FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAR 2 5 2014

Nick Starusky
Superintendent
Skanska USA Building
253 Summer Street
Boston, MA 02210

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Harvard College/Chao Center site located at East Drive (Harvard Business School Campus) Allston, MA 02163, Suffolk County; Authorization # MAG910608

Dear Mr. Starusky:

Based on the review of a Notice of Intent (NOI) submitted by Ms. Lee E. Penwell from Haley&Aldrich LLC, on behalf of the President and Fellows of Harvard College through Harvard Business School (Harvard), for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes only five parameters namely, total suspended solids (TSS), benzene, total BTX, chlorides and arsenic. These were reported "Believed Present" for this site by your consultant.

Also, please note that arsenic the only metal parameter included on the checklist is a dilution dependent pollutant subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For this site the dilution factor 54.6 is greater than fifty to one hundred (>50-100), established in the RGP. (See the RGP Appendix IV for

Massachusetts facilities). Therefore, the limit for arsenic of 500 ug/L is required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification because the operations at the site will result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported this project will terminate on March 1, 2016. You are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Paul Canavan, BWSC
Lee. E. Penwell, Haley&Aldrich

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910608**
Authorization Issued:	February, 2014
Facility/Site Name:	Harvard Collegue/Chao Center
Facility/Site Address:	East Drive (Harvard Business School Campus)
	Email address of owner: pdietel@hbs.edu
Legal Name of Operator:	Skanska USA Building
Operator contact name, title, and Address:	Nick Starusky, Superintendent
	Email: Nick.Starusky@skanska.com
Estimated date of the site's Completion:	March 31, 2016
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Sub-category A. General Urban Fill Sites.
RGP Termination Date:	September 10, 2015
Receiving Water:	Charles River

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
√	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [(11/12)] Freshwater Limts	Minimum level=ML	
	39. Antimony	5.6	ML	10
√	40. Arsenic **	10	ML	20
	41. Cadmium **	0.2	ML	10
	42. Chromium III (trivalent) **	48.8	ML	15
	43. Chromium VI (hexavalent) **	11.4	ML	10
	44. Copper **	5.2	ML	15
	45. Lead **	1.3	ML	20
	46. Mercury **	0.9	ML	02
	47. Nickel **	29	ML	20
	48. Selenium **	5	ML	20
	49. Silver	1.2	ML	10
	50. Zinc **	66.6	ML	15
	51. Iron	1,000	ML	20

	Other Parameters	Limit
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab[13]
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab[13]
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab[14]
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]
	62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal	1.5°F; 1/Month/Grab[14]
	63. Maximum Change in Temperature in MA – Any Class SB water body - July to September	1.5°F; 1/Month/Grab[14]
	64. Maximum Change in Temperature in MA –Any Class SB water body - October to June	4°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.
[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).
[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.
[14] Temperature sampling per Method 170.1

NOTICE OF INTENT (NOI)
TEMPORARY CONSTRUCTION DEWATERING
CHAO CENTER
HARVARD BUSINESS SCHOOL
ALLSTON, MASSACHUSETTS

by

Haley & Aldrich, Inc.
Boston, Massachusetts

on behalf of

Harvard Business School
Boston, Massachusetts

for

US Environmental Protection Agency
Boston, Massachusetts

File No. 39291-001
January 2014

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129

Tel: 617.886.7400
Fax: 617.886.7600
HaleyAldrich.com

HALEY&
ALDRICH

29 January 2014
File No. 39291-001

US Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02109-3912

Attention: Ms. Shelly Puleo

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Chao Center
Harvard Business School
Allston, Massachusetts

Dear Ms. Puleo:

On behalf of our client President and Fellows of Harvard College acting by and through Harvard Business School (Harvard), and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for temporary construction site dewatering under the RGP. Temporary dewatering is planned in support of the construction of the proposed Chao Center at the current Kresge Hall site at Harvard Business School, which is located in the northeastern portion of the Harvard Business School campus near Soldiers Field Road in Allston, Massachusetts, as shown on Figure 1, Project Locus. We anticipate construction dewatering will be conducted, as necessary, during below grade excavation and planned construction.

The site is bounded by the recently constructed Tata Hall to the east, East Drive to the west, Soldier Field Park 1 Building to the south and McCollum and Baker Hall to the North. Existing site grades vary across the site, typically ranging between El. 16 and as high as El. 20 Boston City Base (BCB).

SITE HISTORY

Historic site use was evaluated based on a review of historical Sanborn Fire Insurance maps dated 1898, 1925, 1950, 1964, 1989, 1990, 1993, 1994, 1995 and 1996. The subject site is depicted as vacant land from at least 1898 to 1925. By 1950, the eastern portion of a twelve building multi-unit residential development identified as the Harvard Veteran Apartments occupied the site. The apartments were razed, and Kresge Hall was constructed by 1952. Kresge Hall is first depicted on the 1964 Sanborn Map as a refectory. Significant changes to the site were not noted on Sanborn Maps since 1964. Adjoining properties were historically vacant land prior to development of Harvard Business School in the mid 1900s.

PROPOSED CONSTRUCTION

The proposed Chao Center building will consist of a 3-story building with a partial one-story below grade basement. The ground/first floor is planned at El. 17.5 and the top of the basement floor slab is approximately El. -0.2. The bottom of the excavation for the foundation construction will be at approximately El. -4.5 with locally deeper excavations for pits and pile caps as deep as El. -8.4.

REGULATORY BACKGROUND

Testing of soil samples collected in November and December 2013 indicated concentrations of several chemicals in urban fill and organic soils above MCP Reportable Concentrations. Contaminants in urban fill above Reportable Concentrations are chlordane (a pesticide), benzo(a)pyrene (a polycyclic aromatic hydrocarbon (PAH)), and arsenic. The detected chlordane concentration is consistent with application per the manufacturer's instructions and is considered exempt from reporting under 310 CMR 40.0317(8)(c). The sample containing elevated benzo(a)pyrene also contained coal coal ash, wood ash and asphalt and is considered exempt from reporting under 310 CMR 40.0317(9). A Release Notification Form (RNF) and a Response Action Outcome (RAO) will be submitted to MassDEP for the arsenic detection (a common urban fill contaminant) prior to the start of proposed construction in March 2014.

Elevated concentrations of benzene, phenol, and petroleum hydrocarbons (TPH) were detected in organic soils. The TPH is exempt from reporting in accordance with 310 CMR 40.0360(2), since extractable petroleum hydrocarbon (EPH) fractions are below RCS-1. Release Notification Forms will be submitted to MassDEP for the benzene and phenol detections in soil prior to exposure and excavation of the organic soils.

GROUNDWATER SAMPLING

In support of the NOI, one unfiltered groundwater sample was obtained from observation well HBS26, on 25 November 2013. The groundwater sample was submitted to Alpha Analytical, Inc. of Westborough, Massachusetts (Alpha Analytical) for analysis of VOCs, SVOCs, PAHs, total metals, dissolved metals, EPH/VPH, pesticides, PCBs, Total Suspended Solids (TSS), chloride, total cyanide, amenable cyanide, physiologically available cyanide, total phenolics and total residual chlorine. Due to matrix interference for Selenium with the original sample, a second groundwater sample was collected from HBS26 on 31 December 2013 and analyzed for total and dissolved selenium and chloride. A groundwater sample was also collected from B6A (OW) on 31 December 2013 and analyzed for total and dissolved selenium and chloride. Groundwater from B6A (OW) was also analyzed for benzene and EPH in order to assess the impact of the benzene release to soil on site groundwater.

Results of the analysis indicate total arsenic concentrations above NPDES RGP effluent limits for Category III sites, but below the applicable RCGW-2 Reportable Concentrations. The results of water quality testing are summarized in Table I. Locations of the observation wells are shown on Figure 2.

DILUTION FACTOR APPLICATION FOR METALS

A Dilution Factor (DF) was calculated for the detected levels of total metals greater than the applicable effluent limits. The DF is applicable to arsenic, and the calculated DF was used to find the appropriate Dilution Range concentrations for this metal. The DF was calculated using the following equation:

$$DF = (Q_d + Q_s)/Q_d$$

where Q_d is the maximum discharge flow rate, assumed to be 150 gallons per minute (GPM) or approximately 0.33 cubic feet per second (cfs), and Q_s is the receiving water flow rate, minimum for 7 consecutive days with a recurrence interval of 10 years, assumed to be 17.7 cfs based on data collected by the United States Geological Survey (USGS) and published in the "Clean Charles 2005 Water Quality Report, 2003 Core Monitoring Report" prepared by the US EPA Office of Environmental Measurement and Evaluation dated November 2004. Using these assumed values, the DF is equal to 54.64. According to Appendix IV of the Remediation General Permit, the ceiling limitation for the calculated dilution factor of 54.64 for arsenic is 500 ug/L. Since arsenic concentrations for the site are less than 500 ug /L, treatment to remove total arsenic is not anticipated.

DEWATERING SYSTEM AND OFF-SITE DISCHARGE

During construction, it will be necessary to perform temporary dewatering to control surface water runoff from precipitation, groundwater seepage and construction-generated water to enable construction in-the-dry. Construction and construction dewatering activities are currently anticipated to begin as early as March 2014. On average, we estimate effluent discharge rates of about 50 gallons per minute (gpm) or less, with occasional peak flows of approximately 150 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations.

Construction dewatering under this RGP NOI will include piping and discharging to a storm drain located near the site. The storm drain is privately owned by Harvard University and travels west/northwest to discharge directly into the Charles River. The proposed discharge route is shown on Figure 3.

An effluent treatment system will be designed by the Contractor to meet NPDES RGP discharge criteria. Prior to discharge, collected water will be routed through a sedimentation tank and a bag filter, to remove suspended solids and undissolved chemical constituents, as shown on Figure 4.

APPENDICES

The completed "Suggested Notice of Intent" (NOI) form as provided in the RGP is enclosed in Appendix A. The Site is owned by Harvard Business School. Haley & Aldrich will monitor the Contractor's dewatering activities on behalf of Harvard. In accordance with the requirements for this NOI submission, Harvard Business School as the owner and Skanska USA Building as the operator are listed as co-permittees for this NPDES RGP, and therefore both have signed the NOI form.

A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, is included in Appendix B. Appendices C and D include National Register of Historic Places and Endangered Species Act Documentation, respectively. A copy of the groundwater testing laboratory data reports from samples obtained by Haley & Aldrich in November and December 2013 are provided in Appendix E.

CLOSING

Thank you very much for your consideration of this NOI. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely yours,
HALEY & ALDRICH, INC.

