C17(187) #2                    | 28.14    | 2265561m  | 7.29098   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7591.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0424\M7591.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:09 am Operator: RR  
 Sample : CD597MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:17 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:13 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc    | Units |
|-----|--------------|-------|----------|---------|-------|
| 40) | C16(128) #2  | 28.54 | 2785144m | 6.60106 | ng    |
| 41) | C17(180) #2  | 29.58 | 2462024m | 6.71161 | ng    |
| 42) | C17(170) #2  | 30.21 | 2605103m | 6.78033 | ng    |
| 43) | C18(195) #2  | 31.09 | 2565494m | 7.54243 | ng    |
| 44) | C19(206) #2  | 32.18 | 2318505m | 7.71161 | ng    |
| 45) | C110(209) #2 | 32.62 | 2003637m | 8.37085 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7593.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0424\M7593.D\ECD2B.CH  
 Acq On : 11-15-2014 01:38:30 AM Operator: RR  
 Sample : CD809PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sample PB. 5-128 14-04 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound | R.T. | Response | Conc | Units |
|----------|------|----------|------|-------|
|----------|------|----------|------|-------|

Internal Standards

|       |             |       |           |           |    |
|-------|-------------|-------|-----------|-----------|----|
| 1) I  | C15(96)     | 17.39 | 3101992   | 100.00000 | ng |
| 10) I | C16(161)    | 23.21 | 6288454m  | 100.00000 | ng |
| 24) I | C15(96) #2  | 20.51 | 15650758m | 100.00000 | ng |
| 33) I | C16(161) #2 | 26.79 | 35927334m | 100.00000 | ng |

System Monitoring Compounds

|               |             |          |           |           |         |
|---------------|-------------|----------|-----------|-----------|---------|
| 4) s          | C13(34)     | 13.40    | 7674828m  | 357.23788 | ng      |
| Spiked Amount |             | 400.0000 | Recovery  | =         | 89.31%  |
| 11) s         | C16(152)    | 20.48    | 11361197m | 390.47764 | ng      |
| Spiked Amount |             | 401.6000 | Recovery  | =         | 97.23%  |
| 27) s         | C13(34) #2  | 16.47    | 46967480m | 404.89011 | ng      |
| Spiked Amount |             | 400.0000 | Recovery  | =         | 101.22% |
| 34) s         | C16(152) #2 | 23.62    | 65784872m | 338.78708 | ng      |
| Spiked Amount |             | 401.6000 | Recovery  | =         | 84.36%  |

Target Compounds

|     |             |      |    |      |    |
|-----|-------------|------|----|------|----|
| 2)  | C12(8)      | 0.00 | 0d | N.D. | ng |
| 3)  | C13(18)     | 0.00 | 0d | N.D. | ng |
| 5)  | C13(28)     | 0.00 | 0d | N.D. | ng |
| 6)  | C14(52)     | 0.00 | 0d | N.D. | ng |
| 7)  | C14(44)     | 0.00 | 0d | N.D. | ng |
| 8)  | C14(66)     | 0.00 | 0d | N.D. | ng |
| 9)  | C15(101)    | 0.00 | 0d | N.D. | ng |
| 12) | C15(118)    | 0.00 | 0d | N.D. | ng |
| 13) | C16(153)    | 0.00 | 0d | N.D. | ng |
| 14) | C15(105)    | 0.00 | 0d | N.D. | ng |
| 15) | C16(138)    | 0.00 | 0d | N.D. | ng |
| 16) | C17(187)    | 0.00 | 0d | N.D. | ng |
| 17) | C16(128)    | 0.00 | 0d | N.D. | ng |
| 18) | C17(180)    | 0.00 | 0d | N.D. | ng |
| 19) | C17(170)    | 0.00 | 0d | N.D. | ng |
| 20) | C18(195)    | 0.00 | 0d | N.D. | ng |
| 21) | C19(206)    | 0.00 | 0d | N.D. | ng |
| 22) | C110(209)   | 0.00 | 0d | N.D. | ng |
| 25) | C12(8) #2   | 0.00 | 0d | N.D. | ng |
| 26) | C13(18) #2  | 0.00 | 0d | N.D. | ng |
| 28) | C13(28) #2  | 0.00 | 0d | N.D. | ng |
| 29) | C14(52) #2  | 0.00 | 0d | N.D. | ng |
| 30) | C14(44) #2  | 0.00 | 0d | N.D. | ng |
| 31) | C14(66) #2  | 0.00 | 0d | N.D. | ng |
| 32) | C15(101) #2 | 0.00 | 0d | N.D. | ng |
| 35) | C15(118) #2 | 0.00 | 0d | N.D. | ng |
| 36) | C16(153) #2 | 0.00 | 0d | N.D. | ng |
| 37) | C15(105) #2 | 0.00 | 0d | N.D. | ng |
| 38) | C16(138) #2 | 0.00 | 0d | N.D. | ng |
| 39) | C17(187) #2 | 0.00 | 0d | N.D. | ng |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7593.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0424\M7593.D\ECD2B.CH  
 Acq On : 11-15-2014 01:38:30 AM Operator: RR  
 Sample : CD809PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sample PB. 5-128 14-04 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:22 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T. | Response | Conc | Units |
|-----|--------------|------|----------|------|-------|
| 40) | C16(128) #2  | 0.00 | 0d       | N.D. | ng    |
| 41) | C17(180) #2  | 0.00 | 0d       | N.D. | ng    |
| 42) | C17(170) #2  | 0.00 | 0d       | N.D. | ng    |
| 43) | C18(195) #2  | 0.00 | 0d       | N.D. | ng    |
| 44) | C19(206) #2  | 0.00 | 0d       | N.D. | ng    |
| 45) | C110(209) #2 | 0.00 | 0d       | N.D. | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7594.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0424\M7594.D\ECD2B.CH  
 Acq On : 11-15-2014 02:22:58 AM Operator: RR  
 Sample : CD810LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sample LCS. 5 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units   |      |
|-----------------------------|----------|-----------|-----------|---------|------|
| Internal Standards          |          |           |           |         |      |
| 1) I C15(96)                | 17.39    | 3035862   | 100.00000 | ng      |      |
| 10) I C16(161)              | 23.21    | 5933033m  | 100.00000 | ng      |      |
| 24) I C15(96) #2            | 20.51    | 16224367m | 100.00000 | ng      |      |
| 33) I C16(161) #2           | 26.79    | 37774570  | 100.00000 | ng      |      |
| System Monitoring Compounds |          |           |           |         |      |
| 4) s C13(34)                | 13.40    | 7421658   | 350.48100 | ng      | 88%  |
| Spiked Amount               | 400.0000 | Recovery  | =         | 87.62%  |      |
| 11) s C16(152)              | 20.48    | 10985951  | 402.84842 | ng      | 100% |
| Spiked Amount               | 401.6000 | Recovery  | =         | 100.31% |      |
| 27) s C13(34) #2            | 16.47    | 48475124m | 402.13311 | ng      | 101% |
| Spiked Amount               | 400.0000 | Recovery  | =         | 100.53% |      |
| 34) s C16(152) #2           | 23.62    | 70587967m | 344.75380 | ng      | 86%  |
| Spiked Amount               | 401.6000 | Recovery  | =         | 85.85%  |      |
| Target Compounds            |          |           |           |         |      |
| 2) C12(8)                   | 10.21    | 497692    | 24.71016  | ng      | 66%  |
| 3) C13(18)                  | 12.12    | 637985    | 25.10222  | ng      | 67%  |
| 5) C13(28)                  | 14.21    | 1135215m  | 26.40032  | ng      | 70%  |
| 6) C14(52)                  | 15.83    | 856567m   | 24.64691  | ng      | 66%  |
| 7) C14(44)                  | 16.70    | 1144520m  | 26.19557  | ng      | 70%  |
| 8) C14(66)                  | 18.60    | 1249928m  | 25.33650  | ng      | 68%  |
| 9) C15(101)                 | 19.74    | 1454440m  | 30.81994  | ng      | 82%  |
| 12) C15(118)                | 22.39    | 1357152m  | 30.27106  | ng      | 81%  |
| 13) C16(153)                | 23.43    | 1203123m  | 28.67619  | ng      | 76%  |
| 14) C15(105)                | 23.45    | 1481621m  | 26.75859  | ng      | 71%  |
| 15) C16(138)                | 24.54    | 1766114m  | 32.68298  | ng      | 87%  |
| 16) C17(187)                | 25.29    | 1514396m  | 32.00316  | ng      | 85%  |
| 17) C16(128)                | 25.63    | 1632983m  | 31.52682  | ng      | 84%  |
| 18) C17(180)                | 27.16    | 1817452m  | 32.82487  | ng      | 88%  |
| 19) C17(170)                | 27.96    | 2031207   | 32.45710  | ng      | 87%  |
| 20) C18(195)                | 29.04    | 1993853m  | 34.09214  | ng      | 91%  |
| 21) C19(206)                | 30.31    | 1891273m  | 33.56670  | ng      | 90%  |
| 22) C110(209)               | 30.90    | 1659142m  | 36.14174  | ng      | 96%  |
| 25) C12(8) #2               | 13.10    | 3193790m  | 28.43599  | ng      | 76%  |
| 26) C13(18) #2              | 14.99    | 3660722m  | 27.08923  | ng      | 72%  |
| 28) C13(28) #2              | 17.76    | 6887337m  | 28.74588  | ng      | 77%  |
| 29) C14(52) #2              | 19.14    | 4364108m  | 30.51569  | ng      | 81%  |
| 30) C14(44) #2              | 19.96    | 6746369m  | 27.46158  | ng      | 73%  |
| 31) C14(66) #2              | 22.36    | 8408705m  | 31.27162  | ng      | 83%  |
| 32) C15(101) #2             | 23.24    | 4519803m  | 29.37607  | ng      | 78%  |
| 35) C15(118) #2             | 26.35    | 8254032m  | 33.57993  | ng      | 90%  |
| 36) C16(153) #2             | 26.93    | 8334202   | 32.08555  | ng      | 86%  |
| 37) C15(105) #2             | 27.20    | 11025503m | 32.03171  | ng      | 85%  |
| 38) C16(138) #2             | 27.78    | 7964427m  | 34.55361  | ng      | 92%  |
| 39) C17(187) #2             | 28.14    | 8885358   | 34.26270  | ng      | 91%  |

(f)=RT-Delta->-1/2-Window------(m)=manual-int-----  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7594.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0424\M7594.D\ECD2B.CH  
 Acq On : 11-15-2014 02:22:58 AM Operator: RR  
 Sample : CD810LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sample LCS. 5 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:28 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |      |
|-----|--------------|-------|-----------|----------|-------|------|
| 40) | C16(128) #2  | 28.54 | 12197999  | 33.68762 | ng    | 90%  |
| 41) | C17(180) #2  | 29.59 | 11228410  | 34.80095 | ng    | 93%  |
| 42) | C17(170) #2  | 30.21 | 11900504m | 33.91894 | ng    | 90%  |
| 43) | C18(195) #2  | 31.08 | 11317765m | 35.26922 | ng    | 94%  |
| 44) | C19(206) #2  | 32.18 | 10339476m | 35.78198 | ng    | 95%  |
| 45) | C110(209) #2 | 32.62 | 8675559m  | 38.50015 | ng    | 103% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7595.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0424\M7595.D\ECD2B.CH  
 Acq On : 11-15-2014 03:07:21 AM Operator: RR  
 Sample : M8168-P(2) Inst : INST. M  
 Misc : NBH14-0073 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units   |
|-----------------------------|----------|-----------|-----------|---------|
| Internal Standards          |          |           |           |         |
| 1) I C15(96)                | 17.39    | 2850968   | 95.00000  | ng      |
| 10) I C16(161)              | 23.21    | 5597103m  | 95.00000  | ng      |
| 24) I C15(96) #2            | 20.51    | 14306291m | 95.00000  | ng      |
| 33) I C16(161) #2           | 26.79    | 33011727m | 95.00000  | ng      |
| System Monitoring Compounds |          |           |           |         |
| 4) s C13(34)                | 13.40    | 6998883   | 335.17232 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 88.23%  |
| 11) s C16(152)              | 20.48    | 9514966m  | 343.79439 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 90.14%  |
| 27) s C13(34) #2            | 16.47    | 42943227m | 384.79145 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 101.30% |
| 34) s C16(152) #2           | 23.62    | 56481439m | 303.54197 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 79.59%  |
| Target Compounds            |          |           |           |         |
| 2) C12(8)                   | 10.20    | 124523m   | 3.28152   | ng      |
| 3) C13(18)                  | 12.13    | 125374m   | 1.12075   | ng      |
| 5) C13(28)                  | 14.20    | 602342m   | 13.01096  | ng      |
| 6) C14(52)                  | 15.83    | 432268m   | 9.65689   | ng      |
| 7) C14(44)                  | 16.70    | 254322m   | 3.47040   | ng      |
| 8) C14(66)                  | 18.60    | 715028m   | 13.51071  | ng      |
| 9) C15(101)                 | 19.71    | 650826m   | 12.93114  | ng      |
| 12) C15(118)                | 22.39    | 1186194m  | 26.39152  | ng      |
| 13) C16(153)                | 23.42    | 851290m   | 20.11124  | ng      |
| 14) C15(105)                | 23.45    | 457064m   | 6.57455   | ng      |
| 15) C16(138)                | 24.53    | 1195426m  | 21.52910  | ng      |
| 16) C17(187)                | 25.28    | 181667m   | 1.77712   | ng      |
| 17) C16(128)                | 25.62    | 347224m   | 6.16775   | ng      |
| 18) C17(180)                | 27.16    | 219031m   | 2.29795   | ng      |
| 19) C17(170)                | 27.96    | 186577m   | 1.49882   | ng      |
| 20) C18(195)                | 29.03    | 43855m    | BelowCal  | ng      |
| 21) C19(206)                | 30.30    | 63848m    | BelowCal  | ng      |
| 22) C110(209)               | 30.90    | 17592m    | BelowCal  | ng      |
| 25) C12(8) #2               | 13.10    | 658991m   | 4.26671   | ng      |
| 26) C13(18) #2              | 14.99    | 676780m   | 1.25250   | ng      |
| 28) C13(28) #2              | 17.76    | 3165678m  | 13.16378  | ng      |
| 29) C14(52) #2              | 19.14    | 2113338m  | 14.59374  | ng      |
| 30) C14(44) #2              | 19.96    | 1247033m  | 4.02723   | ng      |
| 31) C14(66) #2              | 22.35    | 4204755m  | 15.85737  | ng      |
| 32) C15(101) #2             | 23.23    | 2120152m  | 12.93786  | ng      |
| 35) C15(118) #2             | 26.33    | 6687412m  | 29.30550  | ng      |
| 36) C16(153) #2             | 26.93    | 5521885m  | 22.16893  | ng      |
| 37) C15(105) #2             | 27.20    | 2455699m  | 6.37177   | ng      |
| 38) C16(138) #2             | 27.77    | 4613954m  | 21.55692  | ng      |
| 39) C17(187) #2             | 28.13    | 1122119m  | 2.42181   | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7595.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0424\M7595.D\ECD2B.CH  
 Acq On : 11-15-2014 03:07:21 AM Operator: RR  
 Sample : M8168-P(2) Inst : INST. M  
 Misc : NBH14-0073 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:31 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 1951045m | 4.20734  | ng    |
| 41) | C17(180) #2  | 29.59 | 1218064m | 2.52290  | ng    |
| 42) | C17(170) #2  | 30.21 | 1121622m | 2.18116  | ng    |
| 43) | C18(195) #2  | 31.08 | 180168m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 138385m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 99439m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0424\M7596.D\ECD1A.CH Vial: 17  
 Acq On : 11-15-2014 03:51:50 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0073 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0424\M7596.D\ECD2B.CH Vial: 17  
 Acq On : 11-15-2014 03:51:51 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Nov 24 14:55:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)