Lee E. Penwell
Staff Environmental Geologist

Bryan P. Sweeney, P.E.
Senior Vice President

Attachments:

Table I – Summary of Groundwater Quality Data
Figure 1 – Site Locus
Figure 2 – Site and Subsurface Exploration Location Plan
Figure 3 – Proposed Dewatering Effluent Discharge Route
Figure 4 – Proposed Treatment System Schematic
Appendix A – Notice of Intent (NOI) for Remediation General Permit (RGP)
Appendix B – Best Management Practices Plan (BMPP)
Appendix C – Endangered Species Act Documentation
Appendix D – National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix E – Laboratory Data Reports

c: Harvard Business School; Attn: Reed Bergwall, Paul Dietel
Skanska USA Building; Attn: Nick Starusky

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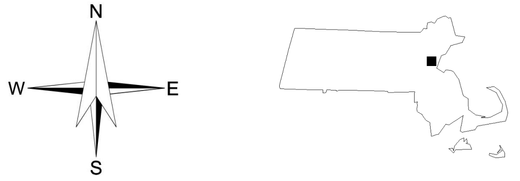
TABLE I
SUMMARY OF GROUNDWATER QUALITY DATA
CHAO CENTER
HARVARD BUSINESS SCHOOL
BOSTON, MASSACHUSETTS
FILE NO. 39291-001

SAMPLE DESIGNATION SAMPLING DATE LAB SAMPLE ID	RCGW-2 Reportable Concentrations	Appendix III Category III Effluent Limits to Freshwater	HBS26-OW-112513 11/25/2013 L1324034-01	HBS26 12/31/2013 L1401208-01, R1, R5	B6A (OW)-S1 12/31/2013 L1326422-02	B6A (OW)-S2 12/31/2013 L1400792-01
VOCs (ug/l)						
Benzene	2000	100[+]	ND(0.25)	-	31	-
Total VOCs	NA	NA	ND	-	-	-
Total SVOCs (ug/l)	NA	NA	ND	-	-	-
Total Group I PAH	NA	10	ND	-	-	-
Total Group II PAH	NA	100	ND	-	-	-
EPH (ug/l)						
C11-C22 Aromatics	5000	5000	ND(50)	-	ND(50)	-
C19-C36 Aliphatics	50000	5000	ND(50)	-	ND(50)	-
C9-C18 Aliphatics	5000	5000	ND(50)	-	ND(50)	-
VPH (ug/l)						
C5-C8 Aliphatics	3000	5000	ND(125)	-	-	-
C9-C10 Aromatics	7000	5000	ND(125)	-	-	-
C9-C12 Aliphatics	5000	5000	ND(125)	-	-	-
Total Metals (ug/l)						
Antimony, Total	8000	5.6	ND(5)	-	-	-
Arsenic, Total	900	10	10.15	-	-	-
Cadmium, Total	4	0.2	ND(1)	-	-	-
Chromium, Total	300	48.8	ND(5)	-	-	-
Chromium, Hexavalent	300	11.4	ND(500)	-	-	-
Copper, Total	100000	5.2	ND(5)	-	-	-
Iron, Total	NA	1000	ND(25)	-	-	-
Lead, Total	10	1.3	ND(2.5)	-	-	-
Mercury, Total	20	0.9	ND(0.1)	-	-	-
Nickel, Total	200	29	ND(2.5)	-	-	-
Selenium, Total	100	5	Note 4	ND(1.39)	-	ND(0.28)
Silver, Total	7	1.2	ND(2)	-	-	-
Zinc, Total	900	66.6	ND(50)	-	-	-
Dissolved Metals (ug/l)						
Antimony, Dissolved	8000	NA	ND(2.5)	-	-	-
Arsenic, Dissolved	900	NA	7.32	-	-	-
Cadmium, Dissolved	4	NA	ND(2.5)	-	-	-
Chromium, Dissolved	300	NA	ND(5)	-	-	-
Copper, Dissolved	100000	NA	ND(5)	-	-	-
Iron, Dissolved	NA	NA	ND(25)	-	-	-
Lead, Dissolved	10	NA	ND(5)	-	-	-
Mercury, Dissolved	20	NA	ND(0.1)	-	-	-
Nickel, Dissolved	200	NA	ND(2.5)	-	-	-
Selenium, Dissolved	100	NA	Note 4	ND(1.39)	-	ND(0.28)
Silver, Dissolved	7	NA	ND(1.25)	-	-	-
Zinc, Dissolved	900	NA	ND(50)	-	-	-
PCBs (ug/l)	NA	0.000064*	ND	-	-	-
Pesticides (ug/l)	NA	NA	ND	-	-	-
General Chemistry						
Chloride (ug/l)	NA	Monitor	13800000	13100000	-	703000
Chlorine, Total Residual (ug/l)	NA	11	ND(10)	-	-	-
Cyanide, Amenable (ug/l)	NA	NA	ND(5)	-	-	-
Cyanide, Physiologically Available (ug/l)	30	NA	ND(2.5)	-	-	-
Cyanide, Total (ug/l)	30	5.2	ND(2.5)	-	-	-
Phenolics, Total (ug/l)	NA	300	140	-	-	-
Solids, Total Suspended (ug/l)	NA	30000	7000	-	-	-

Abbreviations:
NA: Not applicable
ND(2.5): Not detected; number in parentheses is half the laboratory reporting limit
[+] : 100 ug/l represents the effluent limit for the sum of Benzene, Toluene, Ethyl Benzene, and Xylene concentrations.
* : Or minimum limits per acceptable test method used (ND)

Notes:
1. This table includes only those compounds detected on the dates indicated.
2. **Bold** values exceed MCP RCGW-2 concentrations.
3. Red Values exceed NPDES RGP effluent criteria for discharge to freshwater.
4. Original total and dissolved Selenium results indicated a false positive due to matrix interference. A second sample (HBS26 dated 12/31/2013) was submitted for analysis with hydride preparation to eliminate the matrix interference, and results indicate no detectable Selenium.

SITE COORDINATES: 42°21'60"N,71°7'12"W



U.S.G.S. QUADRANGLE: BOSTON SOUTH, MA

HALEY & ALDRICH

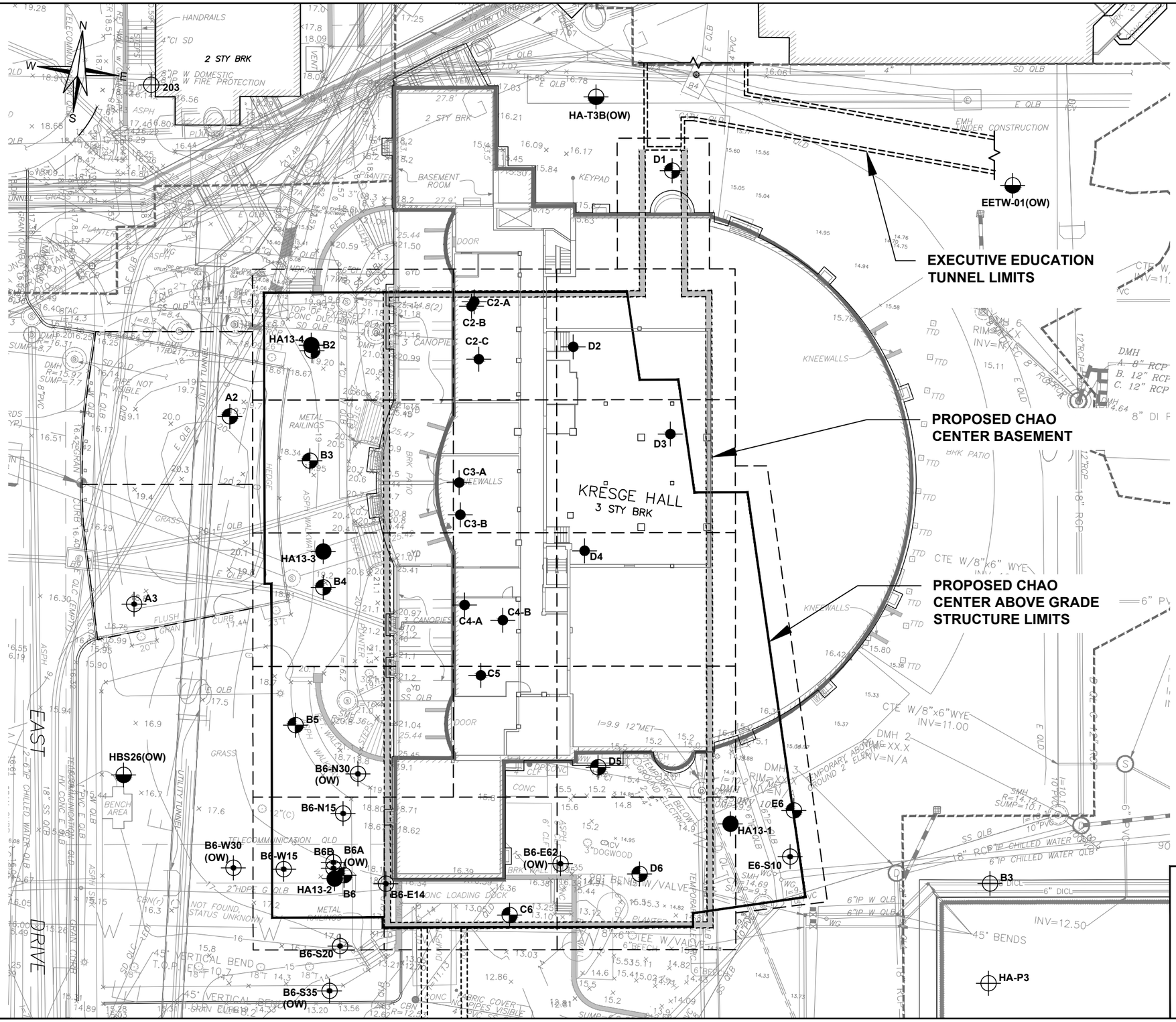
THE CHAO CENTER
HARVARD BUSINESS SCHOOL
BOSTON, MASSACHUSETTS

PROJECT LOCUS

SCALE: 1:24,000
JANUARY 2014

FIGURE 1

39291-000 1.PDF



LEGEND:

- **B2** — LOCATION OF GEOPROBE DRILLED BY NORTHERN DRILL SERVICES BETWEEN 20 AND 22 NOVEMBER 2013 OR TEST BORING DRILLED BY GEOLOGIC EARTH EXPLORATION BETWEEN 25 AND 27 NOVEMBER 2013
- **C2-A** — LOCATION OF INTERIOR CONCRETE SLAB CORE AND HAND AUGUR SAMPLING BY NORTHERN DRILL SERVICES BETWEEN 20 AND 22 NOVEMBER, 27 NOVEMBER AND 2 AND 4 DECEMBER 2013
- **HA13-1** — LOCATION OF TEST BORING DRILLED BY NORTHERN DRILL SERVICES BETWEEN 12 AND 13 FEBRUARY 2013
- **HA-T3B** — LOCATION OF OBSERVATION WELL INSTALLED BY OTHERS
- **HA-P3** — LOCATION OF TEST BORINGS DRILLED BY OTHERS
- **B6A** — LOCATION OF GEOPROBE DRILLED BY NORTHERN DRILL SERVICES BETWEEN 26 AND 31 DECEMBER 2013
- **(OW)** — INDICATES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

NOTES:

1. BASE PLAN TAKEN FROM DRAWING C-2.0 ENTITLED "SITE UTILITY PLAN", RECEIVED ON 1 OCTOBER 2013 AND PREPARED BY NITSCH ENGINEERING, INC.

0 30 60
SCALE IN FEET

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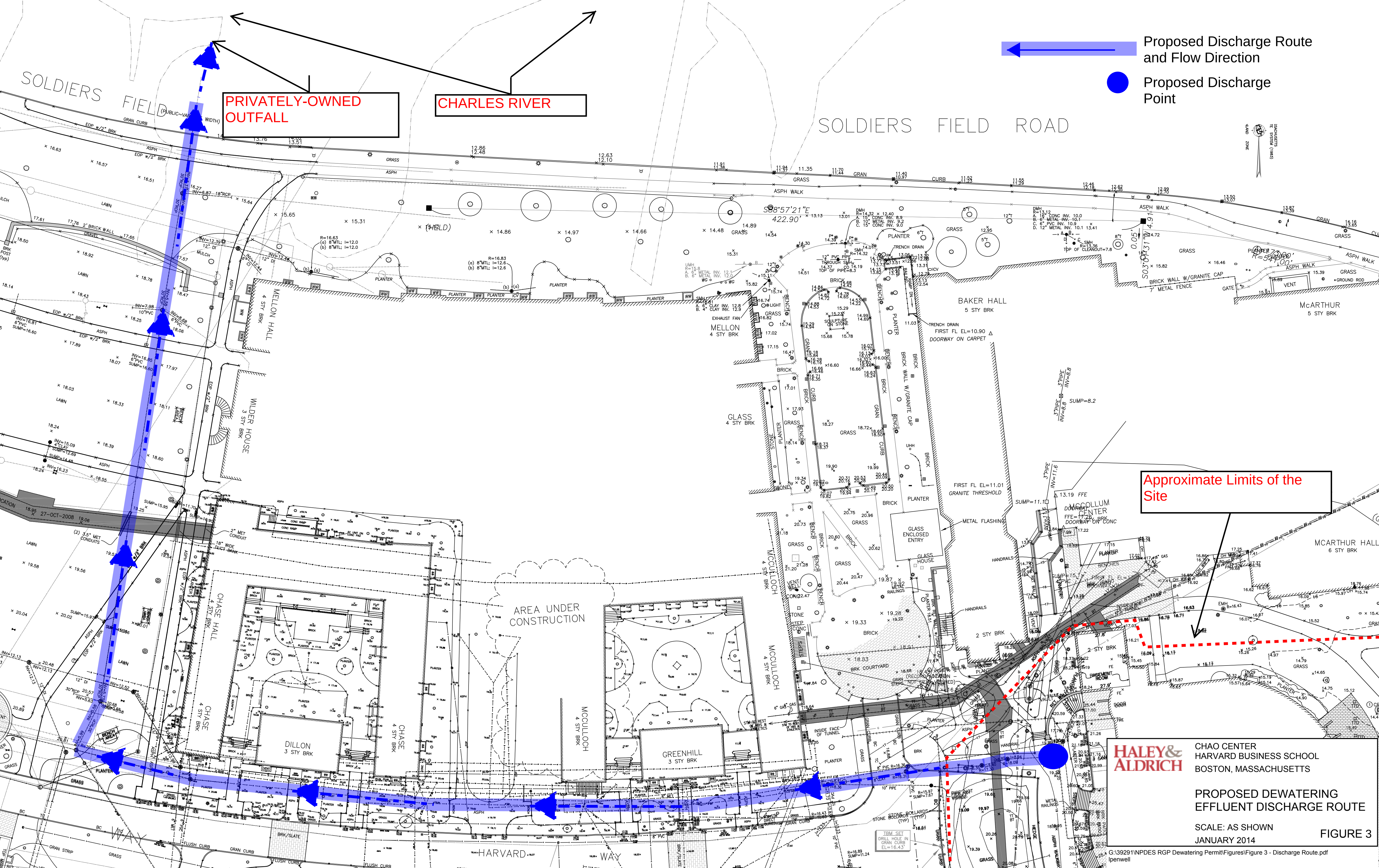
THE CHAO CENTER
HARVARD BUSINESS SCHOOL
ALLSTON, MASSACHUSETTS

SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
JANUARY 2014

FIGURE 2

J:\GRAPHICS\39291\39291-001-B011.DWG



HALEY & ALDRICH

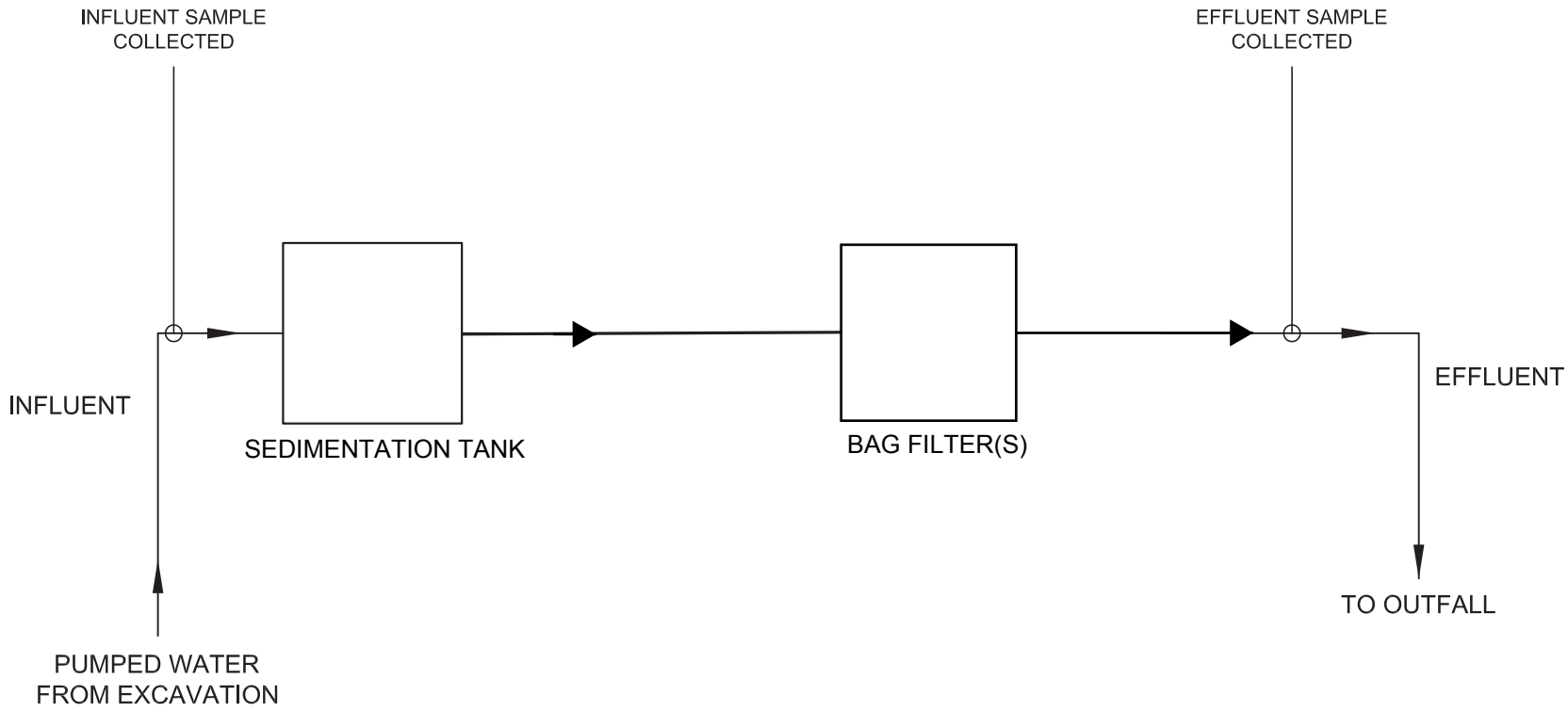
CHAO CENTER
HARVARD BUSINESS SCHOOL
BOSTON, MASSACHUSETTS

PROPOSED DEWATERING EFFLUENT DISCHARGE ROUTE

SCALE: AS SHOWN
JANUARY 2014

FIGURE 3

G:\39291\NPDES RGP Dewatering Permit\Figures\Figure 3 - Discharge Route.pdf
lpenwell



LEGEND:

DIRECTION OF FLOW

NOTE:

1. DETAILS OF TREATMENT SYSTEM MAY VARY FROM SYSTEM INDICATED ABOVE. SPECIFIC MEANS AND METHODS OF TREATMENT TO BE SELECTED BY CONTRACTOR. WATER WILL BE TREATED TO MEET REQUIRED EFFLUENT STANDARDS.

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BOSTON, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
JANUARY 2014

FIGURE 4

APPENDIX A

Notice of Intent (NOI) for Remediation General Permit (RGP)

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of **facility/site**: Chao Center		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 71°7'12" W latitude: 42°22'0" N	Facility SIC code(s): 8220	Street: East Drive (Harvard Business School Campus)		
b) Name of **facility/site owner:** Harvard Business School		Town: Allston		
Email address of facility/site owner: pdietel@hbs.edu		State: MA	Zip: 02163	County: Suffolk
Telephone no. of facility/site **owner**: 617.495.8896				
Fax no. of facility/site **owner**: 617.496.7456		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe:		
Address of **owner** (if different from site):				
Street: Shad Hall 033, 70 North Harvard Street				
Town: Allston	State: MA	Zip: 02163	County: Suffolk County	
c) Legal name of **operator**:	**Operator** telephone no: 617.2293.1898			
Skanska USA Building	**Operator** fax no.: 855.290.1667	**Operator** email: Nick.Starusky@skanska.com		
Operator contact name and title: Nick Starusky, Superintendent				
Address of **operator** (if different from owner):	Street: 253 Summer Street			
Town: Boston	State: MA	Zip: 02210	County: Suffolk	

d) Check Y for "yes" or N for "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ◉, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ○ N ◉, if Y, date and tracking #:
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ◉ N ○
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ◉ N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ○ N ◉
If Y, please list:
1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y ○ N ◉,
if Y, number:
2. Final Dewatering General Permit? Y ○ N ◉,
if Y, number:
3. EPA Construction General Permit? Y ○ N ◉,
if Y, number:
4. Individual NPDES permit? Y ○ N ◉,
if Y, number:
5. any other water quality related individual or general permit? Y ○ N ◉, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ◉

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☒ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Temporary Construction Dewatering.

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 0.33 Is maximum flow a **design value**? Y ○ N ◉
Average flow (include units) 0.11 cfs Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:

pt.1: lat 710712	long 422200	pt.2: lat.	long.	;	
pt.3: lat	long	pt.4: lat.	long.	;	
pt.5: lat	long	pt.6: lat.	long.	;	
pt.7: lat	long	pt.8: lat.	long.	;	etc.

4) If hydrostatic testing, total volume of the discharge (gals):

5) Is the discharge intermittent ◉ or seasonal ○ ?
Is discharge ongoing? Y ○ N ◉

c) Expected dates of discharge (mm/dd/yy): start 03/01/2014 end 03/01/2016

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). See Figures 3 and 4

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☐	☒	1	GRAB	2540D	5000	7000		7000	
2. Total Residual Chlorine (TRC)		☒	☐	1	GRAB	4500CL-D	20	ND		ND	
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	GRAB	MA VPH, EPH	100, 250	ND		ND	
4. Cyanide (CN)	57125	☒	☐	1	GRAB	4500CN-CE	5	ND		ND	
5. Benzene (B)	71432	☐	☒	2	GRAB	8260C	2	31		15.6	
6. Toluene (T)	108883	☒	☐	1	GRAB	8260C	2	ND		ND	
7. Ethylbenzene (E)	100414	☒	☐	1	GRAB	8260C	4	ND		ND	
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	GRAB	8260C	2	ND		ND	
9. Total BTEX [2]	n/a	☐	☒	2	GRAB	8260C	NA	31		15.6	
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	GRAB	8260C	10	ND		ND	
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	GRAB	8260C	10	ND		ND	
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	GRAB	8260C	10	ND		ND	

***** Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

[2] BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

[3] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	GRAB	8260C	10	ND		ND	
14. Naphthalene	91203	☒	☐	1	GRAB	8260C	2	ND		ND	
15. Carbon Tetrachloride	56235	☒	☐	1	GRAB	8260C	5	ND		ND	
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	GRAB	8260C	5	ND		ND	
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	GRAB	8260C	5	ND		ND	
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	GRAB	8260C	5	ND		ND	
18a. Total dichlorobenzene		☒	☐	1	GRAB	8260C	NA	ND		ND	
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	GRAB	8260C	5	ND		ND	
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	GRAB	8260C	5	ND		ND	
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	GRAB	8260C	5	ND		ND	
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	GRAB	8260C	5	ND		ND	
23. Methylene Chloride	75092	☒	☐	1	GRAB	8260C	5	ND		ND	
24. Tetrachloroethene (PCE)	127184	☒	☐	1	GRAB	8260C	5	ND		ND	
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	GRAB	8260C	5	ND		ND	
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	GRAB	8260C	5	ND		ND	
27. Trichloroethene (TCE)	79016	☒	☐	1	GRAB	8260C	5	ND		ND	