Title : NBH  
 Last Update : Mon Nov 24 14:55:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                    | R.T.     | Response  | Conc      | Units   |
|-----------------------------|----------|-----------|-----------|---------|
| Internal Standards          |          |           |           |         |
| 1) I C15(96)                | 17.39    | 3068867m  | 95.00000  | ng      |
| 10) I C16(161)              | 23.21    | 6334278m  | 95.00000  | ng      |
| 24) I C15(96) #2            | 20.51    | 15728055m | 95.00000  | ng      |
| 33) I C16(161) #2           | 26.79    | 36206660m | 95.00000  | ng      |
| System Monitoring Compounds |          |           |           |         |
| 4) s C13(34)                | 13.40    | 8058715m  | 374.90125 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 98.69%  |
| 11) s C16(152)              | 20.48    | 10917043m | 349.69517 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 91.69%  |
| 27) s C13(34) #2            | 16.47    | 46893263m | 380.78197 | ng      |
| Spiked Amount               | 379.8670 | Recovery  | =         | 100.24% |
| 34) s C16(152) #2           | 23.62    | 63893124m | 311.77014 | ng      |
| Spiked Amount               | 381.3865 | Recovery  | =         | 81.75%  |
| Target Compounds            |          |           |           |         |
| 2) C12(8)                   | 10.21    | 137193m   | 3.45059   | ng      |
| 3) C13(18)                  | 12.13    | 121889m   | 0.55213   | ng      |
| 5) C13(28)                  | 14.20    | 552920m   | 10.72938  | ng      |
| 6) C14(52)                  | 15.83    | 480019m   | 10.15649  | ng      |
| 7) C14(44)                  | 16.70    | 262918    | 3.21202   | ng      |
| 8) C14(66)                  | 18.60    | 872458m   | 15.69383  | ng      |
| 9) C15(101)                 | 19.72    | 922377    | 17.60777  | ng      |
| 12) C15(118)                | 22.39    | 1511042m  | 30.14013  | ng      |
| 13) C16(153)                | 23.43    | 1198113m  | 25.31931  | ng      |
| 14) C15(105)                | 23.45    | 584950m   | 7.75526   | ng      |
| 15) C16(138)                | 24.53    | 1464203m  | 23.51289  | ng      |
| 16) C17(187)                | 25.29    | 249465m   | 2.65734   | ng      |
| 17) C16(128)                | 25.62    | 410748m   | 6.47725   | ng      |
| 18) C17(180)                | 27.15    | 266877m   | 2.61995   | ng      |
| 19) C17(170)                | 27.96    | 250089m   | 2.07841   | ng      |
| 20) C18(195)                | 29.04    | 50140m    | BelowCal  | ng      |
| 21) C19(206)                | 30.30    | 58355m    | BelowCal  | ng      |
| 22) C110(209)               | 30.90    | 20831m    | BelowCal  | ng      |
| 25) C12(8) #2               | 13.10    | 707257m   | 4.10470   | ng      |
| 26) C13(18) #2              | 14.99    | 653847m   | 0.48161   | ng      |
| 28) C13(28) #2              | 17.76    | 3607869m  | 13.72325  | ng      |
| 29) C14(52) #2              | 19.14    | 2281830m  | 14.28417  | ng      |
| 30) C14(44) #2              | 19.95    | 1347721m  | 3.92961   | ng      |
| 31) C14(66) #2              | 22.36    | 5108709m  | 17.75194  | ng      |
| 32) C15(101) #2             | 23.22    | 2982415m  | 17.72220  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Data File : I:\M\DATA\SM0424\M7596.D\ECD1A.CH Vial: 17  
 Acq On : 11-15-2014 03:51:50 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0073 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0424\M7596.D\ECD2B.CH Vial: 17  
 Acq On : 11-15-2014 03:51:51 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e

Quant Time: Nov 24 14:55:36 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)

Title : NBH  
 Last Update : Mon Nov 24 14:55:31 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 35) | C15(118) #2  | 26.33 | 8061477m | 32.57638 | ng    |
| 36) | C16(153) #2  | 26.93 | 6499670m | 24.07775 | ng    |
| 37) | C15(105) #2  | 27.20 | 2950389m | 7.16309  | ng    |
| 38) | C16(138) #2  | 27.78 | 5633289m | 24.07731 | ng    |
| 39) | C17(187) #2  | 28.13 | 1383190m | 3.05717  | ng    |
| 40) | C16(128) #2  | 28.54 | 2362760m | 4.86159  | ng    |
| 41) | C17(180) #2  | 29.58 | 1387670m | 2.69239  | ng    |
| 42) | C17(170) #2  | 30.21 | 1198897m | 2.08777  | ng    |
| 43) | C18(195) #2  | 31.08 | 249900m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 155953m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 178288m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7597.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0424\M7597.D\ECD2B.CH  
 Acq On : 11-15-2014 04:36:11 AM Operator: RR  
 Sample : M8170-P(2) Inst : INST. M  
 Misc : NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 3230472   | 95.00000  | ng      |
| 10) I C16(161)                     | 23.21    | 6779955m  | 95.00000  | ng      |
| 24) I C15(96) #2                   | 20.51    | 16143311m | 95.00000  | ng      |
| 33) I C16(161) #2                  | 26.78    | 39733010m | 95.00000  | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 8355161   | 365.18272 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 96.13%  |
| 11) s C16(152)                     | 20.48    | 11842797m | 355.57679 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 93.23%  |
| 27) s C13(34) #2                   | 16.47    | 48953194m | 390.97536 | ng      |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 102.92% |
| 34) s C16(152) #2                  | 23.62    | 68285249m | 304.71772 | ng      |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 79.90%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 54482m    | BelowCal  | ng      |
| 3) C13(18)                         | 12.18    | 113157m   | BelowCal  | ng      |
| 5) C13(28)                         | 14.20    | 187184m   | 1.84354   | ng      |
| 6) C14(52)                         | 15.83    | 133931m   | BelowCal  | ng      |
| 7) C14(44)                         | 16.70    | 61985m    | BelowCal  | ng      |
| 8) C14(66)                         | 18.60    | 207420m   | 1.48185   | ng      |
| 9) C15(101)                        | 19.71    | 142748m   | 1.14122   | ng      |
| 12) C15(118)                       | 22.39    | 403802m   | 5.24160   | ng      |
| 13) C16(153)                       | 23.43 TW | 209447m   | 3.24866   | ng      |
| 14) C15(105)                       | 23.44 TW | 188975m   | 0.66628   | ng      |
| 15) C16(138)                       | 24.53    | 385746m   | 3.97794   | ng      |
| 16) C17(187)                       | 25.29    | 82416m    | BelowCal  | ng      |
| 17) C16(128)                       | 25.62    | 101532m   | 0.99704   | ng      |
| 18) C17(180)                       | 27.15    | 51791m    | BelowCal  | ng      |
| 19) C17(170)                       | 27.96    | 92458m    | BelowCal  | ng      |
| 20) C18(195)                       | 29.08    | 47857m    | BelowCal  | ng      |
| 21) C19(206)                       | 30.31    | 35374m    | BelowCal  | ng      |
| 22) C110(209)                      | 30.90    | 19394m    | BelowCal  | ng      |
| 25) C12(8) #2                      | 13.10    | 216867m   | BelowCal  | ng      |
| 26) C13(18) #2                     | 14.97    | 535242m   | BelowCal  | ng      |
| 28) C13(28) #2                     | 17.76    | 887618m   | 1.78564   | ng      |
| 29) C14(52) #2                     | 19.15    | 951566m   | 4.27421   | ng      |
| 30) C14(44) #2                     | 19.95    | 233196m   | BelowCal  | ng      |
| 31) C14(66) #2                     | 22.35    | 925733m   | 1.49163   | ng      |
| 32) C15(101) #2                    | 23.22    | 832272m   | 1.67173   | ng      |
| 35) C15(118) #2                    | 26.33    | 2220646m  | 5.48952   | ng      |
| 36) C16(153) #2                    | 26.93    | 1798166m  | 3.10953   | ng      |
| 37) C15(105) #2                    | 27.20    | 924806m   | 0.66170   | ng      |
| 38) C16(138) #2                    | 27.78    | 1428076m  | 4.83881   | ng      |
| 39) C17(187) #2                    | 28.13    | 580505m   | BelowCal  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7597.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0424\M7597.D\ECD2B.CH  
 Acq On : 11-15-2014 04:36:11 AM Operator: RR  
 Sample : M8170-P(2) Inst : INST. M  
 Misc : NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:55:41 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:35 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 739007m  | BelowCal | ng    |
| 41) | C17(180) #2  | 29.58 | 502756m  | BelowCal | ng    |
| 42) | C17(170) #2  | 30.21 | 367039m  | BelowCal | ng    |
| 43) | C18(195) #2  | 31.09 | 107914m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.17 | 67306m   | BelowCal | ng    |
| 45) | C110(209) #2 | 32.64 | 81590m   | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7598.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0424\M7598.D\ECD2B.CH  
 Acq On : 11-15-2014 05:20:43 AM Operator: RR  
 Sample : M8170MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:58:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:58:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 2970125   | 100.00000 | ng     |
| 10) I C16(161)                     | 23.21    | 5741188   | 100.00000 | ng     |
| 24) I C15(96) #2                   | 20.51    | 15108158m | 100.00000 | ng     |
| 33) I C16(161) #2                  | 26.79    | 34521468m | 100.00000 | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 7194364   | 345.44000 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 86.36% |
| 11) s C16(152)                     | 20.48    | 10185071m | 381.62227 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 95.03% |
| 27) s C13(34) #2                   | 16.47    | 44456324m | 392.81027 | ng     |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 98.20% |
| 34) s C16(152) #2                  | 23.62    | 71647425m | 377.01301 | ng     |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 93.88% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 795765    | 43.82703  | ng     |
| 3) C13(18)                         | 12.12    | 1003214m  | 44.28924  | ng     |
| 5) C13(28)                         | 14.20    | 1881370m  | 47.20436  | ng     |
| 6) C14(52)                         | 15.83    | 1394986   | 46.08118  | ng     |
| 7) C14(44)                         | 16.70    | 1857600m  | 46.31467  | ng     |
| 8) C14(66)                         | 18.60    | 2099366   | 46.22158  | ng     |
| 9) C15(101)                        | 19.74    | 2408475m  | 54.15442  | ng     |
| 12) C15(118)                       | 22.39    | 2231316m  | 54.30792  | ng     |
| 13) C16(153)                       | 23.43    | 2043868m  | 51.67662  | ng     |
| 14) C15(105)                       | 23.45    | 2604154m  | 51.71902  | ng     |
| 15) C16(138)                       | 24.54    | 2854521   | 56.76339  | ng     |
| 16) C17(187)                       | 25.29    | 2425545   | 55.08421  | ng     |
| 17) C16(128)                       | 25.63    | 2530776m  | 51.41714  | ng     |
| 18) C17(180)                       | 27.16    | 2856817   | 54.85821  | ng     |
| 19) C17(170)                       | 27.96    | 3110113m  | 52.61184  | ng     |
| 20) C18(195)                       | 29.04    | 3074674m  | 55.53231  | ng     |
| 21) C19(206)                       | 30.30    | 2854556m  | 53.36854  | ng     |
| 22) C110(209)                      | 30.90    | 2467728m  | 56.79143  | ng     |
| 25) C12(8) #2                      | 13.10    | 4875798m  | 49.18819  | ng     |
| 26) C13(18) #2                     | 14.99    | 5807011m  | 50.97708  | ng     |
| 28) C13(28) #2                     | 17.76    | 9140331m  | 42.21423  | ng     |
| 29) C14(52) #2                     | 19.14    | 6963654m  | 55.31182  | ng     |
| 30) C14(44) #2                     | 19.95    | 13945991m | 64.88459  | ng     |
| 31) C14(66) #2                     | 22.35    | 12502948m | 51.77046  | ng     |
| 32) C15(101) #2                    | 23.23    | 8619160m  | 63.71158  | ng     |
| 35) C15(118) #2                    | 26.34    | 10655429m | 49.07579  | ng     |
| 36) C16(153) #2                    | 26.93    | 12254170m | 54.05095  | ng     |
| 37) C15(105) #2                    | 27.20    | 16790014m | 54.34575  | ng     |
| 38) C16(138) #2                    | 27.78    | 12068823m | 57.30314  | ng     |
| 39) C17(187) #2                    | 28.14    | 13819646  | 59.91818  | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7598.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0424\M7598.D\ECD2B.CH  
 Acq On : 11-15-2014 05:20:43 AM Operator: RR  
 Sample : M8170MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:58:23 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:58:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 18203026m | 56.00723 | ng    |
| 41) | C17(180) #2  | 29.58 | 16813087m | 57.78047 | ng    |
| 42) | C17(170) #2  | 30.21 | 18120590m | 57.08350 | ng    |
| 43) | C18(195) #2  | 31.08 | 17078878m | 58.59963 | ng    |
| 44) | C19(206) #2  | 32.18 | 15185002m | 57.76551 | ng    |
| 45) | C110(209) #2 | 32.62 | 12583596m | 61.62972 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7599.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0424\M7599.D\ECD2B.CH  
 Acq On : 11-15-2014 06:05:17 AM Operator: RR  
 Sample : M8170MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0081 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:58:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:58:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units   |
|------------------------------------|----------|-----------|-----------|---------|
| <b>Internal Standards</b>          |          |           |           |         |
| 1) I C15(96)                       | 17.39    | 3392393   | 100.00000 | ng      |
| 10) I C16(161)                     | 23.21    | 6732509m  | 100.00000 | ng      |
| 24) I C15(96) #2                   | 20.51    | 15484225m | 100.00000 | ng      |
| 33) I C16(161) #2                  | 26.79    | 37347352m | 100.00000 | ng      |
| <b>System Monitoring Compounds</b> |          |           |           |         |
| 4) s C13(34)                       | 13.40    | 8894544m  | 393.56935 | ng      |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 98.39%  |
| 11) s C16(152)                     | 20.48    | 12823270  | 417.68939 | ng      |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 104.01% |
| 27) s C13(34) #2                   | 16.47    | 48285821m | 430.41640 | ng      |
| Spiked Amount                      | 400.0000 | Recovery  | =         | 107.60% |
| 34) s C16(152) #2                  | 23.62    | 83479539m | 401.33939 | ng      |
| Spiked Amount                      | 401.6000 | Recovery  | =         | 99.94%  |
| <b>Target Compounds</b>            |          |           |           |         |
| 2) C12(8)                          | 10.21    | 990212    | 48.33950  | ng      |
| 3) C13(18)                         | 12.12    | 1213253   | 47.34677  | ng      |
| 5) C13(28)                         | 14.21    | 2380027m  | 52.78389  | ng      |
| 6) C14(52)                         | 15.83    | 1746134   | 51.34862  | ng      |
| 7) C14(44)                         | 16.70    | 2279412m  | 50.15286  | ng      |
| 8) C14(66)                         | 18.60    | 2623138   | 51.01654  | ng      |
| 9) C15(101)                        | 19.74    | 2876634m  | 56.80340  | ng      |
| 12) C15(118)                       | 22.39    | 2753695m  | 57.41643  | ng      |
| 13) C16(153)                       | 23.43    | 2530735m  | 54.69879  | ng      |
| 14) C15(105)                       | 23.45    | 3277217m  | 55.88263  | ng      |
| 15) C16(138)                       | 24.53    | 3650574   | 62.25918  | ng      |
| 16) C17(187)                       | 25.29    | 2994206m  | 58.18733  | ng      |
| 17) C16(128)                       | 25.63    | 3694492m  | 64.60814  | ng      |
| 18) C17(180)                       | 27.16    | 3554165m  | 58.37076  | ng      |
| 19) C17(170)                       | 27.96    | 3928000m  | 56.85307  | ng      |
| 20) C18(195)                       | 29.04    | 3875157m  | 59.85853  | ng      |
| 21) C19(206)                       | 30.31    | 3660590m  | 58.55928  | ng      |
| 22) C110(209)                      | 30.90    | 3147197m  | 62.00941  | ng      |
| 25) C12(8) #2                      | 13.10    | 5396962m  | 53.53826  | ng      |
| 26) C13(18) #2                     | 14.99    | 6148442m  | 52.93270  | ng      |
| 28) C13(28) #2                     | 17.76    | 11667667m | 53.47972  | ng      |
| 29) C14(52) #2                     | 19.14    | 7439396m  | 57.89472  | ng      |
| 30) C14(44) #2                     | 19.96    | 11996617m | 53.72982  | ng      |
| 31) C14(66) #2                     | 22.35    | 14361290m | 58.49684  | ng      |
| 32) C15(101) #2                    | 23.24    | 7840881m  | 56.27666  | ng      |
| 35) C15(118) #2                    | 26.34    | 13234534m | 56.95422  | ng      |
| 36) C16(153) #2                    | 26.93    | 13925064m | 56.96758  | ng      |
| 37) C15(105) #2                    | 27.20    | 19509701m | 58.44513  | ng      |
| 38) C16(138) #2                    | 27.78    | 15240662m | 66.73482  | ng      |
| 39) C17(187) #2                    | 28.14    | 15066657m | 60.39675  | ng      |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7599.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0424\M7599.D\ECD2B.CH  
 Acq On : 11-15-2014 06:05:17 AM Operator: RR  
 Sample : M8170MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0081 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:58:52 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:58:47 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response  | Conc     | Units |
|-----|--------------|-------|-----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 20996154m | 59.78811 | ng    |
| 41) | C17(180) #2  | 29.58 | 19352614m | 61.51669 | ng    |
| 42) | C17(170) #2  | 30.21 | 21138744m | 61.57651 | ng    |
| 43) | C18(195) #2  | 31.08 | 20025768m | 63.50444 | ng    |
| 44) | C19(206) #2  | 32.18 | 18451520m | 64.85977 | ng    |
| 45) | C110(209) #2 | 32.62 | 15199263m | 68.85353 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7600.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0424\M7600.D\ECD2B.CH  
 Acq On : 11-15-2014 06:49:47 AM Operator: RR  
 Sample : M8171-P1(2) Inst : INST. M  
 Misc : NBH14-0085 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 15:03:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 15:03:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3402257m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 6882455m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 16555565m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.79    | 38457295m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8188977   | 324.93850 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 85.54% |
| 11) s C16(152)                     | 20.48    | 11543119m | 338.11375 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 88.65% |
| 27) s C13(34) #2                   | 16.47    | 45006703m | 332.13658 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 87.43% |
| 34) s C16(152) #2                  | 23.62    | 60978505m | 284.09264 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 74.49% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.21    | 159683m   | 3.81779   | ng     |
| 3) C13(18)                         | 12.13    | 129114m   | 0.31617   | ng     |
| 5) C13(28)                         | 14.20    | 1047276   | 20.14591  | ng     |
| 6) C14(52)                         | 15.83    | 421783m   | 6.78364   | ng     |
| 7) C14(44)                         | 16.70    | 270801m   | 2.76779   | ng     |
| 8) C14(66)                         | 18.60    | 821792m   | 12.90849  | ng     |
| 9) C15(101)                        | 19.72    | 599213m   | 9.57308   | ng     |
| 12) C15(118)                       | 22.39    | 1478635m  | 26.80068  | ng     |
| 13) C16(153)                       | 23.42    | 947504m   | 18.09047  | ng     |
| 14) C15(105)                       | 23.45    | 559320m   | 6.53115   | ng     |
| 15) C16(138)                       | 24.53    | 1344026m  | 19.46725  | ng     |
| 16) C17(187)                       | 25.28    | 214286m   | 1.60915   | ng     |
| 17) C16(128)                       | 25.62    | 376506m   | 5.36042   | ng     |
| 18) C17(180)                       | 27.16    | 215241m   | 1.45442   | ng     |
| 19) C17(170)                       | 27.96    | 209691m   | 1.22857   | ng     |
| 20) C18(195)                       | 29.03    | 32365m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.29    | 48934m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.90    | 19879m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 853024m   | 5.07529   | ng     |
| 26) C13(18) #2                     | 14.99    | 673162m   | 0.35920   | ng     |
| 28) C13(28) #2                     | 17.76    | 3935112m  | 14.29615  | ng     |
| 29) C14(52) #2                     | 19.15    | 2026991m  | 11.63615  | ng     |
| 30) C14(44) #2                     | 19.95    | 1361871m  | 3.70321   | ng     |
| 31) C14(66) #2                     | 22.35    | 4200709m  | 13.40076  | ng     |
| 32) C15(101) #2                    | 23.23    | 1772278m  | 8.15929   | ng     |
| 35) C15(118) #2                    | 26.33    | 7690203m  | 28.88052  | ng     |
| 36) C16(153) #2                    | 26.93    | 5373162m  | 17.87135  | ng     |
| 37) C15(105) #2                    | 27.20    | 3004375m  | 6.78802   | ng     |
| 38) C16(138) #2                    | 27.78    | 5097057m  | 20.40288  | ng     |
| 39) C17(187) #2                    | 28.13    | 1526550m  | 3.28223   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7600.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0424\M7600.D\ECD2B.CH  
 Acq On : 11-15-2014 06:49:47 AM Operator: RR  
 Sample : M8171-P1(2) Inst : INST. M  
 Misc : NBH14-0085 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 15:03:08 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 15:03:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 2258423m | 4.16736  | ng    |
| 41) | C17(180) #2  | 29.58 | 1241544m | 1.97526  | ng    |
| 42) | C17(170) #2  | 30.21 | 1017569m | 1.36840  | ng    |
| 43) | C18(195) #2  | 31.08 | 149137m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 152950m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.62 | 135176m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS