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	1	GRAB	8260C	5	ND		ND	
29. Acetone	67641	☒	☐	1	GRAB	8260C	50	ND		ND	
30. 1,4 Dioxane	123911	☒	☐	1	GRAB	8260C-SIM	5	ND		ND	
31. Total Phenols	108952	☒	☐	1	GRAB	420.1	5	ND		ND	
32. Pentachlorophenol (PCP)	87865	☒	☐	1	GRAB	8270D	5	ND		ND	
33. Total Phthalates (Phthalate esters) [4]		☒	☐	1	GRAB	8270D	NA	ND		ND	
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	GRAB	8270D	5	ND		ND	
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB			ND		ND	
a. Benzo(a) Anthracene	56553	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
b. Benzo(a) Pyrene	50328	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
c. Benzo(b)Fluoranthene	205992	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
d. Benzo(k)Fluoranthene	207089	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
e. Chrysene	21801	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB			ND		ND	

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
h. Acenaphthene	83329	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
i. Acenaphthylene	208968	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
j. Anthracene	120127	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
k. Benzo(ghi) Perylene	191242	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
l. Fluoranthene	206440	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
m. Fluorene	86737	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
n. Naphthalene	91203	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
o. Phenanthrene	85018	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
p. Pyrene	129000	☒	☐	1	GRAB	8270D-SIM	0.1	ND		ND	
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	GRAB	608	0.5	ND		ND	
38. Chloride	16887006	☐	☒	3	GRAB	300.0	100	13,800,000		9,201,000	
39. Antimony	7440360	☒	☐	1	GRAB	6020	0.5	ND		ND	
40. Arsenic	7440382	☐	☒	1	GRAB	6020	1	10.15		10.15	
41. Cadmium	7440439	☒	☐	1	GRAB	6020	0.2	ND		ND	
42. Chromium III (trivalent)	16065831	☒	☐	1	GRAB	6020	1	ND		ND	
43. Chromium VI (hexavalent)	18540299	☒	☐	1	GRAB	3500CR-D	10	ND		ND	
44. Copper	7440508	☒	☐	1	GRAB	6020	0.5	ND		ND	
45. Lead	7439921	☒	☐	1	GRAB	6020	0.2	ND		ND	
46. Mercury	7439976	☒	☐	1	GRAB	245.1	0.2	ND		ND	
47. Nickel	7440020	☒	☐	1	GRAB	6020	0.2	ND		ND	
48. Selenium	7782492	☒	☐	3	GRAB	1632A	2	ND		ND	
49. Silver	7440224	☒	☐	1	GRAB	6020	0.2	ND		ND	
50. Zinc	7440666	☒	☐	1	GRAB	6020	5	ND		ND	
51. Iron	7439896	☒	☐	1	GRAB	200.7	50	ND		ND	
Other (describe):		☐	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○	If yes, which metals? Arsenic
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: Arsenic DF: 54.63 Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ○ N ◉ If Y, list which metals:

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

See Attached Figure 4

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☐
	Chlorination ☐	De-chlorination ☐	Other (please describe):	Additional Pretreatment as necessary to meet NPDES RGP Discharge Criteria.		

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 50 gpm Maximum flow rate of treatment system 150 gpm
Design flow rate of treatment system NA gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

NA

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☐	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:
Effluent will be discharged to a private (owned by Harvard Business School) storm drain & outfall located near the site which discharges into the lower Charles River.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 17.7 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ◉ N ○ If yes, for which pollutant(s)?
DDT, Dissolved Oxygen, Oil and Grease, PCBs, pH
Is there a final TMDL? Y ○ N ◉ If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ◉ B ○ C ○ D ○ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ○

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ○ 2 ◉ 3 ○

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

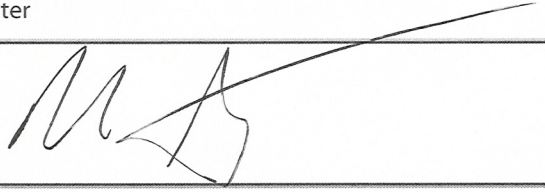
7. Supplemental information.

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

See Attachments

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	Chao Center
Operator signature:	
Printed Name &Title:	Nick Starosky Superintendent
Date:	1/23/19

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	Chao Center
Owner Signature:	Paul Dietel
Printed Name &Title:	Paul Dietel, Director of Capital Programs
Date:	1/29/14

APPENDIX B

Best Management Practices Plan (BMPP)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDIATION GENERAL PERMIT
TEMPORARY CONSTRUCTION DEWATERING
CHAO CENTER
HARVARD BUSINESS SCHOOL
ALLSTON, MASSACHUSETTS

Best Management Practices Plan

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering planned to occur during the construction of the proposed Chao Center located at Harvard Business School Campus in Allston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

Construction dewatering will be conducted using a combination of drainage ditches and sumps located inside the excavation. The treatment system will be designed by the Contractor. Prior to discharge, collected water will likely be routed through a sedimentation tank and bag filters to remove suspended solids and un-dissolved chemical constituents. Supplemental pretreatment may be required to meet discharge criteria as shown on the Proposed Treatment System Schematic included in Figure 3. Construction dewatering under this RGP NOI will include piping and discharging to privately-owned storm drains located near the site. The storm drains travel east and discharge directly into the Charles River.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted by the Contractor at the treated effluent as required by the RGP. This includes chemical testing required within the first month of discharging, and the monthly testing to be conducted through the end of the scheduled discharge.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing and recording daily flow rates and discharge quantities, and verifying the flow path of the discharged effluent.

The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the “system design flow” by regularly monitoring flow and adjusting the amount of construction dewatering as needed.

Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations for the term of this permit. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. Regular maintenance will include checking the condition of the treatment system equipment such as the

fractionization tanks, filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues or unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Operator.

Miscellaneous Items

It is anticipated that the excavation support system, erosion control measures, and the nature of the site and surrounding infrastructure will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control.

Site security for the treatment system will be covered within the overall site security plan. .

No adverse affects of designated water uses of surrounding surface water bodies is anticipated. The Charles River is the nearest surface water body to the site located approximately 0.25 miles from the construction activities on site. Dewatering effluent will be pumped to a sedimentation tank and bag filter, prior to discharge to the storm drains.

Management of Treatment System Materials

Groundwater at the site total arsenic below the applicable MCP RCGW-2 criteria but above the NPDES RGP criteria. However, total arsenic is below the effluent limit when the dilution factor for discharge to the Charles River is applied. Dewatering effluent will be pumped directly to the treatment system from the excavation with use of hoses and sumps to minimize handling. The contractor will establish staging areas on the site for any equipment or materials storage which may be possible sources of pollution away from any dewatering activities.

Sediment from the fractionalization tank used in the treatment system will be characterized and disposed of as soil at an appropriate receiving facility in accordance with applicable laws and regulations. If used, GAC and/or ion exchange resin may be recycled and/or removed from the site to an appropriate receiving facility. Bag filters, if used, will be placed in drums and manifested for off-site disposal.

APPENDIX C

Endangered Species Act Documentation

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

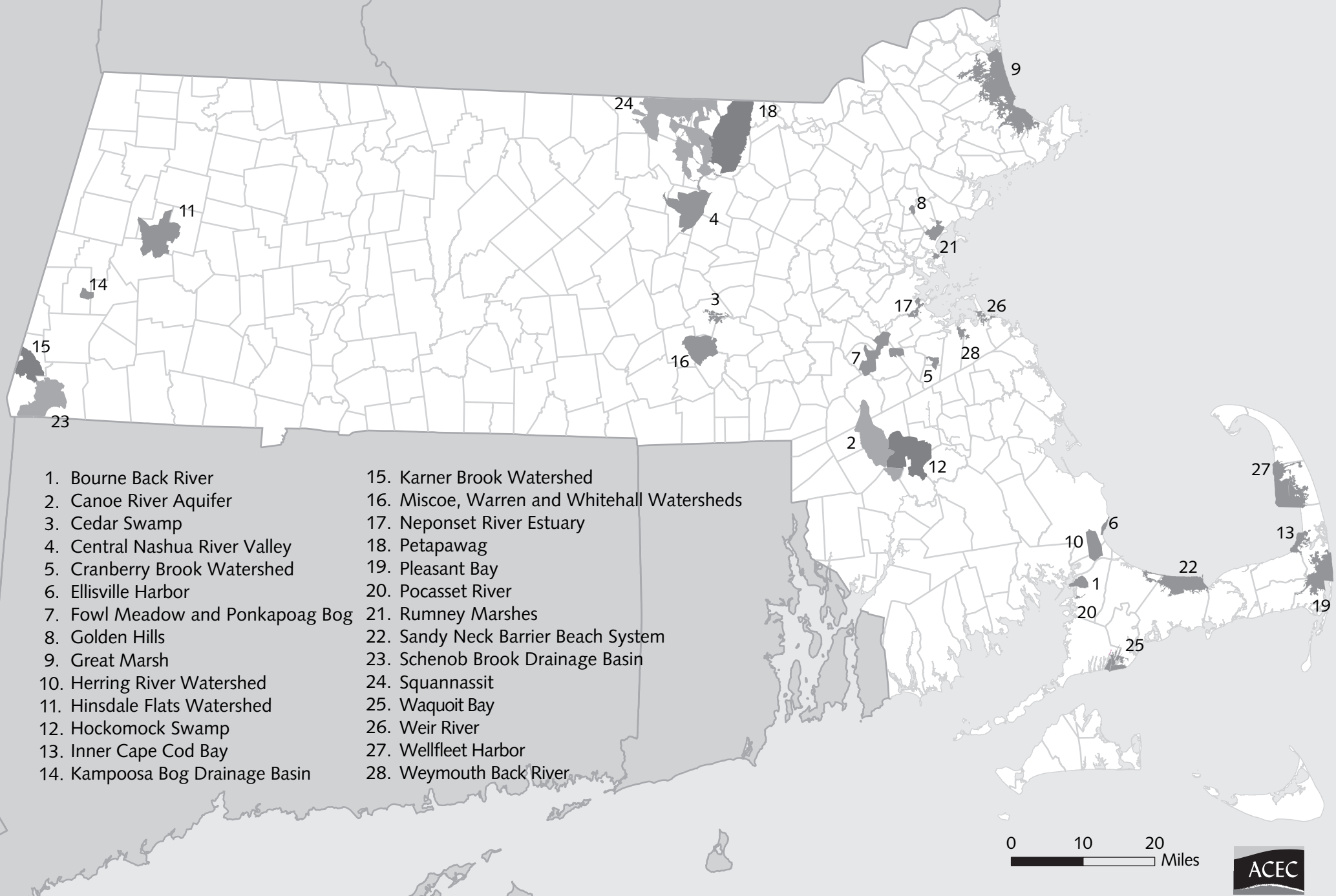
ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

Towns with ACECs within their Boundaries — November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

.