Signal #1 : I:\M\DATA\SM0424\M7601.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0424\M7601.D\ECD2B.CH  
 Acq On : 11-15-2014 07:34:10 AM Operator: RR  
 Sample : M8388-P(2) Inst : INST. M  
 Misc : NBH14-0105 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:56:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound                           | R.T.     | Response  | Conc      | Units  |
|------------------------------------|----------|-----------|-----------|--------|
| <b>Internal Standards</b>          |          |           |           |        |
| 1) I C15(96)                       | 17.39    | 3424533m  | 95.00000  | ng     |
| 10) I C16(161)                     | 23.21    | 6773303m  | 95.00000  | ng     |
| 24) I C15(96) #2                   | 20.51    | 16614511m | 95.00000  | ng     |
| 33) I C16(161) #2                  | 26.78    | 38220879m | 95.00000  | ng     |
| <b>System Monitoring Compounds</b> |          |           |           |        |
| 4) s C13(34)                       | 13.40    | 8576659   | 346.12127 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 91.12% |
| 11) s C16(152)                     | 20.48    | 11098324m | 328.57993 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 86.15% |
| 27) s C13(34) #2                   | 16.47    | 47927865m | 362.15142 | ng     |
| Spiked Amount                      | 379.8670 | Recovery  | =         | 95.34% |
| 34) s C16(152) #2                  | 23.62    | 60308036m | 282.88045 | ng     |
| Spiked Amount                      | 381.3865 | Recovery  | =         | 74.17% |
| <b>Target Compounds</b>            |          |           |           |        |
| 2) C12(8)                          | 10.20    | 170787m   | 4.30189   | ng     |
| 3) C13(18)                         | 12.13    | 135021m   | 0.51338   | ng     |
| 5) C13(28)                         | 14.20    | 774477m   | 14.10528  | ng     |
| 6) C14(52)                         | 15.83    | 423231m   | 6.74390   | ng     |
| 7) C14(44)                         | 16.70    | 247357m   | 2.23002   | ng     |
| 8) C14(66)                         | 18.60    | 717407m   | 10.82807  | ng     |
| 9) C15(101)                        | 19.72    | 520861m   | 8.03104   | ng     |
| 12) C15(118)                       | 22.39    | 1480207m  | 27.32017  | ng     |
| 13) C16(153)                       | 23.42    | 1176922m  | 23.15326  | ng     |
| 14) C15(105)                       | 23.45    | 486330m   | 5.48719   | ng     |
| 15) C16(138)                       | 24.53    | 1387093m  | 20.53800  | ng     |
| 16) C17(187)                       | 25.28    | 267912m   | 2.67906   | ng     |
| 17) C16(128)                       | 25.62    | 411799m   | 6.03127   | ng     |
| 18) C17(180)                       | 27.16    | 248060m   | 2.02853   | ng     |
| 19) C17(170)                       | 27.96    | 219536m   | 1.41186   | ng     |
| 20) C18(195)                       | 29.04    | 41959m    | BelowCal  | ng     |
| 21) C19(206)                       | 30.30    | 70898m    | BelowCal  | ng     |
| 22) C110(209)                      | 30.90    | 29821m    | BelowCal  | ng     |
| 25) C12(8) #2                      | 13.10    | 733537m   | 3.98382   | ng     |
| 26) C13(18) #2                     | 14.99    | 686108m   | 0.44449   | ng     |
| 28) C13(28) #2                     | 17.76    | 3999852m  | 14.50700  | ng     |
| 29) C14(52) #2                     | 19.14    | 1719203m  | 9.42815   | ng     |
| 30) C14(44) #2                     | 19.95    | 1241151m  | 3.20436   | ng     |
| 31) C14(66) #2                     | 22.35    | 3465107m  | 10.64680  | ng     |
| 32) C15(101) #2                    | 23.22    | 2081572m  | 10.28042  | ng     |
| 35) C15(118) #2                    | 26.33    | 7527827m  | 28.39015  | ng     |
| 36) C16(153) #2                    | 26.93    | 6039704m  | 20.72666  | ng     |
| 37) C15(105) #2                    | 27.20    | 2933918m  | 6.63639   | ng     |
| 38) C16(138) #2                    | 27.77    | 5435839m  | 21.94844  | ng     |
| 39) C17(187) #2                    | 28.13    | 1951617m  | 4.99597   | ng     |

(f)=RT-Delta->-1/2-Window------(m)=manual-int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7601.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0424\M7601.D\ECD2B.CH  
 Acq On : 11-15-2014 07:34:10 AM Operator: RR  
 Sample : M8388-P(2) Inst : INST. M  
 Misc : NBH14-0105 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Nov 24 14:56:46 2014 Quant Results File: MM0417C.RES

Quant Method : I:\M\DATA\MM0417C.M (Chemstation Integrator)  
 Title : NBH  
 Last Update : Mon Nov 24 14:55:40 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

|     | Compound     | R.T.  | Response | Conc     | Units |
|-----|--------------|-------|----------|----------|-------|
| 40) | C16(128) #2  | 28.54 | 2395171m | 4.58625  | ng    |
| 41) | C17(180) #2  | 29.58 | 1338494m | 2.30005  | ng    |
| 42) | C17(170) #2  | 30.21 | 994949m  | 1.32209  | ng    |
| 43) | C18(195) #2  | 31.08 | 192332m  | BelowCal | ng    |
| 44) | C19(206) #2  | 32.18 | 179587m  | BelowCal | ng    |
| 45) | C110(209) #2 | 32.64 | 297871m  | BelowCal | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7582.D\ECD1A.CH Vial: 3  
 Signal #2 : I:\M\DATA\SM0424\M7582.D\ECD2B.CH  
 Acq On : 11-14-2014 05:28:55 PM Operator: RR  
 Sample : CD588PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sodium Sulfate lot # 1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:41:57 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 09:54:19 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2164245   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.52 | 14712577m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 0.00  | 0d        | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d        | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7582.D MM0417F.M Mon Dec 08 13:24:21 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7583.D\ECD1A.CH Vial: 4  
 Signal #2 : I:\M\DATA\SM0424\M7583.D\ECD2B.CH  
 Acq On : 11-14-2014 06:13:22 PM Operator: RR  
 Sample : CD589LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sodium Sulfa Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:03 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:41:56 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.39 | 2270924   | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.52 | 15266855m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.74 | 1328263m  | 37.25666  | ng    | 99% |
| 5) C15(101) #2     | 23.21 | 11889354m | 36.88300  | ng    | 98% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7584.D\ECD1A.CH Vial: 5  
 Signal #2 : I:\M\DATA\SM0424\M7584.D\ECD2B.CH  
 Acq On : 11-14-2014 06:57:58 PM Operator: RR  
 Sample : CD590MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:08 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:01 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| -----              |       |           |           |       |
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2530448   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15423635m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 348837m   | 7.32694   | ng    |
| 5) C15(101) #2     | 23.23 | 3040622m  | 9.81468   | ng    |
| -----              |       |           |           |       |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7585.D\ECD1A.CH Vial: 6  
 Signal #2 : I:\M\DATA\SM0424\M7585.D\ECD2B.CH  
 Acq On : 11-14-2014 07:42:36 PM Operator: RR  
 Sample : CD591MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:13 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:06 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2263263   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15016002m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 314298m   | 7.39408   | ng    |
| 5) C15(101) #2     | 23.22 | 2793562m  | 9.31525   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7585.D MM0417F.M Mon Dec 08 13:24:26 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7586.D\ECD1A.CH Vial: 7  
 Signal #2 : I:\M\DATA\SM0424\M7586.D\ECD2B.CH  
 Acq On : 11-14-2014 08:27:09 PM Operator: RR  
 Sample : CD592MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:19 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:11 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2631530   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15278184m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 361693m   | 7.29977   | ng    |
| 5) C15(101) #2     | 23.22 | 2893628m  | 9.46621   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7586.D MM0417F.M Mon Dec 08 13:24:28 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7587.D\ECD1A.CH Vial: 8  
 Signal #2 : I:\M\DATA\SM0424\M7587.D\ECD2B.CH  
 Acq On : 11-14-2014 09:11:36 PM Operator: RR  
 Sample : CD593MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:24 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:17 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2439258   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15384670m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 334503m   | 7.27906   | ng    |
| 5) C15(101) #2     | 23.23 | 3039167m  | 9.83290   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7587.D MM0417F.M Mon Dec 08 13:24:30 2014 046776CFS



Signal #1 : I:\M\DATA\SM0424\M7588.D\ECD1A.CH Vial: 9  
 Signal #2 : I:\M\DATA\SM0424\M7588.D\ECD2B.CH  
 Acq On : 11-14-2014 09:56:09 PM Operator: RR  
 Sample : CD594MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:29 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:22 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| -----              |       |           |           |       |
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2654343   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14296280m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 359054m   | 7.15566   | ng    |
| 5) C15(101) #2     | 23.22 | 2799665m  | 9.75577   | ng    |
| -----              |       |           |           |       |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7589.D\ECD1A.CH Vial: 10  
 Signal #2 : I:\M\DATA\SM0424\M7589.D\ECD2B.CH  
 Acq On : 14 Nov 2014 10:40 pm Operator: RR  
 Sample : CD595MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:34 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:27 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2634253   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14387298m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 361717m   | 7.29096   | ng    |
| 5) C15(101) #2     | 23.23 | 2891333m  | 9.98685   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7589.D MM0417F.M Mon Dec 08 13:24:34 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7590.D\ECD1A.CH Vial: 11  
 Signal #2 : I:\M\DATA\SM0424\M7590.D\ECD2B.CH  
 Acq On : 14 Nov 2014 11:25 pm Operator: RR  
 Sample : CD596MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:38 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:32 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2609586   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15921435m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 356789m   | 7.25186   | ng    |
| 5) C15(101) #2     | 23.22 | 3055287m  | 9.57875   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7590.D MM0417F.M Mon Dec 08 13:24:36 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7591.D\ECD1A.CH Vial: 12  
 Signal #2 : I:\M\DATA\SM0424\M7591.D\ECD2B.CH  
 Acq On : 15 Nov 2014 12:09 am Operator: RR  
 Sample : CD597MDL-P(0) Inst : INST. M  
 Misc : Method Detection Limits. Method Detectio Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:42 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:36 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2507219   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14980909m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.73 | 343735m   | 7.27673   | ng    |
| 5) C15(101) #2     | 23.22 | 2929887m  | 9.74421   | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7591.D MM0417F.M Mon Dec 08 13:24:38 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7593.D\ECD1A.CH Vial: 14  
 Signal #2 : I:\M\DATA\SM0424\M7593.D\ECD2B.CH  
 Acq On : 11-15-2014 01:38:30 AM Operator: RR  
 Sample : CD809PB-P(0) Inst : INST. M  
 Misc : Procedural Blank. Sample PB. 5-128 14-04 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:52 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:45 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3101992   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15628154m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 0.00  | 0d        | N.D.      | ng    |
| 5) C15(101) #2     | 0.00  | 0d        | N.D.      | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7593.D MM0417F.M Mon Dec 08 13:24:41 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7594.D\ECD1A.CH Vial: 15  
 Signal #2 : I:\M\DATA\SM0424\M7594.D\ECD2B.CH  
 Acq On : 11-15-2014 02:22:58 AM Operator: RR  
 Sample : CD810LCS-P(0) Inst : INST. M  
 Misc : Laboratory Control Sample. Sample LCS. 5 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:42:56 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:50 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |     |
|--------------------|-------|-----------|-----------|-------|-----|
| Internal Standards |       |           |           |       |     |
| 1) I C15(96)       | 17.39 | 3035862   | 100.00000 | ng    |     |
| 4) I C15(96) #2    | 20.51 | 16237338m | 100.00000 | ng    |     |
| Target Compounds   |       |           |           |       |     |
| 2) C15(101)        | 19.74 | 1518277m  | 31.53109  | ng    | 84% |
| 5) C15(101) #2     | 23.20 | 12523203m | 36.52145  | ng    | 97% |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS

Signal #1 : I:\M\DATA\SM0424\M7595.D\ECD1A.CH Vial: 16  
 Signal #2 : I:\M\DATA\SM0424\M7595.D\ECD2B.CH  
 Acq On : 11-15-2014 03:07:21 AM Operator: RR  
 Sample : M8168-P(2) Inst : INST. M  
 Misc : NBH14-0073 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:02 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:42:55 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 2850968   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 14541305m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 841989    | 16.90803 | ng    |
| 5) C15(101) #2     | 23.23 | 4932249m  | 15.44631 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7595.D MM0417F.M Mon Dec 08 13:24:44 2014 046776CFS

Data File : I:\M\DATA\SM0424\M7596.D\ECD1A.CH Vial: 17  
 Acq On : 11-15-2014 03:51:50 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Lab Duplicate of NBH14-0073 5-128 14-049 Multiplr: 1.00  
 IntFile : events.e

Data File : I:\M\DATA\SM0424\M7596.D\ECD2B.CH Vial: 17  
 Acq On : 11-15-2014 03:51:51 AM Operator: RR  
 Sample : M8168DUP-P(2) Inst : INST. M  
 Misc : Multiplr: 1.00  
 IntFile : events2.e  
 Quant Time: Dec 08 11:43:06 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:00 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3155710   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15605301m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 922377    | 16.71492 | ng    |
| 5) C15(101) #2     | 23.22 | 5749292m  | 16.71821 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7596.D MM0417F.M Mon Dec 08 13:24:46 2014 046776CFS