Massachusetts Areas of Critical Environmental Concern (ACECs)



FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

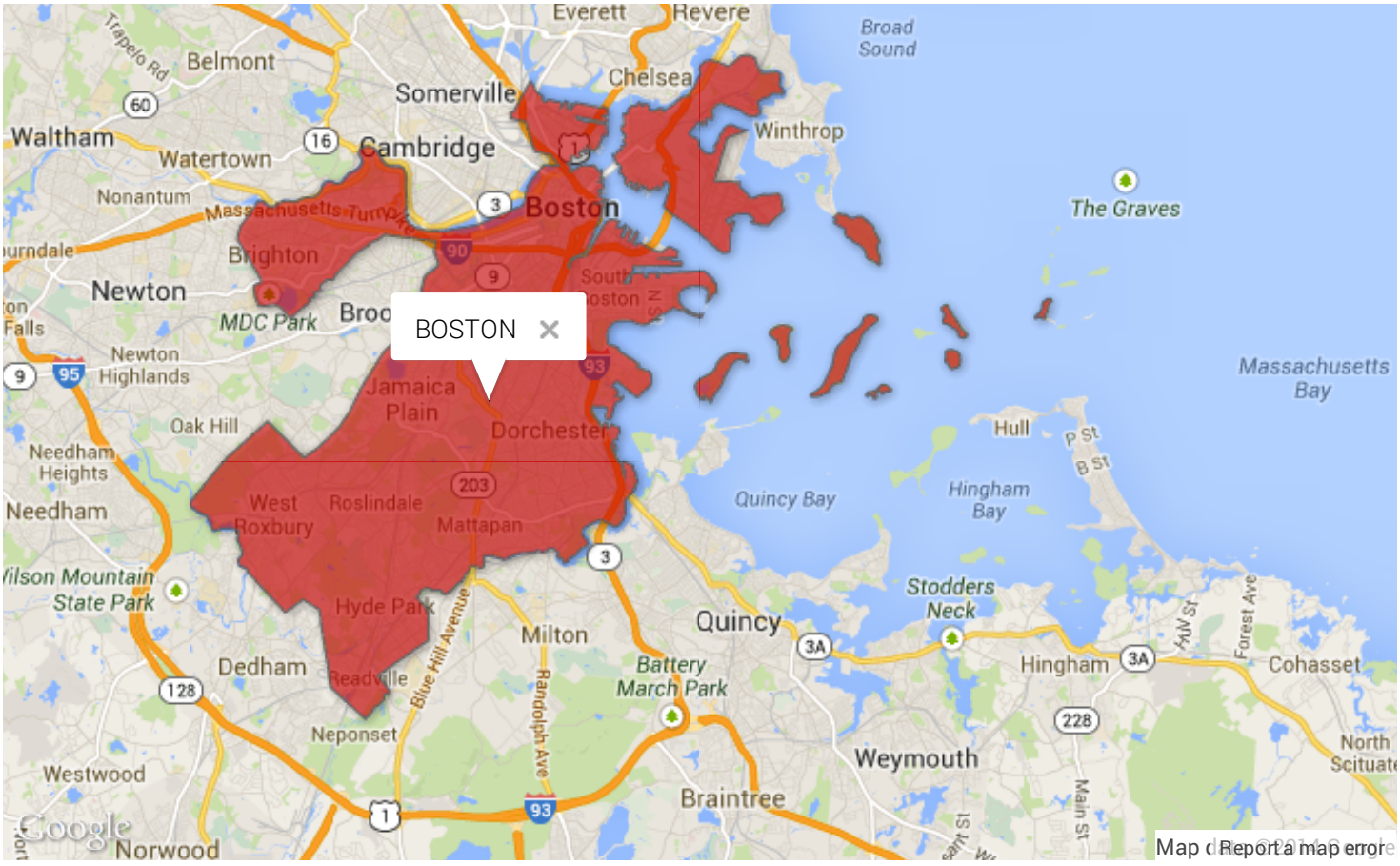
-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Revised 10/7/2011

The Natural Heritage & Endangered Species Program maintains a list of all documented MESA-listed species observations in the Commonwealth. Please select a town if you would like to see a table showing which listed species have been observed in that town. The selected town will also be highlighted on the map. Alternatively you can specify either the Common Name or Scientific Name of a species to see it's distribution on the map and table showing the towns it has been observed in. Clicking on a column header in the table will sort the column. Clicking again on the same column heading will reverse the sort order.

The Town List and Species Viewer will be updated at regular intervals as new data is accepted and entered into the NHESP database.

Town: BOSTON or Species (Common Name): or Species (Scientific Name):



Showing 1 to 46 of 46 entries Search:

First Previous 1 Next Last

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC	2001
BOSTON	Bird	Accipiter striatus	Sharp-shinned Hawk	SC	1898
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E	1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	2011

BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T	1993
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E	Historic
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T	Historic
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T	1877
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T	1878
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E	1993
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T	1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E	Historic
BOSTON	Bird	Charadrius melodus	Piping Plover	T	2011
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC	1910
BOSTON	Beetle	Cicindela purpurea	Cow Path Tiger Beetle	SC	1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T	1927
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T	1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T	1885
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	E	2010
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T	2000
BOSTON	Bird	Gavia immer	Common Loon	SC	1824
BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E	1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1933
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC	1841
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T	1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E	1896
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis	E	1934
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E	Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	1908
BOSTON	Bird	Pooecetes gramineus	Vesper Sparrow	T	1985
BOSTON	Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC	1988
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E	1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T	1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T	Historic
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T	1932
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T	1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC	2001
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC	2009
BOSTON	Bird	Sterna hirundo	Common Tern	SC	2012
BOSTON	Bird	Sternula antillarum	Least Tern	SC	2012
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC	1909
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC	1939
BOSTON	Bird	Tyto alba	Barn Owl	SC	1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E	Historic
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T	1909

Show 50 ▼ **entries**

Hide Additional Info

Status

- E = Endangered
- T = Threatened
- SC = Special Concern

Most Recent Observation

This field represents the most recent observation of that species in a town. However, because they are rare, many MESA-listed species are difficult to detect even when they are present. Natural Heritage does not have the resources to be able to conduct methodical species surveys in each town on a regular basis. Therefore, the fact that the 'Most Recent Observation' recorded for a species may be several years old should not be interpreted as meaning that the species no longer occurs in a town. However, Natural Heritage regards records older than twenty-five years historic.

For more information about a particular species, view the list of Natural Heritage Fact Sheets.

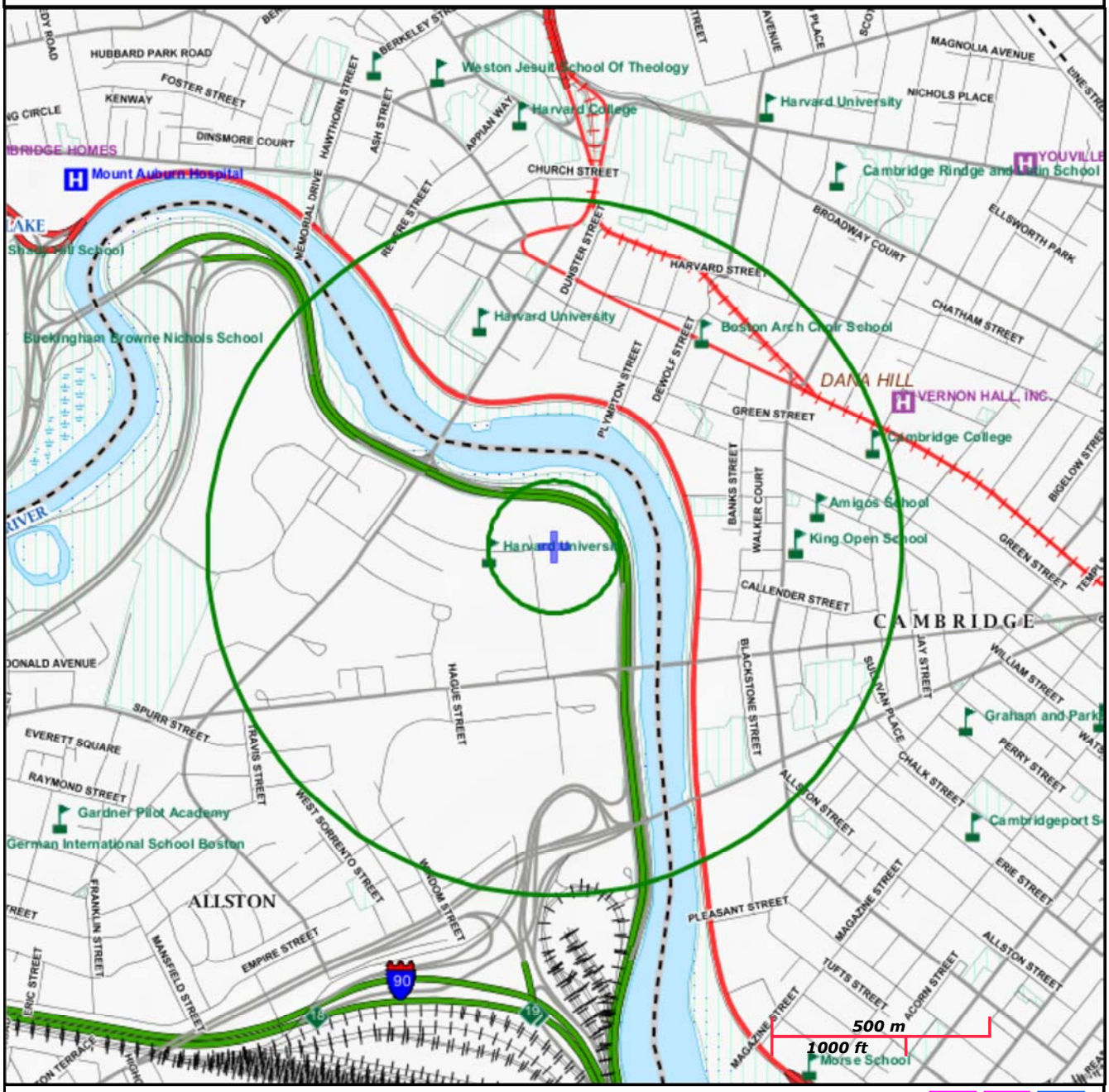
MassDEP - Bureau of Waste Site Cleanup

MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Information:
THE CHAO CENTER
HARVARD BUSINESS SCHOOL BOSTON, MA
NAD83 UTM Meters:
4692671mN , 325437mE (Zone: 19)
January 21, 2014

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately repsponsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg.,Non-Com.

APPENDIX D

National Register of Historic Places and Massachusetts Historical Commission Documentation

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

Massachusetts Cultural Resource Information System

MACRIS

Scanned forms and photos now available for selected towns!

The Massachusetts Cultural Resource Information System (MACRIS) allows you to search the Massachusetts Historical Commission database for information on historic properties and areas in the Commonwealth.

Users of the database should keep in mind that it does not include information on all historic properties and areas in Massachusetts, nor does it reflect all the information on file on historic properties and areas at the Massachusetts Historical Commission.

Click here to begin your search of the MACRIS database.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Allston; Street Name: East; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Allston; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
BOS.CA	Charles River Basin Historic District		Boston	
BOS.JL	Harvard Business School		Boston	
BOS.JM	Saint Anthony's Area		Boston	
BOS.KM	Hano Street Area		Boston	
BOS.KN	Harvard Avenue Historic District		Boston	
BOS.KP	Adamson Street, 1-87		Boston	
BOS.KQ	Aldie Street, 1-75		Boston	
BOS.KS	Ashford Street, 5-69		Boston	
BOS.kt	Athol Street, 4-71		Boston	
BOS.LB	Franklin Street, 51-168		Boston	
BOS.LC	Gardner Street, 4-98		Boston	
BOS.LF	Holton Street, 7-60 and Everett Street, 205		Boston	
BOS.LQ	Raymond Street, 1-98		Boston	
BOS.LU	Westford Street, 3-10		Boston	
BOS.SG	Allston Congregational Church		Boston	
BOS.VH	St. Anthony of Padua Roman Catholic Church Complex		Boston	
BOS.YK	Charles River Reservation Parkways		Boston	
BOS.ZQ	Charles River Reservation Speedway - Upper Basin		Boston	
BOS.AAC	Charles River Reservation Speedway - Upper Basin		Boston	
BOS.8073		8-10 Adamson St	Boston	1846
BOS.8074		12-14 Adamson St	Boston	1846
BOS.8075		16-18 Adamson St	Boston	1846
BOS.8072		72 Adamson St	Boston	
BOS.8079	Rice, Jennie Double House	22-24 Aldie St	Boston	1895
BOS.8076		42-44 Aldie St	Boston	1895

Inv. No.	Property Name	Street	Town	Year
BOS.8077		50 Aldie St	Boston	1895
BOS.8078		62 Aldie St	Boston	1895
BOS.8392	Spinney, David F. Two-Family House	73-75 Aldie St	Boston	1895
BOS.8085		24 Ashford St	Boston	
BOS.8086		26 Ashford St	Boston	
BOS.8087		28 Ashford St	Boston	
BOS.8089	Russell, Fred A. House	44 Ashford St	Boston	1899
BOS.8088		53-55 Ashford St	Boston	1909
BOS.8090	Gage, Roscoe W. House	65 Ashford St	Boston	1892
BOS.15429	Electric Storage Battery Co. - Whitehall Co. Bldg	120 Ashford St	Boston	1925
BOS.8093	Cushing, S. B. Double House	15-17 Athol St	Boston	1875
BOS.8091		27 Athol St	Boston	
BOS.8390	Davenport, Samuel N. House	33 Athol St	Boston	1870
BOS.8391	Davenport, Samuel N. House	35 Athol St	Boston	1870
BOS.8092		46 Athol St	Boston	
BOS.8389	Cose House	69-71 Athol St	Boston	1895
BOS.8393	Davenport, John F. House	70 Athol St	Boston	1895
BOS.9550	Claflin, Sleeper and Rich Halls Courtyard	275 Babcock St	Boston	1965
BOS.15427	Boston Buick Company Garage	278 Babcock St	Boston	1919
BOS.15428	Pittsburgh Plate Glass Company Glass Warehouse	300-316 Babcock St	Boston	1926
BOS.8108	Roddy Hall	58 Birmingham Pkwy	Boston	1898
BOS.9333	Anderson, Larz Bridge	Boylston St	Boston	1915
BOS.9480	Brighton Avenue Streetlamps	Brighton Ave	Boston	1995
BOS.13220	Lincoln Block	101 Brighton Ave	Boston	1902
BOS.13221	Lincoln Block	103-109 Brighton Ave	Boston	1902
BOS.13222	Lincoln Block	113 Brighton Ave	Boston	1902
BOS.13224	Allston Auto Exchange - Allston Auto Body Repairs	116-118 Brighton Ave	Boston	1925
BOS.13223		117-125 Brighton Ave	Boston	1914
BOS.13225	Allston Garage	122-124 Brighton Ave	Boston	1914
BOS.13226		127-129 Brighton Ave	Boston	1915
BOS.13227		128 Brighton Ave	Boston	1980
BOS.8742	Frost, E. Willard Commercial Block	130-140 Brighton Ave	Boston	1913
BOS.13228		131-137 Brighton Ave	Boston	1915
BOS.13229		139-143 Brighton Ave	Boston	1913
BOS.8743	Prindiville Building	143-155 Brighton Ave	Boston	1913
BOS.13230	Parkvale Garage	154-162 Brighton Ave	Boston	1920

Inv. No.	Property Name	Street	Town	Year
BOS.13231		164-174 Brighton Ave	Boston	1920
BOS.9327	B. U. Bridge - Cottage Farm Bridge	Brookline St	Boston	1927
BOS.15426	Noyes Buick Company Service Station	25 Buick St	Boston	1928
BOS.13213		Cambridge St	Boston	1965
BOS.8111	Allen Building	334-354 Cambridge St	Boston	1895
BOS.13211		358-362 Cambridge St	Boston	1950
BOS.13212		372 Cambridge St	Boston	1935
BOS.8113	Chester, W. R. Block	373-391 Cambridge St	Boston	1876
BOS.8744		382-386 Cambridge St	Boston	1911
BOS.8745	English, John House	390 Cambridge St	Boston	1870
BOS.9332	Weeks, John Wingate Foot Bridge	Charles River	Boston	1927
BOS.8123	Williams, Peter House	67 Chester St	Boston	1896
BOS.9549	Boston University School of Law Courtyard	765 Commonwealth Ave	Boston	1965
BOS.15425	Boston University School of Law	765 Commonwealth Ave	Boston	1962
BOS.15424	Boston University Law Library	767 Commonwealth Ave	Boston	1964
BOS.9548	Boston University - Mugar Library Courtyard	771 Commonwealth Ave	Boston	1965
BOS.15423	Boston University - Mugar Memorial Library	771 Commonwealth Ave	Boston	1966
BOS.15422	Boston University - Sherman, George Student Union	775 Commonwealth Ave	Boston	1963
BOS.15421	Shell Oil Company Building	785 Commonwealth Ave	Boston	1931
BOS.8069	Noyes, H. K. Buick Company	855-861 Commonwealth Ave	Boston	1920
BOS.15420	Rand-Avery Supply Company - Pinkham Press Building	871 Commonwealth Ave	Boston	1924
BOS.15419	Youth's Companion Printing Plant	881 Commonwealth Ave	Boston	1915
BOS.8068	Commonwealth Armory	925 Commonwealth Ave	Boston	1914
BOS.15418	Holland System Motor Company Building	949 Commonwealth Ave	Boston	1916
BOS.15417	New England Velie Auto Company Building	983-985 Commonwealth Ave	Boston	1919
BOS.15416	Ford Auto Showroom and Service Station	1019-1023 Commonwealth Ave	Boston	1917
BOS.15415		1106-1110 Commonwealth Ave	Boston	1915
BOS.8143		19 Everett St	Boston	1840
BOS.8234		205 Everett St	Boston	
BOS.8385	Wright, Jonathan B. - Hammond, Leander House	233-235 Everett St	Boston	1830
BOS.13214		4-12 Farrington Ave	Boston	1912
BOS.8746	Longfellow Building	4-8 Franklin St	Boston	1880
BOS.8154	Allston Hall Block	10-14 Franklin St	Boston	1890
BOS.8112	Allston Depot	15 Franklin St	Boston	1887
BOS.8159		69 Franklin St	Boston	
BOS.8160	Hill, George A. Row House	73 Franklin St	Boston	1887

Inv. No.	Property Name	Street	Town	Year
BOS.8155		74-76 Franklin St	Boston	
BOS.8161	Hill, George A. Row House	75 Franklin St	Boston	1887
BOS.8162	Hill, George A. Row House	77 Franklin St	Boston	1887
BOS.8163	Hill, George A. Row House	79 Franklin St	Boston	1887
BOS.8164	Hill, George A. Row House	81 Franklin St	Boston	1887
BOS.8156	Tucker, Moses D. Worker Housing	122 Franklin St	Boston	
BOS.8157	Tucker, Moses D. Worker Housing	124 Franklin St	Boston	
BOS.8158	Tucker, Moses D. Worker Housing	126 Franklin St	Boston	
BOS.8165	Tucker, Moses D. House	134 Franklin St	Boston	1875
BOS.8166	Mead, John H. Row House	150-152 Franklin St	Boston	1889
BOS.8168	Mead, John H. Row House	154-156 Franklin St	Boston	1889
BOS.8170	Mead, John H. Row House	158-160 Franklin St	Boston	1889
BOS.8172	Mead, John H. Row House	162-164 Franklin St	Boston	1889
BOS.8174	Mead, John H. Row House	166-168 Franklin St	Boston	1889
BOS.8184	Braves Baseball Field Office and Entrance Gate	10-20 Gaffney St	Boston	1915
BOS.8747	Jenkins Apartment	4-8 Gardner St	Boston	1912
BOS.13215		9 Gardner St	Boston	1913
BOS.8180	Whitney, Rev. Frederic Augustus House	12 Gardner St	Boston	1850
BOS.13216		15 Gardner St	Boston	1915
BOS.8181	Winter, Royal Double House	38-40 Gardner St	Boston	1881
BOS.8178		41 Gardner St	Boston	
BOS.8179		53 Gardner St	Boston	
BOS.8176		65 Gardner St	Boston	
BOS.8177		71 Gardner St	Boston	
BOS.8182	Ivanhoe Court Apartments	72 Gardner St	Boston	1905
BOS.8183	Norton, Charles W. House	73 Gardner St	Boston	1885
BOS.13217	Ideal Garage	6 Glenville Terr	Boston	1914
BOS.13218	Edison Company Garage	9 Glenville Terr	Boston	1920
BOS.13219	Glenville Garage	10 Glenville Terr	Boston	1918
BOS.8191	Hano, Samuel Company Worker Housing	1-3 Hano St	Boston	1885
BOS.8206	Hano, Samuel Company Worker Housing	2-4 Hano St	Boston	1885
BOS.8192	Hano, Samuel Company Worker Housing	5-7 Hano St	Boston	1885
BOS.8207	Hano, Samuel Company Worker Housing	6-8 Hano St	Boston	1885
BOS.8193	Hano, Samuel Company Worker Housing	9-11 Hano St	Boston	1885
BOS.8194	Hano, Samuel Company Worker Housing	13-15 Hano St	Boston	1885
BOS.8208	Hano, Samuel Company Worker Housing	14-16 Hano St	Boston	1885
BOS.8195	Hano, Samuel Company Worker Housing	17-19 Hano St	Boston	1885
BOS.8209	Hano, Samuel Company Worker Housing	18-20 Hano St	Boston	1885