Signal #1 : I:\M\DATA\SM0424\M7597.D\ECD1A.CH Vial: 18  
 Signal #2 : I:\M\DATA\SM0424\M7597.D\ECD2B.CH  
 Acq On : 11-15-2014 04:36:11 AM Operator: RR  
 Sample : M8170-P(2) Inst : INST. M  
 Misc : NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:09 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:04 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3230472   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16224014m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.71 | 314364    | 4.41138  | ng    |
| 5) C15(101) #2     | 23.22 | 1359725m  | 4.50693  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7597.D MM0417F.M Mon Dec 08 13:24:48 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7598.D\ECD1A.CH Vial: 19  
 Signal #2 : I:\M\DATA\SM0424\M7598.D\ECD2B.CH  
 Acq On : 11-15-2014 05:20:43 AM Operator: RR  
 Sample : M8170MS-P(0) Inst : INST. M  
 Misc : Matrix Spike of NBH14-0081 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:13 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:08 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 2970125   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15250466m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 2205001m  | 47.95501  | ng    |
| 5) C15(101) #2     | 23.22 | 15546289m | 48.65313  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7598.D MM0417F.M Mon Dec 08 13:24:50 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7599.D\ECD1A.CH Vial: 20  
 Signal #2 : I:\M\DATA\SM0424\M7599.D\ECD2B.CH  
 Acq On : 11-15-2014 06:05:17 AM Operator: RR  
 Sample : M8170MSD-P(0) Inst : INST. M  
 Misc : Matrix Spike Duplicate of NBH14-0081 5-1 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:16 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:12 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc      | Units |
|--------------------|-------|-----------|-----------|-------|
| Internal Standards |       |           |           |       |
| 1) I C15(96)       | 17.39 | 3392393   | 100.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 15643142m | 100.00000 | ng    |
| Target Compounds   |       |           |           |       |
| 2) C15(101)        | 19.74 | 2787996m  | 53.38305  | ng    |
| 5) C15(101) #2     | 23.21 | 17463621m | 53.50263  | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7599.D MM0417F.M Mon Dec 08 13:24:52 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7600.D\ECD1A.CH Vial: 21  
 Signal #2 : I:\M\DATA\SM0424\M7600.D\ECD2B.CH  
 Acq On : 11-15-2014 06:49:47 AM Operator: RR  
 Sample : M8171-P1(2) Inst : INST. M  
 Misc : NBH14-0085 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:18 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:15 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3568658   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16482538m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 807618    | 12.53885 | ng    |
| 5) C15(101) #2     | 23.22 | 5119060m  | 14.20525 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7600.D MM0417F.M Mon Dec 08 13:24:54 2014 046776CFS

Signal #1 : I:\M\DATA\SM0424\M7601.D\ECD1A.CH Vial: 22  
 Signal #2 : I:\M\DATA\SM0424\M7601.D\ECD2B.CH  
 Acq On : 11-15-2014 07:34:10 AM Operator: RR  
 Sample : M8388-P(2) Inst : INST. M  
 Misc : NBH14-0105 5-128 14-0497 Multiplr: 1.00  
 IntFile Signal #1: events.e IntFile Signal #2: events2.e  
 Quant Time: Dec 08 11:43:22 2014 Quant Results File: MM0417F.RES

Quant Method : I:\M\DATA\MM0417F.M (Chemstation Integrator)  
 Title : NBH 101 only to compliment B method  
 Last Update : Mon Dec 08 11:43:18 2014  
 Response via : Initial Calibration  
 DataAcq Meth : 5-128S.M  
 RIS/SIS Mult : NA  
 Volume Inj. :  
 Signal #1 Phase : Signal #2 Phase:  
 Signal #1 Info : Signal #2 Info :

| Compound           | R.T.  | Response  | Conc     | Units |
|--------------------|-------|-----------|----------|-------|
| Internal Standards |       |           |          |       |
| 1) I C15(96)       | 17.39 | 3645171   | 95.00000 | ng    |
| 4) I C15(96) #2    | 20.51 | 16286767m | 95.00000 | ng    |
| Target Compounds   |       |           |          |       |
| 2) C15(101)        | 19.72 | 735771m   | 10.99395 | ng    |
| 5) C15(101) #2     | 23.22 | 4829931m  | 13.59866 | ng    |

(f)=RT Delta > 1/2 Window (m)=manual int.  
 (E) = > 2 \* high standard response (e) = > 1 \* high standard response  
 (T) = Match R.T. (TW) = Near Match R.T.  
 (\*) = Not Verified to LIMS  
 M7601.D MM0417F.M Mon Dec 08 13:24:56 2014 046776CFS

**Appendix F**  
Benthic Infauna Laboratory Data Report

## QUALITY ASSURANCE STATEMENT

*Client/Project:* Battelle

*Work Assignment Title:* New Bedford Harbor

*Description of Data Set or Deliverable:* 158 Benthic macroinvertebrate samples collected in September 2014; Modified Van Veen grabs.

*Description of audit and review activities:* Judged accuracy rates were well above standard levels for taxonomy. Laboratory QC reports were completed.

Copies of QC results follow (see attachment.) All taxonomic data were entered into the computer and printed. This list was checked for accuracy against original taxonomic data sheets.

*Description of outstanding issues or deficiencies, which may affect data quality:* None



27 May 2015

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Signature of QA Officer or Reviewer

Date



27 May 2015

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Signature of Project Manager

Date

## QUALITY CONTROL REWORKS

Client/Project: Battelle

Work Assignment Title: New Bedford Harbor

Description of Data Set : 158 Benthic macroinvertebrate samples

| Sorting Results: | Sample #                   | Orig. Tech. | Verif. Tech. | # in sample | # in resort | % Accuracy |
|------------------|----------------------------|-------------|--------------|-------------|-------------|------------|
|                  | NBH14-0023-253-14LTM-REP 2 | DC          | SMC          | 29          | 0           | 100%       |
|                  | NBH14-0034-235-14LTM-REP1  | DC          | SMC          | 22          | 0           | 100%       |
|                  | NBH14-0039-240-14LTM-REP2  | DC          | SMC          | 6           | 0           | 100%       |
|                  | NBH14-0082-346-14LTM-REP1  | DC          | SMC          | 310         | 0           | 100%       |
|                  | NBH14-0087-340-14LTM-REP2  | DC          | SMC          | 501         | 0           | 100%       |
|                  | NBH14-0098-335-14LTM-REP1  | DC          | SMC          | 616         | 0           | 100%       |
|                  | NBH14-0139-309-14LTM-REP2  | DC          | SMC          | 131         | 0           | 100%       |
|                  | NBH14-0143-310-14LTM-REP2  | DC          | SMC          | 29          | 0           | 100%       |
|                  | NBH14-0038-240-14LTM-REP1  | SMC         | DC           | 0           | 0           | 100%       |
|                  | NBH14-0051-140-14LTM-REP2  | SMC         | DC           | 736         | 0           | 100%       |
|                  | NBH14-0138-309-14LTM-REP1  | SMC         | DC           | 120         | 0           | 100%       |
|                  | NBH14-0142-310-14LTM-REP1  | SMC         | DC           | 44          | 0           | 100%       |
|                  | NBH14-0179-247-14LTM-REP2  | SMC         | DC           | 393         | 0           | 100%       |
|                  | NBH14-0270-332-14LTM-REP1  | MF          | DC           | 213         | 0           | 100%       |
|                  | NBH14-0316-217-14LTM-REP2  | HRC         | DC           | 237         | 0           | 100%       |
|                  | NBH14-0290-325-14LTM-REP1  | LS          | DC           | 658         | 0           | 100%       |
|                  | NBH14-0274-338-14LTM-REP1  | BG          | DC           | 306         | 0           | 100%       |

| Taxonomy Result | Sample #                  | Orig. Taxon. | Verif. Taxon. | Taxa       | # Errors | % Accuracy |
|-----------------|---------------------------|--------------|---------------|------------|----------|------------|
|                 | NBH14-0022-253-14LTM-REP1 | TH           | LS            | CRUST/MOLL | 1        | 96%        |
|                 | NBH14-0035-235-14LTM-REP2 | TH           | LS            | CRUST/MOLL | 0        | 100%       |
|                 | NBH14-0046-146-14LTM-REP1 | TH           | LS            | CRUST/MOLL | 1        | 96%        |
|                 | NBH14-0062-147-14LTM-REP1 | TH           | LS            | CRUST/MOLL | 1        | 97%        |
|                 | NBH14-0074-333-14LTM-REP1 | TH           | LS            | CRUST/MOLL | 5        | 98%        |
|                 | NBH14-0138-309-14LTM-REP1 | TH           | LS            | CRUST/MOLL | 2        | 98%        |
|                 | NBH14-0159-109-14LTM-REP1 | TH           | BG            | CRUST/MOLL | 0        | 100%       |
|                 | NBH14-0170-139-14LTM-REP1 | TH           | BG            | CRUST/MOLL | 1        | 95%        |
|                 | NBH14-0328-204-14LTM-REP2 | TH           | BG            | CRUST/MOLL | 4        | 98%        |
|                 | NBH14-0226-126-14LTM-REP2 | BG           | TH            | CRUST/MOLL | 7        | 99%        |
|                 | NBH14-0070-155-14LTM-REP2 | BG           | TH            | CRUST/MOLL | 6        | 99%        |
|                 | NBH14-0171-139-14LTM-REP2 | BG           | TH            | CRUST/MOLL | 0        | 100%       |
|                 | NBH14-0110-345-14LTM-REP1 | BG           | TH            | CRUST/MOLL | 8        | 98%        |
|                 | NBH14-0102-349-14LTM-REP1 | BG           | TH            | CRUST/MOLL | 2        | 98%        |
|                 | NBH14-0200-230-14LTM-REP1 | BG           | TH            | CRUST/MOLL | 2        | 97%        |
|                 | NBH14-0238-222-14LTM-REP1 | BG           | TH            | CRUST/MOLL | 0        | 100%       |
|                 | NBH14-0212-111-14LTM-REP1 | JO           | PG            | ANNELIDA   | 3        | 99%        |
|                 | NBH14-0278-324-14LTM-REP2 | HS           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0212-111-14LTM-REP1 | JO           | PG            | ANNELIDA   | 3        | 99%        |
|                 | NBH14-0287-324-14LTM-REP2 | HS           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0262-208-14LTM-REP1 | HS           | PG            | ANNELIDA   | 3        | 99%        |
|                 | NBH14-0122-306-14LTM-REP1 | HS           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0099-335-14LTM-REP2 | HS           | PG            | ANNELIDA   | 1        | 99%        |
|                 | NBH14-0078-339-14LTM-REP1 | HS           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0070-155-14LTM-REP1 | HS           | PG            | ANNELIDA   | 3        | 99%        |
|                 | NBH14-0050-140-14LTM-REP1 | BG           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0022-253-14LTM-REP1 | BG           | PG            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0010-130-14LTM-REP1 | BG           | PG            | ANNELIDA   | 2        | 99%        |
|                 | NBH14-0230-108-14LTM-REP2 | JO           | PG            | ANNELIDA   | 3        | 99%        |
|                 | NBH14-0312-227-14LTM-REP2 | PG           | HS            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0226-126-14LTM-REP2 | PG           | HS            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0171-139-14LTM-REP2 | PG           | HS            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0171-139-14LTM-REP2 | PG           | HS            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0102-349-14LTM-REP1 | PG           | HS            | ANNELIDA   | 0        | 100%       |
|                 | NBH14-0131-249-14LTM-REP2 | PG           | HS            | ANNELIDA   | 1        | 99%        |

*James Stiller*

27-May-15

Signature of QA Officer or Reviewer

Date



| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|------|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|------|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|------|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|------|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|--------|
| NBH14-0002-120 | 1   | 807          | 23          | 20175.0 | 25.0             | 31             | 26900.0      | 2152           | 9510.6       | 2.8     | 2.08         | 0.61        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 1345         | 27          | 33625.0 |                  |                |              |                |              |         |              |             | NBH14-0006-125 | 1 | 1237 | 23 | 30925.0 | 22.5 | 31 | 34387.5 | 2751 | 4896.7 | 0.7 | 1.62 | 0.47 | 2 | 1514 | 22 | 37850.0 | NBH14-0010-130 | 1 | 850  | 14 | 21250.0 | 14.5 | 17 | 22750.0 | 1820 | 2121.3 | 0.7 | 0.60 | 0.21 | 2 | 970  | 15 | 24250.0 | NBH14-0014-134 | 1 | 979  | 17 | 24475.0 | 19.5 | 24 | 33425.0 | 2674 | ?      | 3.5 | 1.53 | 0.48 | 2 | 1695 | 22 | 42375.0 | NBH14-0018-150 | 1 | 847  | 26 | 21175.0 | 24.0 | 32 | 23325.0 | 1866 | 3040.6 | 2.8 | 1.79 | 0.52 | 2 | 1019 | 22 | 25475.0 | NBH14-0022-253 | 1 | 42   | 15 | 1050.0  | 13.0 | 19 | 887.5   | 71   | 229.8  | 2.8 | 2.46 | 0.84 | 2 | 29  | 11 | 725.0   | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701 | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272 | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55  | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6   | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311 | 33 | 7775.0 | 33.0 | 39 | 8775.0 |
| NBH14-0006-125 | 1   | 1237         | 23          | 30925.0 | 22.5             | 31             | 34387.5      | 2751           | 4896.7       | 0.7     | 1.62         | 0.47        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 1514         | 22          | 37850.0 |                  |                |              |                |              |         |              |             | NBH14-0010-130 | 1 | 850  | 14 | 21250.0 | 14.5 | 17 | 22750.0 | 1820 | 2121.3 | 0.7 | 0.60 | 0.21 | 2 | 970  | 15 | 24250.0 | NBH14-0014-134 | 1 | 979  | 17 | 24475.0 | 19.5 | 24 | 33425.0 | 2674 | ?      | 3.5 | 1.53 | 0.48 | 2 | 1695 | 22 | 42375.0 | NBH14-0018-150 | 1 | 847  | 26 | 21175.0 | 24.0 | 32 | 23325.0 | 1866 | 3040.6 | 2.8 | 1.79 | 0.52 | 2 | 1019 | 22 | 25475.0 | NBH14-0022-253 | 1 | 42   | 15 | 1050.0  | 13.0 | 19 | 887.5   | 71   | 229.8  | 2.8 | 2.46 | 0.84 | 2 | 29   | 11 | 725.0   | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701 | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272 | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55  | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6   | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |     |    |        |      |    |        |
| NBH14-0010-130 | 1   | 850          | 14          | 21250.0 | 14.5             | 17             | 22750.0      | 1820           | 2121.3       | 0.7     | 0.60         | 0.21        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 970          | 15          | 24250.0 |                  |                |              |                |              |         |              |             | NBH14-0014-134 | 1 | 979  | 17 | 24475.0 | 19.5 | 24 | 33425.0 | 2674 | ?      | 3.5 | 1.53 | 0.48 | 2 | 1695 | 22 | 42375.0 | NBH14-0018-150 | 1 | 847  | 26 | 21175.0 | 24.0 | 32 | 23325.0 | 1866 | 3040.6 | 2.8 | 1.79 | 0.52 | 2 | 1019 | 22 | 25475.0 | NBH14-0022-253 | 1 | 42   | 15 | 1050.0  | 13.0 | 19 | 887.5   | 71   | 229.8  | 2.8 | 2.46 | 0.84 | 2 | 29   | 11 | 725.0   | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701  | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272 | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55  | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6   | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0014-134 | 1   | 979          | 17          | 24475.0 | 19.5             | 24             | 33425.0      | 2674           | ?            | 3.5     | 1.53         | 0.48        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 1695         | 22          | 42375.0 |                  |                |              |                |              |         |              |             | NBH14-0018-150 | 1 | 847  | 26 | 21175.0 | 24.0 | 32 | 23325.0 | 1866 | 3040.6 | 2.8 | 1.79 | 0.52 | 2 | 1019 | 22 | 25475.0 | NBH14-0022-253 | 1 | 42   | 15 | 1050.0  | 13.0 | 19 | 887.5   | 71   | 229.8  | 2.8 | 2.46 | 0.84 | 2 | 29   | 11 | 725.0   | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701  | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272  | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55  | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6   | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0018-150 | 1   | 847          | 26          | 21175.0 | 24.0             | 32             | 23325.0      | 1866           | 3040.6       | 2.8     | 1.79         | 0.52        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 1019         | 22          | 25475.0 |                  |                |              |                |              |         |              |             | NBH14-0022-253 | 1 | 42   | 15 | 1050.0  | 13.0 | 19 | 887.5   | 71   | 229.8  | 2.8 | 2.46 | 0.84 | 2 | 29   | 11 | 725.0   | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701  | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272  | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55   | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6   | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0022-253 | 1   | 42           | 15          | 1050.0  | 13.0             | 19             | 887.5        | 71             | 229.8        | 2.8     | 2.46         | 0.84        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 29           | 11          | 725.0   |                  |                |              |                |              |         |              |             | NBH14-0026-216 | 1 | 605  | 46 | 15125.0 | 47.5 | 58 | 16325.0 | 1306 | 1697.1 | 2.1 | 2.84 | 0.70 | 2 | 701  | 49 | 17525.0 | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272  | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55   | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6    | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484 | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0026-216 | 1   | 605          | 46          | 15125.0 | 47.5             | 58             | 16325.0      | 1306           | 1697.1       | 2.1     | 2.84         | 0.70        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 701          | 49          | 17525.0 |                  |                |              |                |              |         |              |             | NBH14-0030-220 | 1 | 290  | 24 | 7250.0  | 20.5 | 26 | 7025.0  | 562  | 318.2  | 4.9 | 1.90 | 0.58 | 2 | 272  | 17 | 6800.0  | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55   | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6    | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484  | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238 | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0030-220 | 1   | 290          | 24          | 7250.0  | 20.5             | 26             | 7025.0       | 562            | 318.2        | 4.9     | 1.90         | 0.58        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 272          | 17          | 6800.0  |                  |                |              |                |              |         |              |             | NBH14-0034-235 | 1 | 22   | 7  | 550.0   | 10.5 | 17 | 962.5   | 77   | 583.4  | 4.9 | 2.32 | 0.82 | 2 | 55   | 14 | 1375.0  | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6    | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484  | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238  | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736 | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0034-235 | 1   | 22           | 7           | 550.0   | 10.5             | 17             | 962.5        | 77             | 583.4        | 4.9     | 2.32         | 0.82        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 55           | 14          | 1375.0  |                  |                |              |                |              |         |              |             | NBH14-0038-240 | 1 | 0    | 0  | 0.0     | 2.5  | 5  | 75.0    | 6    | 106.1  | 3.5 | 1.56 | 0.97 | 2 | 6    | 5  | 150.0   | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484  | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238  | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736  | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391 | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0038-240 | 1   | 0            | 0           | 0.0     | 2.5              | 5              | 75.0         | 6              | 106.1        | 3.5     | 1.56         | 0.97        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 6            | 5           | 150.0   |                  |                |              |                |              |         |              |             | NBH14-0042-245 | 1 | 458  | 20 | 11450.0 | 22.0 | 33 | 11775.0 | 942  | 459.6  | 2.8 | 2.19 | 0.63 | 2 | 484  | 24 | 12100.0 | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238  | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736  | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391  | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0042-245 | 1   | 458          | 20          | 11450.0 | 22.0             | 33             | 11775.0      | 942            | 459.6        | 2.8     | 2.19         | 0.63        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 484          | 24          | 12100.0 |                  |                |              |                |              |         |              |             | NBH14-0046-146 | 1 | 351  | 34 | 8775.0  | 31.5 | 41 | 7362.5  | 589  | 1997.6 | 3.5 | 2.41 | 0.65 | 2 | 238  | 29 | 5950.0  | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736  | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391  | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0046-146 | 1   | 351          | 34          | 8775.0  | 31.5             | 41             | 7362.5       | 589            | 1997.6       | 3.5     | 2.41         | 0.65        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 238          | 29          | 5950.0  |                  |                |              |                |              |         |              |             | NBH14-0050-140 | 1 | 1123 | 22 | 28075.0 | 23.0 | 30 | 23237.5 | 1859 | 6841.3 | 1.4 | 1.25 | 0.37 | 2 | 736  | 24 | 18400.0 | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391  | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0050-140 | 1   | 1123         | 22          | 28075.0 | 23.0             | 30             | 23237.5      | 1859           | 6841.3       | 1.4     | 1.25         | 0.37        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 736          | 24          | 18400.0 |                  |                |              |                |              |         |              |             | NBH14-0054-202 | 1 | 311  | 33 | 7775.0  | 33.0 | 39 | 8775.0  | 702  | 1414.2 | 0.0 | 2.58 | 0.70 | 2 | 391  | 33 | 9775.0  |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
| NBH14-0054-202 | 1   | 311          | 33          | 7775.0  | 33.0             | 39             | 8775.0       | 702            | 1414.2       | 0.0     | 2.58         | 0.70        |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |
|                | 2   | 391          | 33          | 9775.0  |                  |                |              |                |              |         |              |             |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |      |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |        |

| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|
| NBH14-0058-151 | 1   | 713          | 31          | 17825.0 | 33.5             | 45             | 14612.5      | 1169           | 4543.2       | 3.5     | 2.07         | 0.54        |
|                | 2   | 456          | 36          | 11400.0 |                  |                |              |                |              |         |              |             |
| NBH14-0062-147 | 1   | 407          | 27          | 10175.0 | 25.5             | 36             | 9575.0       | 766            | 848.5        | 2.1     | 1.92         | 0.54        |
|                | 2   | 359          | 24          | 8975.0  |                  |                |              |                |              |         |              |             |
| NBH14-0066-135 | 1   | 1305         | 22          | 32625.0 | 21.5             | 29             | 41350.0      | 3308           | ?            | 0.7     | 1.20         | 0.36        |
|                | 2   | 2003         | 21          | 50075.0 |                  |                |              |                |              |         |              |             |
| NBH14-0070-155 | 1   | 1290         | 27          | 32250.0 | 29.5             | 38             | 37012.5      | 2961           | 6735.2       | 3.5     | 1.75         | 0.48        |
|                | 2   | 1671         | 32          | 41775.0 |                  |                |              |                |              |         |              |             |
| NBH14-0074-333 | 1   | 576          | 67          | 14400.0 | 59.5             | 89             | 15362.5      | 1229           | 1361.2       | 10.6    | 3.05         | 0.68        |
|                | 2   | 653          | 52          | 16325.0 |                  |                |              |                |              |         |              |             |
| NBH14-0078-339 | 1   | 623          | 37          | 15575.0 | 34.0             | 43             | 14737.5      | 1179           | 1184.4       | 4.2     | 2.46         | 0.66        |
|                | 2   | 556          | 31          | 13900.0 |                  |                |              |                |              |         |              |             |
| NBH14-0082-346 | 1   | 310          | 48          | 7750.0  | 54.0             | 77             | 7575.0       | 606            | 247.5        | 8.5     | 3.51         | 0.81        |
|                | 2   | 296          | 60          | 7400.0  |                  |                |              |                |              |         |              |             |
| NBH14-0086-340 | 1   | 739          | 45          | 18475.0 | 38.5             | 52             | 15500.0      | 1240           | 4207.3       | 9.2     | 2.55         | 0.65        |
|                | 2   | 501          | 32          | 12525.0 |                  |                |              |                |              |         |              |             |
| NBH14-0090-341 | 1   | 758          | 56          | 18950.0 | 55.0             | 74             | 18537.5      | 1483           | 583.4        | 1.4     | 3.20         | 0.74        |
|                | 2   | 725          | 54          | 18125.0 |                  |                |              |                |              |         |              |             |
| NBH14-0094-334 | 1   | 509          | 40          | 12725.0 | 38.5             | 53             | 12450.0      | 996            | 388.9        | 2.1     | 2.36         | 0.60        |
|                | 2   | 487          | 37          | 12175.0 |                  |                |              |                |              |         |              |             |
| NBH14-0098-335 | 1   | 616          | 31          | 15400.0 | 32.5             | 46             | 14262.5      | 1141           | 1608.7       | 2.1     | 2.06         | 0.54        |
|                | 2   | 525          | 34          | 13125.0 |                  |                |              |                |              |         |              |             |
| NBH14-0102-349 | 1   | 195          | 39          | 4875.0  | 48.5             | 70             | 7487.5       | 599            | 3694.6       | 13.4    | 3.15         | 0.74        |
|                | 2   | 404          | 58          | 10100.0 |                  |                |              |                |              |         |              |             |
| NBH14-0106-352 | 1   | 875          | 56          | 21875.0 | 52.0             | 75             | 26825.0      | 2146           | 7000.4       | 5.7     | 2.07         | 0.48        |
|                | 2   | 1271         | 48          | 31775.0 |                  |                |              |                |              |         |              |             |
| NBH14-0110-345 | 1   | 480          | 32          | 12000.0 | 38.5             | 52             | 11312.5      | 905            | 972.3        | 9.2     | 2.63         | 0.67        |
|                | 2   | 425          | 45          | 10625.0 |                  |                |              |                |              |         |              |             |

| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|----------------|---|------|----|---------|------|-----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|------|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|
| NBH14-0114-318 | 1   | 844          | 72          | 21100.0 | 58.5             | 82             | 15712.5      | 1257           | 7619.1       | 19.1    | 2.89         | 0.65        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 413          | 45          | 10325.0 |                  |                |              |                |              |         |              |             | NBH14-0118-311 | 1 | 1117 | 83 | 27925.0 | 76.5 | 104 | 25275.0 | 2022 | 3747.7 | 9.2  | 3.12 | 0.67 | 2 | 905 | 70 | 22625.0 | NBH14-0122-306 | 1 | 99   | 30 | 2475.0  | 33.5 | 50 | 3587.5  | 287  | 1573.3 | 4.9  | 3.20 | 0.82 | 2 | 188 | 37 | 4700.0  | NBH14-0126-221 | 1 | 668  | 16 | 16700.0 | 17.0 | 24 | 16437.5 | 1315 | 371.2  | 1.4  | 1.44 | 0.45 | 2 | 647 | 18 | 16175.0 | NBH14-0130-249 | 1 | 260  | 27 | 6500.0  | 25.0 | 35 | 6387.5  | 511  | 159.1  | 2.8  | 2.39 | 0.67 | 2 | 251 | 23 | 6275.0  | NBH14-0134-317 | 1 | 263  | 22 | 6575.0  | 25.5 | 35 | 7187.5  | 575  | 866.2  | 4.9  | 2.49 | 0.70 | 2 | 312 | 29 | 7800.0  | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25 | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8 | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331 | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1 | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553 | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7 | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339 | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4 | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514 | 36 | 12850.0 | 35.0 | 46 | 15012.5 |
| NBH14-0118-311 | 1   | 1117         | 83          | 27925.0 | 76.5             | 104            | 25275.0      | 2022           | 3747.7       | 9.2     | 3.12         | 0.67        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 905          | 70          | 22625.0 |                  |                |              |                |              |         |              |             | NBH14-0122-306 | 1 | 99   | 30 | 2475.0  | 33.5 | 50  | 3587.5  | 287  | 1573.3 | 4.9  | 3.20 | 0.82 | 2 | 188 | 37 | 4700.0  | NBH14-0126-221 | 1 | 668  | 16 | 16700.0 | 17.0 | 24 | 16437.5 | 1315 | 371.2  | 1.4  | 1.44 | 0.45 | 2 | 647 | 18 | 16175.0 | NBH14-0130-249 | 1 | 260  | 27 | 6500.0  | 25.0 | 35 | 6387.5  | 511  | 159.1  | 2.8  | 2.39 | 0.67 | 2 | 251 | 23 | 6275.0  | NBH14-0134-317 | 1 | 263  | 22 | 6575.0  | 25.5 | 35 | 7187.5  | 575  | 866.2  | 4.9  | 2.49 | 0.70 | 2 | 312 | 29 | 7800.0  | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25 | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1 | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553 | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7 | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339 | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4 | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514 | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4 | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |     |    |         |      |    |         |
| NBH14-0122-306 | 1   | 99           | 30          | 2475.0  | 33.5             | 50             | 3587.5       | 287            | 1573.3       | 4.9     | 3.20         | 0.82        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 188          | 37          | 4700.0  |                  |                |              |                |              |         |              |             | NBH14-0126-221 | 1 | 668  | 16 | 16700.0 | 17.0 | 24  | 16437.5 | 1315 | 371.2  | 1.4  | 1.44 | 0.45 | 2 | 647 | 18 | 16175.0 | NBH14-0130-249 | 1 | 260  | 27 | 6500.0  | 25.0 | 35 | 6387.5  | 511  | 159.1  | 2.8  | 2.39 | 0.67 | 2 | 251 | 23 | 6275.0  | NBH14-0134-317 | 1 | 263  | 22 | 6575.0  | 25.5 | 35 | 7187.5  | 575  | 866.2  | 4.9  | 2.49 | 0.70 | 2 | 312 | 29 | 7800.0  | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25 | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7 | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339 | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4 | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514 | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4 | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0126-221 | 1   | 668          | 16          | 16700.0 | 17.0             | 24             | 16437.5      | 1315           | 371.2        | 1.4     | 1.44         | 0.45        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 647          | 18          | 16175.0 |                  |                |              |                |              |         |              |             | NBH14-0130-249 | 1 | 260  | 27 | 6500.0  | 25.0 | 35  | 6387.5  | 511  | 159.1  | 2.8  | 2.39 | 0.67 | 2 | 251 | 23 | 6275.0  | NBH14-0134-317 | 1 | 263  | 22 | 6575.0  | 25.5 | 35 | 7187.5  | 575  | 866.2  | 4.9  | 2.49 | 0.70 | 2 | 312 | 29 | 7800.0  | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25 | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4 | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514 | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4 | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0130-249 | 1   | 260          | 27          | 6500.0  | 25.0             | 35             | 6387.5       | 511            | 159.1        | 2.8     | 2.39         | 0.67        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 251          | 23          | 6275.0  |                  |                |              |                |              |         |              |             | NBH14-0134-317 | 1 | 263  | 22 | 6575.0  | 25.5 | 35  | 7187.5  | 575  | 866.2  | 4.9  | 2.49 | 0.70 | 2 | 312 | 29 | 7800.0  | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25 | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4 | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0134-317 | 1   | 263          | 22          | 6575.0  | 25.5             | 35             | 7187.5       | 575            | 866.2        | 4.9     | 2.49         | 0.70        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 312          | 29          | 7800.0  |                  |                |              |                |              |         |              |             | NBH14-0138-309 | 1 | 120  | 18 | 3000.0  | 19.5 | 25  | 3137.5  | 251  | 194.5  | 2.1  | 2.41 | 0.75 | 2 | 131 | 21 | 3275.0  | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17 | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0138-309 | 1   | 120          | 18          | 3000.0  | 19.5             | 25             | 3137.5       | 251            | 194.5        | 2.1     | 2.41         | 0.75        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 131          | 21          | 3275.0  |                  |                |              |                |              |         |              |             | NBH14-0142-310 | 1 | 44   | 10 | 1100.0  | 11.0 | 17  | 912.5   | 73   | 265.2  | 1.4  | 2.29 | 0.81 | 2 | 29  | 12 | 725.0   | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73 | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0142-310 | 1   | 44           | 10          | 1100.0  | 11.0             | 17             | 912.5        | 73             | 265.2        | 1.4     | 2.29         | 0.81        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 29           | 12          | 725.0   |                  |                |              |                |              |         |              |             | NBH14-0146-304 | 1 | 690  | 38 | 17250.0 | 49.5 | 73  | 18300.0 | 1464 | 1484.9 | 16.3 | 2.24 | 0.52 | 2 | 774 | 61 | 19350.0 | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59 | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0146-304 | 1   | 690          | 38          | 17250.0 | 49.5             | 73             | 18300.0      | 1464           | 1484.9       | 16.3    | 2.24         | 0.52        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 774          | 61          | 19350.0 |                  |                |              |                |              |         |              |             | NBH14-0150-250 | 1 | 1181 | 49 | 29525.0 | 43.5 | 59  | 25975.0 | 2078 | 5020.5 | 7.8  | 2.19 | 0.54 | 2 | 897 | 38 | 22425.0 | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25 | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0150-250 | 1   | 1181         | 49          | 29525.0 | 43.5             | 59             | 25975.0      | 2078           | 5020.5       | 7.8     | 2.19         | 0.54        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 897          | 38          | 22425.0 |                  |                |              |                |              |         |              |             | NBH14-0154-105 | 1 | 331  | 20 | 8275.0  | 18.5 | 25  | 7325.0  | 586  | 1343.5 | 2.1  | 1.98 | 0.62 | 2 | 255 | 17 | 6375.0  | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23 | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0154-105 | 1   | 331          | 20          | 8275.0  | 18.5             | 25             | 7325.0       | 586            | 1343.5       | 2.1     | 1.98         | 0.62        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 255          | 17          | 6375.0  |                  |                |              |                |              |         |              |             | NBH14-0158-109 | 1 | 553  | 11 | 13825.0 | 15.0 | 23  | 16250.0 | 1300 | 3429.5 | 5.7  | 1.00 | 0.32 | 2 | 747 | 19 | 18675.0 | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17 | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0158-109 | 1   | 553          | 11          | 13825.0 | 15.0             | 23             | 16250.0      | 1300           | 3429.5       | 5.7     | 1.00         | 0.32        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 747          | 19          | 18675.0 |                  |                |              |                |              |         |              |             | NBH14-0162-115 | 1 | 339  | 11 | 8475.0  | 12.0 | 17  | 7337.5  | 587  | 1608.7 | 1.4  | 0.94 | 0.33 | 2 | 248 | 13 | 6200.0  | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46 | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0162-115 | 1   | 339          | 11          | 8475.0  | 12.0             | 17             | 7337.5       | 587            | 1608.7       | 1.4     | 0.94         | 0.33        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 248          | 13          | 6200.0  |                  |                |              |                |              |         |              |             | NBH14-0166-154 | 1 | 514  | 36 | 12850.0 | 35.0 | 46  | 15012.5 | 1201 | 3058.2 | 1.4  | 2.18 | 0.57 | 2 | 687 | 34 | 17175.0 |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
| NBH14-0166-154 | 1   | 514          | 36          | 12850.0 | 35.0             | 46             | 15012.5      | 1201           | 3058.2       | 1.4     | 2.18         | 0.57        |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |
|                | 2   | 687          | 34          | 17175.0 |                  |                |              |                |              |         |              |             |                |   |      |    |         |      |     |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |      |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |

| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|
| NBH14-0170-139 | 1   | 144          | 24          | 3600.0  | 21.5             | 31             | 3475.0       | 278            | 176.8        | 3.5     | 1.92         | 0.56        |
|                | 2   | 134          | 19          | 3350.0  |                  |                |              |                |              |         |              |             |
| NBH14-0174-131 | 1   | 2198         | 23          | 54950.0 | 24.5             | 29             | 58700.0      | 4696           | 5303.3       | 2.1     | 1.13         | 0.33        |
|                | 2   | 2498         | 26          | 62450.0 |                  |                |              |                |              |         |              |             |
| NBH14-0229-108 | 1   | 1514         | 23          | 37850.0 | 23.0             | 27             | 36775.0      | 2942           | 1520.3       | 0.0     | 2.10         | 0.64        |
|                | 2   | 1428         | 23          | 35700.0 |                  |                |              |                |              |         |              |             |
| NBH14-0212-111 | 1   | 1485         | 28          | 37125.0 | 26.0             | 33             | 39037.5      | 3123           | 2704.7       | 2.8     | 1.93         | 0.55        |
|                | 2   | 1638         | 24          | 40950.0 |                  |                |              |                |              |         |              |             |
| NBH14-0208-114 | 1   | 1224         | 30          | 30600.0 | 27.5             | 32             | 27425.0      | 2194           | 4490.1       | 3.5     | 2.42         | 0.70        |
|                | 2   | 970          | 25          | 24250.0 |                  |                |              |                |              |         |              |             |
| NBH14-0204-117 | 1   | 7800         | 34          | ?       | 29.5             | 40             | 309375.0     | 24750          | ?            | 6.4     | 0.97         | 0.26        |
|                | 2   | 16950        | 25          | ?       |                  |                |              |                |              |         |              |             |
| NBH14-0254-121 | 1   | 2865         | 22          | 71625.0 | 21.5             | 31             | 96587.5      | 7727           | ?            | 0.7     | 0.83         | 0.24        |
|                | 2   | 4862         | 21          | ?       |                  |                |              |                |              |         |              |             |
| NBH14-0250-123 | 1   | 1225         | 27          | 30625.0 | 24.5             | 29             | 28075.0      | 2246           | 3606.2       | 3.5     | 1.59         | 0.47        |
|                | 2   | 1021         | 22          | 25525.0 |                  |                |              |                |              |         |              |             |
| NBH14-0225-126 | 1   | 4881         | 12          | ?       | 14.5             | 21             | 89425.0      | 7154           | ?            | 3.5     | 0.65         | 0.21        |
|                | 2   | 2273         | 17          | 56825.0 |                  |                |              |                |              |         |              |             |
| NBH14-0246-128 | 1   | 1687         | 20          | 42175.0 | 23.0             | 29             | 37850.0      | 3028           | 6116.5       | 4.2     | 1.27         | 0.38        |
|                | 2   | 1341         | 26          | 33525.0 |                  |                |              |                |              |         |              |             |
| NBH14-0221-138 | 1   | 895          | 34          | 22375.0 | 29.0             | 39             | 21450.0      | 1716           | 1308.1       | 7.1     | 1.74         | 0.48        |
|                | 2   | 821          | 24          | 20525.0 |                  |                |              |                |              |         |              |             |
| NBH14-0216-152 | 1   | 275          | 26          | 6875.0  | 26.5             | 35             | 10937.5      | 875            | 5745.2       | 0.7     | 2.38         | 0.67        |
|                | 2   | 600          | 27          | 15000.0 |                  |                |              |                |              |         |              |             |
| NBH14-0327-204 | 1   | 629          | 14          | 15725.0 | 14.0             | 21             | 12662.5      | 1013           | 4331.0       | 0.0     | 1.39         | 0.46        |
|                | 2   | 384          | 14          | 9600.0  |                  |                |              |                |              |         |              |             |
| NBH14-0266-207 | 1   | 1269         | 20          | 31725.0 | 19.5             | 24             | 38187.5      | 3055           | 9139.4       | 0.7     | 1.98         | 0.62        |
|                | 2   | 1786         | 19          | 44650.0 |                  |                |              |                |              |         |              |             |

| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|------|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|---------|------|--------|-----|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|---------|
| NBH14-0262-208 | 1   | 952          | 24          | 23800.0 | 30.5             | 43             | 24587.5      | 1967           | 1113.7       | 9.2     | 2.41         | 0.64        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 1015         | 37          | 25375.0 |                  |                |              |                |              |         |              |             | NBH14-0323-211 | 1 | 735 | 24 | 18375.0 | 23.5 | 29 | 19675.0 | 1574 | 1838.5 | 0.7  | 1.83 | 0.54 | 2 | 839  | 23 | 20975.0 | NBH14-0319-212 | 1 | 290 | 12 | 7250.0  | 12.5 | 15 | 6400.0  | 512  | 1202.1 | 0.7  | 1.60 | 0.59 | 2 | 222  | 13 | 5550.0  | NBH14-0315-217 | 1 | 248 | 19 | 6200.0  | 17.5 | 22 | 6062.5  | 485  | 194.5  | 2.1  | 2.16 | 0.70 | 2 | 237  | 16 | 5925.0  | NBH14-0258-218 | 1 | 950 | 25 | 23750.0 | 25.0 | 37 | 34475.0 | 2758 | ?      | 0.0  | 1.90 | 0.53 | 2 | 1808 | 25 | 45200.0 | NBH14-0238-222 | 1 | 114 | 11 | 2850.0  | 12.0 | 16 | 3262.5  | 261  | 583.4  | 1.4  | 1.92 | 0.69 | 2 | 147  | 13 | 3675.0  | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167 | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4 | 2.00 | 0.58 | 2 | 347 | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7 | 2.38 | 0.77 | 2 | 64  | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4 | 1.60 | 0.49 | 2 | 307 | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0  | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1 | 2.70 | 0.85 | 2 | 81  | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0 | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1 | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0 | 42.0 | 59 | 12650.0 |
| NBH14-0323-211 | 1   | 735          | 24          | 18375.0 | 23.5             | 29             | 19675.0      | 1574           | 1838.5       | 0.7     | 1.83         | 0.54        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 839          | 23          | 20975.0 |                  |                |              |                |              |         |              |             | NBH14-0319-212 | 1 | 290 | 12 | 7250.0  | 12.5 | 15 | 6400.0  | 512  | 1202.1 | 0.7  | 1.60 | 0.59 | 2 | 222  | 13 | 5550.0  | NBH14-0315-217 | 1 | 248 | 19 | 6200.0  | 17.5 | 22 | 6062.5  | 485  | 194.5  | 2.1  | 2.16 | 0.70 | 2 | 237  | 16 | 5925.0  | NBH14-0258-218 | 1 | 950 | 25 | 23750.0 | 25.0 | 37 | 34475.0 | 2758 | ?      | 0.0  | 1.90 | 0.53 | 2 | 1808 | 25 | 45200.0 | NBH14-0238-222 | 1 | 114 | 11 | 2850.0  | 12.0 | 16 | 3262.5  | 261  | 583.4  | 1.4  | 1.92 | 0.69 | 2 | 147  | 13 | 3675.0  | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347 | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7 | 2.38 | 0.77 | 2 | 64  | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4 | 1.60 | 0.49 | 2 | 307 | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1 | 2.70 | 0.85 | 2 | 81  | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0 | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1 | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0 | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4 | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |        |      |    |         |
| NBH14-0319-212 | 1   | 290          | 12          | 7250.0  | 12.5             | 15             | 6400.0       | 512            | 1202.1       | 0.7     | 1.60         | 0.59        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 222          | 13          | 5550.0  |                  |                |              |                |              |         |              |             | NBH14-0315-217 | 1 | 248 | 19 | 6200.0  | 17.5 | 22 | 6062.5  | 485  | 194.5  | 2.1  | 2.16 | 0.70 | 2 | 237  | 16 | 5925.0  | NBH14-0258-218 | 1 | 950 | 25 | 23750.0 | 25.0 | 37 | 34475.0 | 2758 | ?      | 0.0  | 1.90 | 0.53 | 2 | 1808 | 25 | 45200.0 | NBH14-0238-222 | 1 | 114 | 11 | 2850.0  | 12.0 | 16 | 3262.5  | 261  | 583.4  | 1.4  | 1.92 | 0.69 | 2 | 147  | 13 | 3675.0  | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64  | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4 | 1.60 | 0.49 | 2 | 307 | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1 | 2.70 | 0.85 | 2 | 81  | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1 | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0 | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4 | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0315-217 | 1   | 248          | 19          | 6200.0  | 17.5             | 22             | 6062.5       | 485            | 194.5        | 2.1     | 2.16         | 0.70        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 237          | 16          | 5925.0  |                  |                |              |                |              |         |              |             | NBH14-0258-218 | 1 | 950 | 25 | 23750.0 | 25.0 | 37 | 34475.0 | 2758 | ?      | 0.0  | 1.90 | 0.53 | 2 | 1808 | 25 | 45200.0 | NBH14-0238-222 | 1 | 114 | 11 | 2850.0  | 12.0 | 16 | 3262.5  | 261  | 583.4  | 1.4  | 1.92 | 0.69 | 2 | 147  | 13 | 3675.0  | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307 | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1 | 2.70 | 0.85 | 2 | 81  | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1 | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4 | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0258-218 | 1   | 950          | 25          | 23750.0 | 25.0             | 37             | 34475.0      | 2758           | ?            | 0.0     | 1.90         | 0.53        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 1808         | 25          | 45200.0 |                  |                |              |                |              |         |              |             | NBH14-0238-222 | 1 | 114 | 11 | 2850.0  | 12.0 | 16 | 3262.5  | 261  | 583.4  | 1.4  | 1.92 | 0.69 | 2 | 147  | 13 | 3675.0  | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81  | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1 | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4 | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0238-222 | 1   | 114          | 11          | 2850.0  | 12.0             | 16             | 3262.5       | 261            | 583.4        | 1.4     | 1.92         | 0.69        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 147          | 13          | 3675.0  |                  |                |              |                |              |         |              |             | NBH14-0242-224 | 1 | 330 | 17 | 8250.0  | 19.0 | 29 | 30462.5 | 2437 | ?      | 2.8  | 1.04 | 0.31 | 2 | 2107 | 21 | 52675.0 | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43  | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4 | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0242-224 | 1   | 330          | 17          | 8250.0  | 19.0             | 29             | 30462.5      | 2437           | ?            | 2.8     | 1.04         | 0.31        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 2107         | 21          | 52675.0 |                  |                |              |                |              |         |              |             | NBH14-0303-225 | 1 | 454 | 43 | 11350.0 | 34.5 | 50 | 7762.5  | 621  | 5073.5 | 12.0 | 2.70 | 0.69 | 2 | 167  | 26 | 4175.0  | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690 | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0303-225 | 1   | 454          | 43          | 11350.0 | 34.5             | 50             | 7762.5       | 621            | 5073.5       | 12.0    | 2.70         | 0.69        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 167          | 26          | 4175.0  |                  |                |              |                |              |         |              |             | NBH14-0307-226 | 1 | 420 | 26 | 10500.0 | 21.5 | 32 | 9587.5  | 767  | 1290.5 | 6.4  | 2.00 | 0.58 | 2 | 347  | 17 | 8675.0  | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0307-226 | 1   | 420          | 26          | 10500.0 | 21.5             | 32             | 9587.5       | 767            | 1290.5       | 6.4     | 2.00         | 0.58        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 347          | 17          | 8675.0  |                  |                |              |                |              |         |              |             | NBH14-0311-227 | 1 | 114 | 17 | 2850.0  | 17.5 | 22 | 2225.0  | 178  | 883.9  | 0.7  | 2.38 | 0.77 | 2 | 64   | 18 | 1600.0  | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0311-227 | 1   | 114          | 17          | 2850.0  | 17.5             | 22             | 2225.0       | 178            | 883.9        | 0.7     | 2.38         | 0.77        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 64           | 18          | 1600.0  |                  |                |              |                |              |         |              |             | NBH14-0200-230 | 1 | 816 | 21 | 20400.0 | 20.0 | 27 | 14037.5 | 1123 | 8997.9 | 1.4  | 1.60 | 0.49 | 2 | 307  | 19 | 7675.0  | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0200-230 | 1   | 816          | 21          | 20400.0 | 20.0             | 27             | 14037.5      | 1123           | 8997.9       | 1.4     | 1.60         | 0.49        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 307          | 19          | 7675.0  |                  |                |              |                |              |         |              |             | NBH14-0198-231 | 1 | 26  | 11 | 650.0   | 16.0 | 24 | 1337.5  | 107  | 972.3  | 7.1  | 2.70 | 0.85 | 2 | 81   | 21 | 2025.0  | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0198-231 | 1   | 26           | 11          | 650.0   | 16.0             | 24             | 1337.5       | 107            | 972.3        | 7.1     | 2.70         | 0.85        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 81           | 21          | 2025.0  |                  |                |              |                |              |         |              |             | NBH14-0194-236 | 1 | 191 | 24 | 4775.0  | 19.0 | 26 | 2925.0  | 234  | 2616.3 | 7.1  | 2.45 | 0.75 | 2 | 43   | 14 | 1075.0  | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0194-236 | 1   | 191          | 24          | 4775.0  | 19.0             | 26             | 2925.0       | 234            | 2616.3       | 7.1     | 2.45         | 0.75        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 43           | 14          | 1075.0  |                  |                |              |                |              |         |              |             | NBH14-0190-237 | 1 | 322 | 43 | 8050.0  | 42.0 | 59 | 12650.0 | 1012 | 6505.4 | 1.4  | 2.32 | 0.57 | 2 | 690  | 41 | 17250.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0190-237 | 1   | 322          | 43          | 8050.0  | 42.0             | 59             | 12650.0      | 1012           | 6505.4       | 1.4     | 2.32         | 0.57        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 690          | 41          | 17250.0 |                  |                |              |                |              |         |              |             |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |      |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |     |      |      |   |     |    |         |                |   |     |    |        |      |    |         |

| Station Name   | Rep | No. of Indvs | No. of Taxa | Density | Mean No. of Taxa | Total No. Taxa | Mean Density | Total No. Indv | Density (SD) | Taxa SD | Diversity H' | Evenness J' |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|----------------|-----|--------------|-------------|---------|------------------|----------------|--------------|----------------|--------------|---------|--------------|-------------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|---------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|---------|------|--------|------|------|------|---|-----|----|---------|----------------|---|-----|----|--------|------|----|---------|
| NBH14-0186-241 | 1   | 225          | 29          | 5625.0  | 26.0             | 36             | 5825.0       | 466            | 282.8        | 4.2     | 2.34         | 0.65        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 241          | 23          | 6025.0  |                  |                |              |                |              |         |              |             | NBH14-0182-242 | 1 | 237 | 18 | 5925.0  | 21.5 | 29 | 9212.5  | 737  | 4649.2 | 4.9  | 1.65 | 0.49 | 2 | 500 | 25 | 12500.0 | NBH14-0178-247 | 1 | 445 | 13 | 11125.0 | 16.0 | 21 | 10475.0 | 838  | 919.2  | 4.2  | 1.75 | 0.57 | 2 | 393 | 19 | 9825.0  | NBH14-0282-323 | 1 | 33  | 10 | 825.0   | 13.0 | 17 | 850.0   | 68   | 35.4   | 4.2  | 2.42 | 0.85 | 2 | 35  | 16 | 875.0   | NBH14-0286-324 | 1 | 330 | 44 | 8250.0  | 35.5 | 53 | 6150.0  | 492  | 2969.8 | 12.0 | 2.89 | 0.73 | 2 | 162 | 27 | 4050.0  | NBH14-0290-325 | 1 | 306 | 31 | 7650.0  | 35.0 | 48 | 7612.5  | 609  | 53.0   | 5.7  | 2.92 | 0.76 | 2 | 303 | 39 | 7575.0  | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0 | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0 | 36.0 | 52 | 14162.5 |
| NBH14-0182-242 | 1   | 237          | 18          | 5925.0  | 21.5             | 29             | 9212.5       | 737            | 4649.2       | 4.9     | 1.65         | 0.49        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 500          | 25          | 12500.0 |                  |                |              |                |              |         |              |             | NBH14-0178-247 | 1 | 445 | 13 | 11125.0 | 16.0 | 21 | 10475.0 | 838  | 919.2  | 4.2  | 1.75 | 0.57 | 2 | 393 | 19 | 9825.0  | NBH14-0282-323 | 1 | 33  | 10 | 825.0   | 13.0 | 17 | 850.0   | 68   | 35.4   | 4.2  | 2.42 | 0.85 | 2 | 35  | 16 | 875.0   | NBH14-0286-324 | 1 | 330 | 44 | 8250.0  | 35.5 | 53 | 6150.0  | 492  | 2969.8 | 12.0 | 2.89 | 0.73 | 2 | 162 | 27 | 4050.0  | NBH14-0290-325 | 1 | 306 | 31 | 7650.0  | 35.0 | 48 | 7612.5  | 609  | 53.0   | 5.7  | 2.92 | 0.76 | 2 | 303 | 39 | 7575.0  | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0 | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |        |      |    |         |
| NBH14-0178-247 | 1   | 445          | 13          | 11125.0 | 16.0             | 21             | 10475.0      | 838            | 919.2        | 4.2     | 1.75         | 0.57        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 393          | 19          | 9825.0  |                  |                |              |                |              |         |              |             | NBH14-0282-323 | 1 | 33  | 10 | 825.0   | 13.0 | 17 | 850.0   | 68   | 35.4   | 4.2  | 2.42 | 0.85 | 2 | 35  | 16 | 875.0   | NBH14-0286-324 | 1 | 330 | 44 | 8250.0  | 35.5 | 53 | 6150.0  | 492  | 2969.8 | 12.0 | 2.89 | 0.73 | 2 | 162 | 27 | 4050.0  | NBH14-0290-325 | 1 | 306 | 31 | 7650.0  | 35.0 | 48 | 7612.5  | 609  | 53.0   | 5.7  | 2.92 | 0.76 | 2 | 303 | 39 | 7575.0  | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0282-323 | 1   | 33           | 10          | 825.0   | 13.0             | 17             | 850.0        | 68             | 35.4         | 4.2     | 2.42         | 0.85        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 35           | 16          | 875.0   |                  |                |              |                |              |         |              |             | NBH14-0286-324 | 1 | 330 | 44 | 8250.0  | 35.5 | 53 | 6150.0  | 492  | 2969.8 | 12.0 | 2.89 | 0.73 | 2 | 162 | 27 | 4050.0  | NBH14-0290-325 | 1 | 306 | 31 | 7650.0  | 35.0 | 48 | 7612.5  | 609  | 53.0   | 5.7  | 2.92 | 0.76 | 2 | 303 | 39 | 7575.0  | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0286-324 | 1   | 330          | 44          | 8250.0  | 35.5             | 53             | 6150.0       | 492            | 2969.8       | 12.0    | 2.89         | 0.73        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 162          | 27          | 4050.0  |                  |                |              |                |              |         |              |             | NBH14-0290-325 | 1 | 306 | 31 | 7650.0  | 35.0 | 48 | 7612.5  | 609  | 53.0   | 5.7  | 2.92 | 0.76 | 2 | 303 | 39 | 7575.0  | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0290-325 | 1   | 306          | 31          | 7650.0  | 35.0             | 48             | 7612.5       | 609            | 53.0         | 5.7     | 2.92         | 0.76        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 303          | 39          | 7575.0  |                  |                |              |                |              |         |              |             | NBH14-0278-331 | 1 | 658 | 54 | 16450.0 | 46.0 | 66 | 12175.0 | 974  | 6045.8 | 11.3 | 2.87 | 0.68 | 2 | 316 | 38 | 7900.0  | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0278-331 | 1   | 658          | 54          | 16450.0 | 46.0             | 66             | 12175.0      | 974            | 6045.8       | 11.3    | 2.87         | 0.68        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 316          | 38          | 7900.0  |                  |                |              |                |              |         |              |             | NBH14-0270-332 | 1 | 213 | 50 | 5325.0  | 43.5 | 64 | 4212.5  | 337  | 1573.3 | 9.2  | 3.44 | 0.83 | 2 | 124 | 37 | 3100.0  | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0270-332 | 1   | 213          | 50          | 5325.0  | 43.5             | 64             | 4212.5       | 337            | 1573.3       | 9.2     | 3.44         | 0.83        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 124          | 37          | 3100.0  |                  |                |              |                |              |         |              |             | NBH14-0274-338 | 1 | 306 | 24 | 7650.0  | 36.0 | 52 | 14162.5 | 1133 | 9210.1 | 17.0 | 2.38 | 0.60 | 2 | 827 | 48 | 20675.0 |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
| NBH14-0274-338 | 1   | 306          | 24          | 7650.0  | 36.0             | 52             | 14162.5      | 1133           | 9210.1       | 17.0    | 2.38         | 0.60        |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |
|                | 2   | 827          | 48          | 20675.0 |                  |                |              |                |              |         |              |             |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |         |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |      |        |      |      |      |   |     |    |         |                |   |     |    |        |      |    |         |

**Appendix G**  
Data Validation Reports

## **Grain Size Validation Report**



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February 23, 2015

Ms. Deirdre Dahlen  
Battelle  
141 Longwater Drive  
Suite 202  
Norwell, MA 02061

Subject: NBH Data Validation

Dear Ms. Dahlen,

Enclosed are the final validation reports for the sample delivery groups (SDGs) listed below.

| <b><u>SDG #</u></b> | <b><u>Fraction</u></b> | <b><u>Date Received for Validation</u></b> |
|---------------------|------------------------|--|
| GTX302366           | Grain Size and TOC     | 1/6/15                                     |

The data validation was performed at Tier I+ level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013

Please feel free to contact me if you have any questions.

Sincerely,



Elizabeth Cutié  
Battelle Columbus Operations

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 24-30, 2014  
**Report Date:** February 23, 2015  
**Matrix:** Sediment  
**Parameters:** Grain Size  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** GTX302366  
**Sample Identification:**

NBH14-0001 through NBH14-0329

## Introduction

This data review covers the sediment samples listed on the cover sheet. The samples were analyzed for grain size analyses by GeoTesting Express according to ASTM D422.

The laboratory selected 16 samples to analyze in duplicate. The following samples were analyzed in duplicate by the lab: NBH14-0010, 0028, 0050, 0066, 0086, 0110, 0125, 0149, 0173, 0188, 0200, 0242, 0262, 0282, 0311, and 0324.

The following grain size fractions were reported:

| <b>PARAM_CODE</b> | <b>DESCRIPTION</b>              |
|-------------------|---------------------------------|
| GRAVEL            | Gravel (>2.00 mm)               |
| SAND_VCO          | Very Course Sand (1.00-2.00 mm) |
| SAND_CO           | Course Sand (0.50-1.00 mm)      |
| SAND_MED          | Medium Sand (0.25-0.50 mm)      |
| SAND_FI           | Fine Sand (0.125-0.25 mm)       |
| SAND_VFI          | Very Fine Sand (0.063-0.125 mm) |
| SILT              | Silt (0.0039-0.0625 mm)         |
| CLAY              | Clay (<0.00391 mm)              |

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## New Bedford Harbor

### Grain Size - Data Qualification Summary - SDG GTX302366

| SDG       | Sample IDs          | Compound  | Flag      | Reason   |
|-----------|---------------------|---|-----------|--|
| GTX302366 | NBH14-0010<br>& DUP | CLAY<br>SAND_VFI<br>SAND_MED                                  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0028<br>& DUP | SAND_VCO  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0050<br>& DUP | GRAVEL,<br>SAND_FI  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0066<br>& DUP | SILT  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0110<br>& DUP | SAND_FI   | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0125<br>& DUP | GRAVEL  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0149<br>& DUP | CLAY  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0173<br>& DUP | CLAY<br>SAND_VFI<br>SAND_MED<br>SAND_CO                       | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0188<br>& DUP | GRAVEL  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0200<br>& DUP | GRAVEL<br>CLAY<br>SAND_VFI<br>SAND_FI<br>SAND_MED<br>SAND_VCO | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0242<br>& DUP | CLAY<br>SAND_MED  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0262<br>& DUP | SAND_MED  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0282<br>& DUP | SAND_VFI<br>SAND_CO   | J/detects | The lab duplicate pair did not meet the %RPD criteria. |
|           | NBH14-0311<br>& DUP | SAND_MED<br>SAND_VCO  | J/detects | The lab duplicate pair did not meet the %RPD criteria. |

**Laboratory:** GeoTesting Express

**Laboratory Batch:** GTX302366

**Analysis:** Grain Size

**Matrix:** Sediment

**Collection Date:** 9/25, 9/26, 9/29 and 9/30/14

**Reviewer:** B. Cutie

**Review Date:** 2/20/15

| <b>Data Element</b>                      | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>  |
|--|--|---|
| Preservation and technical holding times | None specified   | Yes/ shipped at 4±2°C with total organic carbon samples.  |
| Lab Duplicates                           | 1 per 20 samples or per batch or 5% of field samples; RPD ≤ 20% for results >5x RL | No/There were 16 duplicate pairs in the dataset. Fourteen of the duplicate pairs did not meet the RPD criteria. See report narrative. |

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

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# TOC Validation Report



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## Data Validation Report

**Project Name:** New Bedford Harbor

**Collection Date:** September 22 - 30, 2014

**Report Date:** February 23, 2015

**Matrix:** Sediment

**Parameters:** Total Organic Carbon

**Validation Level:** Tier I+

**Laboratory:** Battelle

**Sample Delivery Group (SDG):** L14422692, L1423076, L1423331

**Sample Identification:**  
NBH14-0001 through NBH14-0329

## Introduction

This data review covers the sediment samples listed on the cover sheet. The samples were analyzed by Alpha Analytical for total organic carbon (TOC). The TOC reports are contained within GeoTesting Express report # GTX 302366 (Grain Size).

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

**New Bedford Harbor**

**TOC - Data Qualification Summary**

No Sample Data Qualified in these SDGs

**Laboratory:** Alpha Analytical

**Laboratory Batch:** L1422692\*

**Analysis:** Total Organic Carbon

**Matrix:** Sediment

**Collection Date:** 9/22-9/23-14

**Reviewer:** B. Cutie

**Review Date:** 2/19/15

| <b>Data Element</b>                      | <b>Acceptance Criteria</b>                         | <b>Acceptable (Yes/No)/Comment</b> |
|--|--|------------------------------------|
| Preservation and technical holding times | 4 ± 2°C; Analyze on 28 days                        | Yes                                |
| Method Blank                             | 1 per batch; target analytes < RL                  | Yes                                |
| Standard Reference Material (SRM)        | 1 per batch; %R = 75-125%;<br>RPD ≤ 25%            | Yes                                |
| Lab Duplicates                           | 1 per 20 samples or 5% of field samples; RPD ≤ 25% | Yes                                |
| Field Replicates <sup>1</sup>            | RPD ≤ 50%  | Yes                                |

\* NOTE: This report is contained in Grain Size report # GTX302366.

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

<sup>1</sup> Per QAPP, all field samples are analyzed in duplicate.

**Laboratory:** Alpha Analytical

**Laboratory Batch:** L1423076\*

**Analysis:** Total Organic Carbon

**Matrix:** Sediment

**Collection Date:** 9/24-9/25/14

**Reviewer:** B. Cutie

**Review Date:** 2/19/15

| <b>Data Element</b>                      | <b>Acceptance Criteria</b>                         | <b>Acceptable (Yes/No)/Comment</b> |
|--|--|------------------------------------|
| Preservation and technical holding times | 4 ± 2°C; Analyze on 28 days                        | Yes                                |
| Method Blank                             | 1 per batch; target analytes < RL                  | Yes                                |
| Standard Reference Material (SRM)        | 1 per batch; %R = 75-125%;<br>RPD ≤ 25%            | Yes                                |
| Lab Duplicates                           | 1 per 20 samples or 5% of field samples; RPD ≤ 25% | Yes                                |
| Field Replicates <sup>1</sup>            | RPD ≤ 50%  | Yes                                |

\* NOTE: This report is contained in Grain Size report # GTX302366.

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

<sup>1</sup> Per QAPP, all field samples are analyzed in duplicate.

**Laboratory:** Alpha Analytical

**Laboratory Batch:** L1423331\*

**Analysis:** Total Organic Carbon

**Matrix:** Sediment

**Collection Date:** 9/25, 9/26, 9/29 and 9/30/14

**Reviewer:** B. Cutie

**Review Date:** 2/20/15

| <b>Data Element</b>                      | <b>Acceptance Criteria</b>                         | <b>Acceptable (Yes/No)/Comment</b> |
|--|--|------------------------------------|
| Preservation and technical holding times | 4 ± 2°C; Analyze on 28 days                        | Yes                                |
| Method Blank                             | 1 per batch; target analytes < RL                  | Yes                                |
| Standard Reference Material (SRM)        | 1 per batch; %R = 75-125%;<br>RPD ≤ 25%            | Yes                                |
| Lab Duplicates                           | 1 per 20 samples or 5% of field samples; RPD ≤ 25% | Yes                                |
| Field Replicates <sup>1</sup>            | RPD ≤ 50%  | Yes                                |

\* NOTE: This report is contained in Grain Size report # GTX302366.

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

<sup>1</sup> Per QAPP, all field samples are analyzed in duplicate.

## Total PCB Validation Report



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February 13, 2015

Ms. Deirdre Dahlen  
Battelle  
141 Longwater Drive  
Suite 202  
Norwell, MA 02061

Subject: NBH Data Validation

Dear Ms. Dahlen,

Enclosed are the final validation reports for the sample delivery groups (SDGs) listed below. These SDGs have been validated against the criteria in the long term monitoring (LTM) QAPP.

| <u>SDG #</u> | <u>Fraction</u>  | <u>Date Received for Validation</u> |
|--------------|------------------|-------------------------------------|
| 14-0493      | PCBs – Congeners | 1/6/15                              |
| 14-0494      | PCBs – Congeners | 1/6/15                              |
| 14-0495      | PCBs – Congeners | 1/6/15                              |
| 14-0595      | PCBs – Congeners | 1/6/15                              |

The data validation was performed at Tier I+ level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact me if you have any questions.

Sincerely,



Elizabeth Cutié  
Battelle Columbus Operations

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 22-26 and 29, 2014  
**Report Date:** February 4, 2015  
**Matrix:** Sediment  
**Parameters:** PCB Congeners  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** 14-0493

### Sample Identification:

NBH14-0001  
NBH14-0005  
NBH14-0009  
NBH14-0013  
NBH14-0065  
NBH14-0207  
NBH14-0211  
NBH14-0220  
NBH14-0224  
NBH14-0228  
NBH14-0232  
NBH14-0245  
NBH14-0249  
NBH14-0253  
NBH14-0101  
NBH14-0153  
NBH14-0157  
NBH14-0161  
NBH14-0169  
NBH14-0173

## Introduction

This data review covers 20 sediment samples listed on the cover sheet. The analyses of PCB Congeners (18 congeners) were performed according to Battelle SOP 5-128 (GC/ECD).

The Duplicate Pair is NBH14-0232 and NBH14-0169.