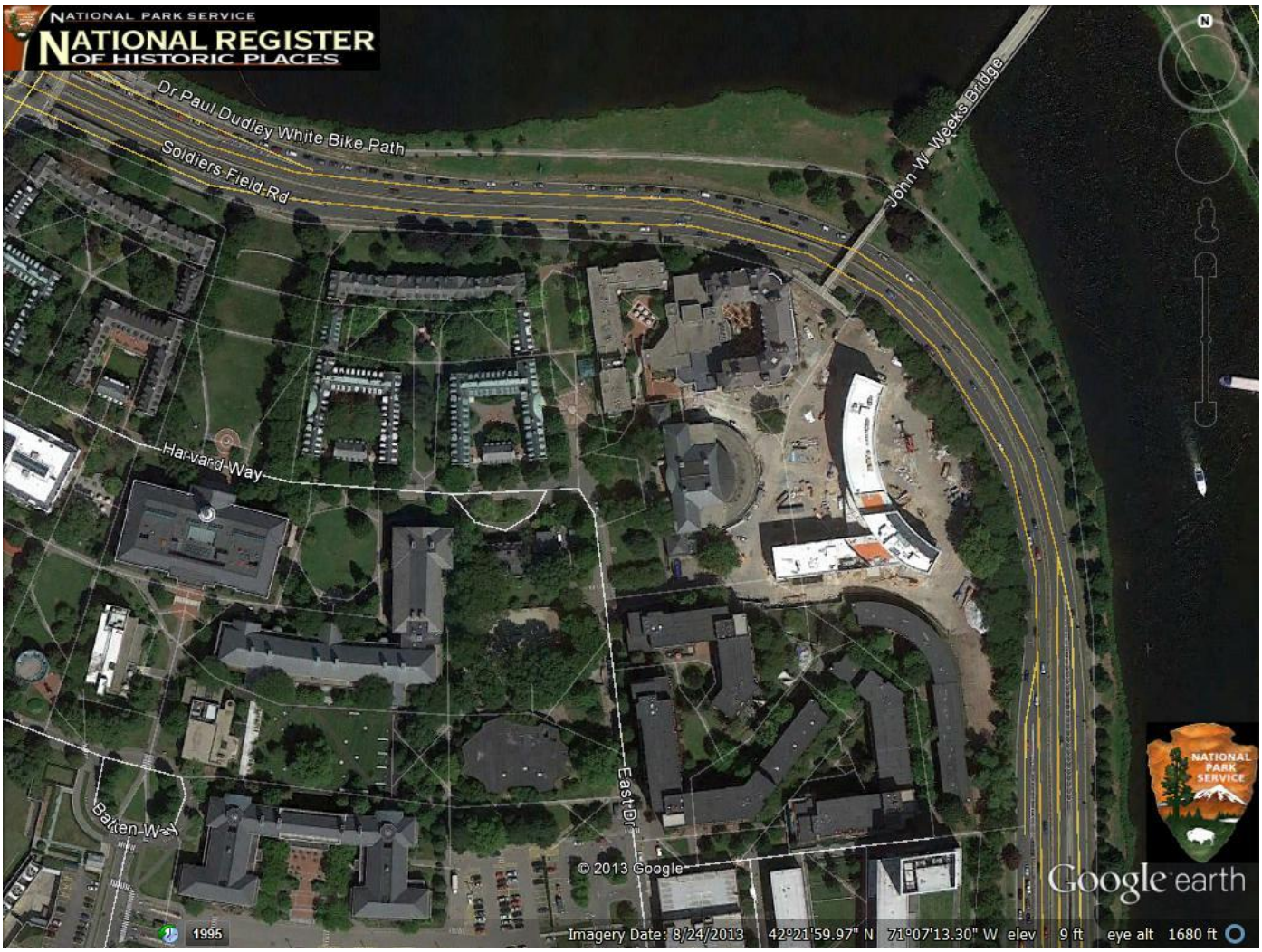
Inv. No.	Property Name	Street	Town	Year
BOS.8196	Hano, Samuel Company Worker Housing	21-23 Hano St	Boston	1885
BOS.8210	Hano, Samuel Company Worker Housing	22-24 Hano St	Boston	1885
BOS.8197	Hano, Samuel Company Worker Housing	25-27 Hano St	Boston	1885
BOS.8211	Hano, Samuel Company Worker Housing	26-28 Hano St	Boston	1885
BOS.8198	Hano, Samuel Company Worker Housing	29-31 Hano St	Boston	1885
BOS.8212	Hano, Samuel Company Worker Housing	30-32 Hano St	Boston	1885
BOS.8199	Hano, Samuel Company Worker Housing	33-35 Hano St	Boston	1885
BOS.8213	Hano, Samuel Company Worker Housing	34-36 Hano St	Boston	1885
BOS.8200	Hano, Samuel Company Worker Housing	37-39 Hano St	Boston	1885
BOS.8214	Hano, Samuel Company Worker Housing	38-40 Hano St	Boston	1885
BOS.8201	Hano, Samuel Company Worker Housing	41-43 Hano St	Boston	1885
BOS.8215	Hano, Samuel Company Worker Housing	42-44 Hano St	Boston	1885
BOS.8202	Hano, Samuel Company Worker Housing	45-47 Hano St	Boston	1885
BOS.8216	Hano, Samuel Company Worker Housing	46-48 Hano St	Boston	1885
BOS.8203	Hano, Samuel Company Worker Housing	49-51 Hano St	Boston	1885
BOS.8217	Hano, Samuel Company Worker Housing	50-52 Hano St	Boston	1885
BOS.8204	Hano, Samuel Company Worker Housing	53-55 Hano St	Boston	1885
BOS.8218	Hano, Samuel Company Worker Housing	54-56 Hano St	Boston	1885
BOS.8205	Hano, Samuel Company Worker Housing	57-59 Hano St	Boston	1885
BOS.8219	Hano, Samuel Company Worker Housing	58-60 Hano St	Boston	1885
BOS.8220	Hano, Samuel Company Worker Housing	62-64 Hano St	Boston	1885
BOS.8221	Hano, Samuel Company Worker Housing	66-68 Hano St	Boston	1885
BOS.8222	Hano, Samuel Company Worker Housing	70-72 Hano St	Boston	1885
BOS.15414	Braves Baseball Field - Pavilion A	32 Harry Agganis Way	Boston	1915
BOS.9481	Harvard Avenue Road Network	Harvard Ave	Boston	
BOS.8748	Wilson Block	4-8 Harvard Ave	Boston	1908
BOS.8749		11-17 Harvard Ave	Boston	1918
BOS.8223	Harvard Avenue Fire Station	16 Harvard Ave	Boston	1891
BOS.8750		20-24 Harvard Ave	Boston	1910
BOS.8751		25-27 Harvard Ave	Boston	1965
BOS.13232		31 Harvard Ave	Boston	1950
BOS.8752		32-34 Harvard Ave	Boston	1928
BOS.8753	U. S. Post Office - Allston Branch	39 Harvard Ave	Boston	1975
BOS.8754		44-58 Harvard Ave	Boston	1912
BOS.8224	Whitehead, R. F. Block	51-63 Harvard Ave	Boston	1913
BOS.8755	Allston Methodist Episcopal Church	62 Harvard Ave	Boston	1877
BOS.13233	Shorey - Bassett House	66-68 Harvard Ave	Boston	1883
BOS.8756		67-73 Harvard Ave	Boston	1905

Inv. No.	Property Name	Street	Town	Year
BOS.8757	Bacon and Barret Apartment	74-84 Harvard Ave	Boston	1912
BOS.8758		75-87 Harvard Ave	Boston	1920
BOS.8772		5 Harvard Terr	Boston	1910
BOS.8773		7 Harvard Terr	Boston	1910
BOS.8771		8-16 Harvard Terr	Boston	1912
BOS.8774		9 Harvard Terr	Boston	1910
BOS.8775		11 Harvard Terr	Boston	1910
BOS.8776		15 Harvard Terr	Boston	1910
BOS.8777		17 Harvard Terr	Boston	1910
BOS.8232	Ganzheimer, A. Double House	20-22 Highgate St	Boston	1880
BOS.8235	Stinson, John D. House	8 Holton St	Boston	1889
BOS.8236	Stinson, John D. Barn	8R Holton St	Boston	1889
BOS.8233		12 Holton St	Boston	1890
BOS.8237	Davenport, Jonathan House	21 Holton St	Boston	1875
BOS.8238	Saint Anthony of Padua Roman Catholic Church	37 Holton St	Boston	1894
BOS.8388	Saint Anthony of Padua Roman Catholic Rectory	43 Holton St	Boston	1896
BOS.8387	Saint Anthony of Padua Roman Catholic School	57 Holton St	Boston	1915
BOS.8386	Saint Anthony of Padua Roman Catholic Convent	69 Holton St	Boston	1930
BOS.9608	Charles River Reservation - Leo Birmingham Parkway	Leo Birmingham Pkwy	Boston	1936
BOS.9609	Charles River Reservation - Birmingham Pkwy Marker	Leo Birmingham Pkwy	Boston	1920
BOS.13241	Allen Building	1 Linden St	Boston	1895
BOS.13242	Allen Building	3 Linden St	Boston	1895
BOS.13243	Allen Building	5 Linden St	Boston	1895
BOS.13244	Allen Building	7 Linden St	Boston	1895
BOS.13245	Allen Building	9 Linden St	Boston	1895
BOS.13236		11 Linden St	Boston	1897
BOS.13237		11A Linden St	Boston	1897
BOS.13238		15 Linden St	Boston	1897
BOS.13239		15A Linden St	Boston	1897
BOS.8065	Storrow, James J. School	20 Lothrop St	Boston	1926
BOS.9607	Charles River Reservation - Nonantum Road	Nonantum Rd	Boston	1910
BOS.8375	Harvard University - Blodgett Pool	North Beacon St	Boston	1978
BOS.9313	Harvard University Athletic Facility Fence	North Beacon St	Boston	1897
BOS.9610	Charles River Reservation - North Beacon Street	North Beacon St	Boston	1920
BOS.9611	North Beacon Street Bridge over Charles River	North Beacon St	Boston	1920
BOS.8283		19 North Beacon St	Boston	1810

Inv. No.	Property Name	Street	Town	Year
BOS.8286	Harvard Stadium	60 North Harvard St	Boston	1903
BOS.8285	Harvard University - Carey Cage	65 North Harvard St	Boston	1897
BOS.8067	Hill Memorial Baptist Church	279 North Harvard St	Boston	1903
BOS.14293	Allston Congregational Church Parsonage	31-41 Quint Ave	Boston	1891
BOS.8297	Allston Congregational Church	41 Quint Ave	Boston	1891
BOS.8298		31 Raymond St	Boston	
BOS.8299		33 Raymond St	Boston	
BOS.8381	Rice, Edmund House	34 Raymond St	Boston	1870
BOS.8303	McDermott, Patrick Double House	43-45 Raymond St	Boston	1875
BOS.8300		80-82 Raymond St	Boston	
BOS.8301		82-84 Raymond St	Boston	
BOS.8302		86-88 Raymond St	Boston	
BOS.9330	River Street Bridge	River St	Boston	1926
BOS.8305	Vanerin, John House	57-59 Royal St	Boston	1905
BOS.8306	Sanford, H. I. House	9 Sawyer Terr	Boston	1914
BOS.8310	Sinclair, Thomas House	1 Sinclair Rd	Boston	1835
BOS.8311	Tracy, Jedediah House	2 Sinclair Rd	Boston	1833
BOS.9314	Harvard University Athletic Facility Fence	Solders Field Rd	Boston	1897
BOS.9334	Eliot Bridge	Soldier's Field Rd	Boston	1950
BOS.9335	Soldier's Field Road	Soldier's Field Rd	Boston	1895
BOS.8350	Harvard Business School - Kresge Hall	Soldiers Field Rd	Boston	1953
BOS.8351	Harvard Business School - Teele Hall	Soldiers Field Rd	Boston	1968
BOS.8352	Harvard Business School - Burden Hall	Soldiers Field Rd	Boston	1969
BOS.8353	Harvard Business School - Cumnock Hall	Soldiers Field Rd	Boston	1969
BOS.8354	Soldiers Field Park Apartments	Soldiers Field Rd	Boston	1974
BOS.8355	Harvard Business School - Shadd Gymnasium	Soldiers Field Rd	Boston	1990
BOS.8356	Harvard Business School Chapel	Soldiers Field Rd	Boston	1990
BOS.8357	Harvard Business School Dean's Residence	Soldiers Field Rd	Boston	1929
BOS.8358	Harvard Business School - Humphrey Hall	Soldiers Field Rd	Boston	1926
BOS.8359	Harvard Business School - McCullough Hall	Soldiers Field Rd	Boston	1926
BOS.8360	Harvard Business School - Glass Hall	Soldiers Field Rd	Boston	1926
BOS.8361	Harvard Business School - Mellon Hall	Soldiers Field Rd	Boston	1926
BOS.8362	Harvard Business School - Dillon Hall	Soldiers Field Rd	Boston	1926
BOS.8363	Harvard Business School - Chase Hall	Soldiers Field Rd	Boston	1926
BOS.8364	Harvard Business School Students Club	Soldiers Field Rd	Boston	1926
BOS.8365	Harvard Business School - Aldrich Hall	Soldiers Field Rd	Boston	1953
BOS.8366	Harvard Business School - Baker Library	Soldiers Field Rd	Boston	1927
BOS.8367	Harvard Business School - Hamilton Hall	Soldiers Field Rd	Boston	1926