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

**New Bedford Harbor  
PCB Congeners - Data Qualification Summary - SDG 14-0493**

| SDG     | Sample IDs | Compound          | Flag                                  | Reason  |
|---------|------------|-------------------|---------------------------------------|---|
| 14-0493 | NBH14-0161 | All reported PCBs | J/UJ<br>(detects<br>/non-<br>detects) | No/ Surrogates were diluted out of sample NBH14-0161. Dilutions were required because PCB congeners responded above the upper limit of the linear calibration. PCB results will be flagged J (detects) or UJ (non-detects) for the sample without surrogate recoveries. |

**Laboratory:** Battelle Norwell

**Laboratory Batch:** 14-0493

**Analysis:** PCBs by GC/ECD

**Reviewer:** B. Cutie

**Review Date:** 2/2/15 and 2/13/15

**Matrix:** Sediment

**Collection Date:** 9/22-9/26, 9/29/14

| <b>Data Element</b>   | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>   |
|---|--|--|
| Preservation and technical holding times                      | Ice, 4°C ± 2°C<br>Extract within 14 days (cold) and 1 year (frozen)<br>Analyze within 40 days  | Yes/Frozen   |
| Method Blank  | Target Analytes < 5x ssMDL   | Yes  |
| Laboratory Control Sample/Laboratory Control Sample Duplicate | 1 per batch; 70-130 %Recovery  | Yes  |
| Matrix Spike/ Matrix Spike Duplicate                          | 70 - 130% Recovery and RPD ≤ 30% for compounds spiked at a concentration > 5x background       | Yes  |
| Internal Standards  | -50% to +100% of area counts in ICAL   | Yes  |
| Field Replicates  | RPD ≤ 50%  | Yes  |
| Surrogate Spike (Organics)                                    | Recovery results between 40% and 120%.   | No/ Surrogates were diluted out of sample ID# 14-0161. Dilutions were required because PCB congeners responded above the upper limit of the linear calibration. PCB results will be flagged J (detects) or UJ (non-detects) for the sample without surrogate recoveries. |
| Standard Reference Material (SRM)                             | PD ≤ 30% from NIST 95% uncertainty range for compounds with certified concentrations >5x ssMDL | SRM was not included in the dataset. Requested a QAPP deviation report.  |

| Data Element                              | Acceptance Criteria   | Acceptable (Yes/No)/Comment |
|---|---|-----------------------------|
| Initial Calibration                       | ICAL - coefficient of determination > 0.995 (based on a linear curve fit) | Yes                         |
| Initial Calibration Verification (ICV)    | ICV – runs immediately after ICAL; ICV ≤ 20 %D                            | Yes                         |
| Continuing Calibration Verification (CCV) | CCV - run every 12 hours or every 10 samples; CCV ≤ 20 %D                 | Yes                         |
| Percent solids                            | ≥ 50% for all; reported as dry-weight basis                               | Yes                         |

\*Duplicate Pair is NBH14-0232 and NBH14-0169

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 22 - 26, 29 and 30, 2014  
**Report Date:** February 4, 2015  
**Matrix:** Sediment  
**Parameters:** PCB Congeners  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** 14-0494

### Sample Identification:

NBH14-0017  
NBH14-0025  
NBH14-0045  
NBH14-0049  
NBH14-0053  
NBH14-0061  
NBH14-0057  
NBH14-0069  
NBH14-0203  
NBH14-0215  
NBH14-0219  
NBH14-0234  
NBH14-0257  
NBH14-0261  
NBH14-0265  
NBH14-0314  
NBH14-0318  
NBH14-0322  
NBH14-0326  
NBH14-0165



## Introduction

This data review covers 20 sediment samples listed on the cover sheet. The analyses of PCB Congeners (18 congeners) were performed according to Battelle SOP 5-128 (GC/ECD).

Duplicate Pair 1 is NBH14-0215 and NBH14-0219

Duplicate Pair 2 is NBH14-0121 (reported in dataset 14-0495) and NBH14-0234

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

**New Bedford Harbor  
PCB Congeners - Data Qualification Summary - SDG 14-0494**

| SDG     | Sample IDs  | Compound | Flag        | Reason   |
|---------|---|----------|-------------|--|
| 14-0494 | NBH14-0215,<br>NBH14-0219                                     | PCB 206  | J/(detects) | PCB 206 did not meet criteria for the duplicate pair 1. PCB results will be flagged J (detects) or UJ (non-detects) for these samples. |
| 14-0494 | NBH14-0121<br>(reported in<br>dataset 14-0495),<br>NBH14-0234 | PCB 66   | J/(detects) | PCB 66 did not meet criteria for the duplicate pair 2. PCB results will be flagged J (detects) or UJ (non-detects) for these samples.  |

**Laboratory:** Battelle Norwell

**Laboratory Batch:** 14-0494

**Analysis:** PCBs by GC/ECD

**Reviewer:** B. Cutie

**Review Date:** 2/2/15 and 2/13/15

**Matrix:** Sediment

**Collection Date:** 9/22-9/26, 9/29 and 9/30/14

| <b>Data Element</b>   | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>  |
|---|--|---|
| Preservation and technical holding times                      | Ice, 4°C ± 2°C<br>Extract within 14 days (cold) and 1 year (frozen)<br>Analyze within 40 days  | Yes/Frozen  |
| Method Blank  | Target Analytes < 5x ssMDL   | Yes   |
| Laboratory Control Sample/Laboratory Control Sample Duplicate | 1 per batch; 70-130 %Recovery  | Yes   |
| Matrix Spike/ Matrix Spike Duplicate                          | 70 - 130% Recovery and RPD ≤ 30% for compounds spiked at a concentration > 5x background       | Yes   |
| Internal Standards  | -50% to +100% of area counts in ICAL   | Yes   |
| Field Replicates  | RPD ≤ 50%  | No/PCB 206 did not meet criteria for the duplicate pair 1. No/PCB 66 did not meet criteria for the duplicate pair 1. PCB results will be flagged J (detects) or UJ (non-detects) for these samples. |
| Surrogate Spike (Organics)                                    | Recovery results between 40% and 120%.   | Yes   |
| Standard Reference Material (SRM)                             | PD ≤ 30% from NIST 95% uncertainty range for compounds with certified concentrations >5x ssMDL | SRM was not included in the dataset. Requested a QAPP deviation report.   |
| Initial Calibration   | ICAL - coefficient of determination > 0.995 (based on a linear curve fit)                      | Yes   |
| Initial Calibration Verification (ICV)                        | ICV – runs immediately after ICAL;<br>ICV ≤ 20 %D  | Yes   |

| Data Element                              | Acceptance Criteria   | Acceptable (Yes/No)/Comment |
|---|---|-----------------------------|
| Continuing Calibration Verification (CCV) | CCV - run every 12 hours or every 10 samples; $CCV \leq 20 \%D$ | Yes                         |
| Percent solids                            | $\geq 50\%$ for all; reported as dry-weight basis               | Yes                         |

\*Duplicate Pair 1 is NBH14-0215 and NBH14-0219

\* Duplicate Pair 2 is NBH14-0121 (reported in dataset 14-0495) and NBH14-0234

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 22, 24, 25, 26, 29 and 30, 2014  
**Report Date:** February 4, 2015  
**Matrix:** Sediment  
**Parameters:** PCB Congeners  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** 14-0495

### Sample Identification:

NBH14-0029  
NBH14-0033  
NBH14-0037  
NBH14-0041  
NBH14-0181  
NBH14-0185  
NBH14-0189  
NBH14-0193  
NBH14-0197  
NBH14-0199  
NBH14-0233  
NBH14-0237  
NBH14-0241  
NBH14-0302  
NBH14-0306  
NBH14-0310  
NBH14-0121  
NBH14-0125  
NBH14-0129  
NBH14-0177

## Introduction

This data review covers 20 sediment samples listed on the cover sheet. The analyses of PCB Congeners (18 congeners) were performed according to Battelle SOP 5-128 (GC/ECD).

Duplicate Pair 1 is NBH14-0181 and NBH14-0233

Duplicate Pair 2 is NBH14-0121 and NBH14-0234 (reported in dataset 14-0494)

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

**New Bedford Harbor  
PCB Congeners - Data Qualification Summary - SDG 14-0495**

| SDG     | Sample IDs   | Compound         | Flag                              | Reason  |
|---------|--|------------------|-----------------------------------|---|
| 14-0495 | NBH14-0029,<br>NBH14-0033,<br>NBH14-0037,<br>NBH14-0041,<br>NBH14-0181,<br>NBH14-0185,<br>NBH14-0189 | PCB 206, PCB 209 | J/UJ<br>(detects/non<br>-detects) | PCB 206 and PCB 209 did not meet criteria in one CCV. PCB results will be flagged J (detects) or UJ (non-detects) for the associated samples. |
| 14-0495 | NBH14-0121,<br>NBH14-0234<br>(reported in<br>dataset 14-0494)  | PCB 66           | J/(detects)                       | PCB 66 did not meet criteria for duplicate pair 2. PCB results will be flagged J (detects) or UJ (non-detects) for these samples.             |

**Laboratory:** Battelle Norwell

**Laboratory Batch:** 14-0495

**Analysis:** PCBs by GC/ECD

**Reviewer:** B. Cutie

**Review Date:** 2/3/15 and 2/13/15

**Matrix:** Sediment

**Collection Date:** 9/22, 9/24-9/26, 9/29 and 9/30/14

| <b>Data Element</b>   | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>   |
|---|--|--|
| Preservation and technical holding times                      | Ice, 4°C ± 2°C<br>Extract within 14 days (cold) and 1 year (frozen)<br>Analyze within 40 days  | Yes/Frozen   |
| Method Blank  | Target Analytes < 5x ssMDL   | Yes  |
| Laboratory Control Sample/Laboratory Control Sample Duplicate | 1 per batch; 70-130 %Recovery  | Yes  |
| Matrix Spike/ Matrix Spike Duplicate                          | 70 - 130% Recovery and RPD ≤ 30% for compounds spiked at a concentration > 5x background       | Yes  |
| Internal Standards  | -50% to +100% of area counts in ICAL   | Yes  |
| Field Replicates  | RPD ≤ 50%  | No/PCB 66 did not meet criteria for duplicate pair 2. PCB results will be flagged J (detects) or UJ (non-detects) for these samples. |
| Surrogate Spike (Organics)                                    | Recovery results between 40% and 120%.   | Yes  |
| Standard Reference Material (SRM)                             | PD ≤ 30% from NIST 95% uncertainty range for compounds with certified concentrations >5x ssMDL | SRM was not included in the dataset. Requested a QAPP deviation report.  |
| Initial Calibration   | ICAL - coefficient of determination > 0.995 (based on a linear curve fit)                      | Yes  |
| Initial Calibration Verification (ICV)                        | ICV – runs immediately after ICAL;<br>ICV ≤ 20 %D  | Yes  |
| Continuing Calibration Verification (CCV)                     | CCV - run every 12 hours or every 10 samples; CCV ≤ 20 %D                                      | No/PCB 206 and PCB 209 did not meet criteria in one  |



| Data Element   | Acceptance Criteria                         | Acceptable (Yes/No)/Comment  |
|----------------|---|--|
|                |   | of the CCVs (File M7442.D). Affected samples were analyzed after the failing CCV and before the next passing CCV. PCB results will be flagged J (detects) or UJ (non-detects) for these samples. |
| Percent solids | ≥ 50% for all; reported as dry-weight basis | Yes  |

\*Duplicate Pair 1 is NBH14-0181 and NBH14-0233

\*Duplicate Pair 2 is NBH14-0121 and NBH14-0234 (reported in dataset 14-0494)

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 22 - 25 and 29, 2014  
**Report Date:** February 4, 2015  
**Matrix:** Sediment  
**Parameters:** PCB Congeners  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** 14-0496

### Sample Identification:

NBH14-0021  
NBH14-0077  
NBH14-0089  
NBH14-0093  
NBH14-0097  
NBH14-0269  
NBH14-0273  
NBH14-0277  
NBH14-0281  
NBH14-0285  
NBH14-0289  
NBH14-0109  
NBH14-0113  
NBH14-0117  
NBH14-0133  
NBH14-0137  
NBH14-0141  
NBH14-0145  
NBH14-0149

## Introduction

This data review covers 19 sediment samples listed on the cover sheet. The analyses of PCB Congeners (18 congeners) were performed according to Battelle SOP 5-128 (GC/ECD).

There was no Duplicate Pair in this dataset.

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

**New Bedford Harbor  
PCB Congeners - Data Qualification Summary - SDG 14-0496**

No Sample Data Qualified in this SDG

**Laboratory:** Battelle Norwell

**Laboratory Batch:** 14-0496

**Analysis:** PCBs by GC/ECD

**Reviewer:** B. Cutie

**Review Date:** 2/4/15 and 2/13/15

**Matrix:** Sediment

**Collection Date:** 9/22-9/25 and 9/29/14

| <b>Data Element</b>   | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>                                      |
|---|--|---|
| Preservation and technical holding times                      | Ice, 4°C ± 2°C<br>Extract within 14 days (cold) and 1 year (frozen)<br>Analyze within 40 days  | Yes/Frozen  |
| Method Blank  | Target Analytes < 5x ssMDL   | Yes   |
| Laboratory Control Sample/Laboratory Control Sample Duplicate | 1 per batch; 70-130 %Recovery  | Yes   |
| Matrix Spike/ Matrix Spike Duplicate                          | 70 - 130% Recovery and RPD ≤ 30% for compounds spiked at a concentration > 5x background       | Yes   |
| Internal Standards  | -50% to +100% of area counts in ICAL   | Yes   |
| Field Replicates  | RPD ≤ 50%  | Not applicable  |
| Surrogate Spike (Organics)                                    | Recovery results between 40% and 120%.   | Yes   |
| Standard Reference Material (SRM)                             | PD ≤ 30% from NIST 95% uncertainty range for compounds with certified concentrations >5x ssMDL | SRM was not included in the dataset. Requested a QAPP deviation report. |
| Initial Calibration   | ICAL - coefficient of determination > 0.995 (based on a linear curve fit)                      | Yes   |
| Initial Calibration Verification (ICV)                        | ICV – runs immediately after ICAL;<br>ICV ≤ 20 %D  | Yes   |
| Continuing Calibration Verification (CCV)                     | CCV - run every 12 hours or every 10 samples; CCV ≤ 20 %D                                      | Yes   |

| Data Element   | Acceptance Criteria                         | Acceptable (Yes/No)/Comment |
|----------------|---|-----------------------------|
| Percent solids | ≥ 50% for all; reported as dry-weight basis | Yes                         |

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.

March 18, 2015

Attn: Ms. Deirdre Dahlen  
Battelle  
141 Longwater Drive  
Suite 202  
Norwell, MA 02061

Subject: NBH Data Validation

Dear Ms. Dahlen,

Enclosed is the final validation report for the sample delivery group (SDG) listed below.

| <u>SDG #</u> | <u>Fraction</u> | <u>Date Received</u> |
|--------------|-----------------|----------------------|
| 14-0497      | PCBs – Total    | 3/5/15               |

The data validation was performed at the Tier I+ level using the following guidelines, as applicable to each method:

- EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013
- EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008

Please feel free to contact me if you have any questions.

Sincerely,



Elizabeth Cutié  
Battelle Columbus Operations

## Data Validation Report

**Project Name:** New Bedford Harbor  
**Collection Date:** September 23 and 24, 2014  
**Report Date:** March 18, 2015  
**Matrix:** Sediment  
**Parameters:** PCB Congeners  
**Validation Level:** Tier I+  
**Laboratory:** Battelle  
**Sample Delivery Group (SDG):** 14-0497

### Sample Identification:

NBH14-0073  
NBH14-0081  
NBH14-0085  
NBH14-0105



## Introduction

This data review covers 4 sediment samples listed on the cover sheet. The analyses of PCB Congeners (18 congeners) were performed according to Battelle SOP 5-128 (GC/ECD).

There was no Duplicate Pair in this dataset.

A qualification summary is provided at the end of this report which details any data validation qualifiers that were assigned.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

### **New Bedford Harbor PCB Congeners (Total) - Data Qualification Summary - SDG 14-0497**

No Sample Data Qualified in this SDG

**Laboratory:** Battelle Norwell

**Laboratory Batch:** 14-0497

**Analysis:** PCBs by GC/ECD

**Reviewer:** B. Cutie

**Review Date:** 3/12/15

**Matrix:** Sediment

**Collection Date:** 9/23-9/24/14

| <b>Data Element</b>   | <b>Acceptance Criteria</b>   | <b>Acceptable (Yes/No)/Comment</b>  |
|---|--|---|
| Preservation and technical holding times                      | Ice, 4°C ± 2°C<br>Extract within 14 days (cold) and 1 year (frozen)<br>Analyze within 40 days  | Yes/Frozen  |
| Method Blank  | Target Analytes < 5x ssMDL   | Yes   |
| Laboratory Control Sample/Laboratory Control Sample Duplicate | 1 per batch; 70-130 %Recovery  | Yes   |
| Matrix Spike/ Matrix Spike Duplicate                          | 70 - 130% Recovery and RPD ≤ 30% for compounds spiked at a concentration > 5x background       | Yes   |
| Internal Standards  | -50% to +100% of area counts in ICAL   | Yes   |
| Field Replicates  | RPD ≤ 50%  | Not applicable  |
| Surrogate Spike (Organics)                                    | Recovery results between 40% and 120%.   | Yes   |
| Standard Reference Material (SRM)                             | PD ≤ 30% from NIST 95% uncertainty range for compounds with certified concentrations >5x ssMDL | SRM was not included in the dataset. SRM was included in the Work Order on 2/20/15. |
| Initial Calibration   | ICAL - coefficient of determination > 0.995 (based on a linear curve fit)                      | Yes   |
| Initial Calibration Verification (ICV)                        | ICV – runs immediately after ICAL;<br>ICV ≤ 20 %D  | Yes   |
| Continuing Calibration Verification (CCV)                     | CCV - run every 12 hours or every 10 samples; CCV ≤ 20 %D                                      | Yes   |

| Data Element   | Acceptance Criteria                         | Acceptable<br>(Yes/No)/Comment |
|----------------|---|--------------------------------|
| Percent solids | ≥ 50% for all; reported as dry-weight basis | Yes                            |

**References:**

Final Quality Assurance Project Plan for New Bedford harbor Long Term Monitoring VI, New Bedford Harbor Superfund Site, New Bedford, MA, Revision 0, September 2014

EPA-NE Environmental Data Review Supplement, Regional Data Review Elements and Superfund Specific Guidance/Procedures, April 2013.