Inv. No.	Property Name	Street	Town	Year
BOS.8368	Harvard Business School Faculty Club	Soldiers Field Rd	Boston	1926
BOS.8369	Harvard Business School - Gallatin Hall	Soldiers Field Rd	Boston	1926
BOS.8370	Harvard Business School - Fowler Hall	Soldiers Field Rd	Boston	1926
BOS.8371	Harvard Business School - Morgan Hall	Soldiers Field Rd	Boston	1927
BOS.8372	Harvard Business School - Loeb Hall	Soldiers Field Rd	Boston	1926
BOS.8373	Harvard Business School - Morris Hall	Soldiers Field Rd	Boston	1926
BOS.8374	Harvard Business School - Sherman Hall	Soldiers Field Rd	Boston	1926
BOS.8376	Harvard University - Briggs Cage	Soldiers Field Rd	Boston	1926
BOS.8377	Harvard University - Dillon Field House	Soldiers Field Rd	Boston	1929
BOS.8378	Harvard University - Dixon, Palmer Tennis Courts	Soldiers Field Rd	Boston	1965
BOS.8379	Harvard University - Bright Hockey Center	Soldiers Field Rd	Boston	1950
BOS.8380	Harvard University Gordon Track and Tennis Center	Soldiers Field Rd	Boston	1950
BOS.9602	Charles River Reservation - Soldiers Field Road	Soldiers Field Rd	Boston	1899
BOS.9603	Soldiers Field Road Planted Median	Soldiers Field Rd	Boston	1920
BOS.9605	Soldiers Field Underpass at Western Avenue	Soldiers Field Rd	Boston	1954
BOS.9606	Soldiers Field Road - North Beacon Street Oval	Soldiers Field Rd	Boston	1958
BOS.8312	Harvard University - Newell Boat House	801-805 Soldiers Field Rd	Boston	1900
BOS.8063	Institute of Contemporary Art	1175 Soldiers Field Rd	Boston	1959
BOS.8064	Charles River Speedway Superintendent's Residence	1420-1440 Soldiers Field Rd	Boston	1899
BOS.9731	Charles River Speedway Courtyard	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15893	Charles River Speedway Headquarters and Stable	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15894	Metropolitan District Commission Police Station	1420-1440 Soldiers Field Rd	Boston	1904
BOS.15895	Charles River Speedway - South Shed	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15896	Charles River Speedway - East Shed	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15897	Charles River Speedway Garage	1420-1440 Soldiers Field Rd	Boston	1940
BOS.15898	Charles River Speedway Maintenance Garage	1420-1440 Soldiers Field Rd	Boston	1940
BOS.9604	Charles River Reservation - Telford Street Bridge	Telford St	Boston	1965
BOS.8066	Barrett, David L. Elementary School	25 Travis St	Boston	1933
BOS.8321	Longefellow, Henry W. House	4 Wadsworth St	Boston	1895
BOS.9331	Western Avenue Bridge	Western Ave	Boston	1924
BOS.8342	Ted's Diner	270 Western Ave	Boston	1953
BOS.8343	Sewall and Day Cordage Company	342 Western Ave	Boston	1885
BOS.8344	Engine House #34	444 Western Ave	Boston	1887
BOS.8345	Stanley Service Station	500 Western Ave	Boston	1938
BOS.8382	Moore, J. Albert - Reid, Maria House	3 Westford St	Boston	1870

Inv. No.	Property Name	Street	Town	Year
BOS.8346		4 Westford St	Boston	1880
BOS.8383	Moore, J. Albert House	7 Westford St	Boston	1870
BOS.8347		8 Westford St	Boston	1880
BOS.8384	Moore, J. Albert House	9 Westford St	Boston	1870
BOS.8348		10 Westford St	Boston	1880
BOS.13240	Wilton, The	7 Wilton St	Boston	1890


NATIONAL PARK SERVICE
NATIONAL REGISTER
OF HISTORIC PLACES
Dr Paul Dudley White Bike Path
Soldiers Field Rd
John W Weeks Bridge
Harvard Way
Batten Way
East Dr
© 2013 Google
Google earth
1995
Imagery Date: 8/24/2013 42°21'59.97" N 71°07'13.30" W elev 9 ft eye alt 1680 ft

APPENDIX E

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L1324034
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Kate Dilawari
Phone:	(617) 886-7458
Project Name:	CHAO CENTER-HARVARD BUSINESS
Project Number:	39291-001
Report Date:	12/04/13

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.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1324034-01	HBS26-OW-112513	Not Specified	11/25/13 09:15
L1324034-02	TB	Not Specified	11/25/13 00:00

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
Project Number:	39291-001	**Report Date:**	12/04/13

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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for 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:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
Project Number:	39291-001	**Report Date:**	12/04/13

Case Narrative (continued)

Sample Receipt

The sample L1324034-01 (HBS26-OW-112513) was field filtered for Dissolved Metals.

Semivolatile Organics

The WG654603-2 LCS recovery, associated with L1324034-01 (HBS26-OW-112513), is below the acceptance criteria for benzidine (7%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

VPH

L1324034-01 (HBS26-OW-112513) has elevated detection limits due to the dilution required by the sample matrix.

EPH

The WG654833-2/-3 LCS/LCSD recoveries, associated with L1324034-01 (HBS26-OW-112513), are outside the acceptance criteria for nonane (C9) (18%/21%) and decane (C10) (26%/28%); however, the target carbon ranges and analytes are within overall method allowances. The results of the original analysis are reported.

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Pesticides

L1324034-01 (HBS26-OW-112513) has elevated detection limits due to the dilution required by the sample matrix.

The surrogate recoveries for L1324034-01 (HBS26-OW-112513) are below the acceptance criteria for 2,4,5,6-tetrachloro-m-xylene and decachlorobiphenyl (both 0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Total Metals

L1324034-01 (HBS26-OW-112513) has elevated detection limits for all elements, with the exception of iron and mercury, due to the dilution required by matrix interferences encountered during analysis.

L1324034-01 (HBS26-OW-112513): The dissolved result is greater than the total result for selenium. The

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
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Case Narrative (continued)

sample containers were verified as being labeled correctly by the laboratory, and aliquots were re-analyzed from each bottle. The total selenium was re-prepped confirming the original results; matrix interference is suspected.

Dissolved Metals

L1324034-01 (HBS26-OW-112513) has elevated detection limits for all elements, with the exception of iron and mercury, due to the dilution required by matrix interferences encountered during analysis.

The WG655374-4 MS recoveries, performed on L1324034-01 (HBS26-OW-112513), are below the acceptance criteria for antimony (10%), arsenic (11%), cadmium (79%), copper (11%) and zinc (79%). A post digestion spike was performed with acceptable recoveries for antimony (93%), arsenic (105%), cadmium (94%), copper (91%) and zinc (86%).

The WG655374-4 MS recoveries, performed on L1324034-01 (HBS26-OW-112513), are below the acceptance criteria for selenium (0%) and silver (10%). A post digestion spike was performed with unacceptable recoveries for selenium (25%) and silver (72%). This has been attributed to sample matrix.

The WG655374-3 Laboratory Duplicate RPD, performed on L1324034-01 (HBS26-OW-112513), is above the acceptance criteria for selenium (32%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

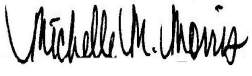
Chromium, Hexavalent

L1324034-01 (HBS26-OW-112513) has an elevated detection limit due to the dilution required by the sample matrix.

Cyanide, Total

The WG654890-4 MS recovery (0%), performed on L1324034-01 (HBS26-OW-112513), is outside the acceptance criteria. This has been attributed to matrix interference.

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:  Michelle M. Morris

Title: Technical Director/Representative Date: 12/04/13

ORGANICS

VOLATILES

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water		
Analytical Method:	1,8260C		
Analytical Date:	12/01/13 19:01		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

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SAMPLE RESULTS

Lab ID: L1324034-01 Date Collected: 11/25/13 09:15

Client ID: HBS26-OW-112513 Date Received: 11/25/13

Sample Location: Not Specified Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

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SAMPLE RESULTS

Lab ID: L1324034-01 Date Collected: 11/25/13 09:15

Client ID: HBS26-OW-112513 Date Received: 11/25/13

Sample Location: Not Specified Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	106		70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water		
Analytical Method:	1,8260C-SIM(M)		
Analytical Date:	12/04/13 09:28		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-02	Date Collected:	11/25/13 00:00
Client ID:	TB	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C		
Analytical Date:	12/01/13 19:34		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID: L1324034-02 Date Collected: 11/25/13 00:00

Client ID: TB Date Received: 11/25/13

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1

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Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID: L1324034-02 Date Collected: 11/25/13 00:00

Client ID: TB Date Received: 11/25/13

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	105		70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-02	Date Collected:	11/25/13 00:00
Client ID:	TB	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C-SIM(M)		
Analytical Date:	12/04/13 08:55		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

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Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/01/13 18:29
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG655279-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/01/13 18:29
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG655279-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/01/13 18:29
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG655279-3					
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	100		70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 12/04/13 08:23
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG656053-3					
1,4-Dioxane	ND		ug/l	3.0	--

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG655279-1 WG655279-2								
Methylene chloride	87		98		70-130	12		20
1,1-Dichloroethane	86		100		70-130	15		20
Chloroform	95		107		70-130	12		20
Carbon tetrachloride	89		104		63-132	16		20
1,2-Dichloropropane	98		110		70-130	12		20
Dibromochloromethane	92		104		63-130	12		20
1,1,2-Trichloroethane	92		102		70-130	10		20
Tetrachloroethene	84		104		70-130	**21**	Q	20
Chlorobenzene	94		106		75-130	12		25
Trichlorofluoromethane	63		81		62-150	**25**	Q	20
1,2-Dichloroethane	96		107		70-130	11		20
1,1,1-Trichloroethane	87		106		67-130	20		20
Bromodichloromethane	98		109		67-130	11		20
trans-1,3-Dichloropropene	96		105		70-130	9		20
cis-1,3-Dichloropropene	101		111		70-130	9		20
1,1-Dichloropropene	85		102		70-130	18		20
Bromoform	87		102		54-136	16		20
1,1,2,2-Tetrachloroethane	89		102		67-130	14		20
Benzene	95		107		70-130	12		25
Toluene	94		104		70-130	10		25
Ethylbenzene	91		104		70-130	13		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG655279-1 WG655279-2								
Chloromethane	90		88		64-130	2		20
Bromomethane	71		73		39-139	3		20
Vinyl chloride	83		98		55-140	17		20
Chloroethane	73		84		55-138	14		20
1,1-Dichloroethene	73		89		61-145	20		25
trans-1,2-Dichloroethene	81		96		70-130	17		20
Trichloroethene	90		105		70-130	15		25
1,2-Dichlorobenzene	94		105		70-130	11		20
1,3-Dichlorobenzene	95		105		70-130	10		20
1,4-Dichlorobenzene	96		105		70-130	9		20
Methyl tert butyl ether	88		97		63-130	10		20
p/m-Xylene	91		105		70-130	14		20
o-Xylene	92		106		70-130	14		20
cis-1,2-Dichloroethene	98		110		70-130	12		20
Dibromomethane	96		103		70-130	7		20
1,4-Dichlorobutane	93		101		70-130	8		20
1,2,3-Trichloropropane	91		104		64-130	13		20
Styrene	92		104		70-130	12		20
Dichlorodifluoromethane	64		76		36-147	17		20
Acetone	95		79		58-148	18		20
Carbon disulfide	78		92		51-130	16		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG655279-1 WG655279-2								
2-Butanone	95		101		63-138	6		20
Vinyl acetate	86		101		70-130	16		20
4-Methyl-2-pentanone	92		103		59-130	11		20
2-Hexanone	85		94		57-130	10		20
Ethyl methacrylate	93		104		70-130	11		20
Acrylonitrile	90		99		70-130	10		20
Bromochloromethane	95		105		70-130	10		20
Tetrahydrofuran	94		94		58-130	0		20
2,2-Dichloropropane	93		108		63-133	15		20
1,2-Dibromoethane	94		102		70-130	8		20
1,3-Dichloropropane	91		101		70-130	10		20
1,1,1,2-Tetrachloroethane	96		111		64-130	14		20
Bromobenzene	95		105		70-130	10		20
n-Butylbenzene	99		108		53-136	9		20
sec-Butylbenzene	94		106		70-130	12		20
tert-Butylbenzene	97		108		70-130	11		20
o-Chlorotoluene	98		108		70-130	10		20
p-Chlorotoluene	98		107		70-130	9		20
1,2-Dibromo-3-chloropropane	89		97		41-144	9		20
Hexachlorobutadiene	105		118		63-130	12		20
Isopropylbenzene	91		105		70-130	14		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG655279-1 WG655279-2								
p-Isopropyltoluene	98		109		70-130	11		20
Naphthalene	87		100		70-130	14		20
n-Propylbenzene	93		105		69-130	12		20
1,2,3-Trichlorobenzene	91		103		70-130	12		20
1,2,4-Trichlorobenzene	95		105		70-130	10		20
1,3,5-Trimethylbenzene	97		109		64-130	12		20
1,2,4-Trimethylbenzene	100		109		70-130	9		20
trans-1,4-Dichloro-2-butene	86		93		70-130	8		20
Ethyl ether	83		92		59-134	10		20
Tert-Butyl Alcohol	94		100		70-130	6		20
Tertiary-Amyl Methyl Ether	96		107		66-130	11		20
1,4-Dioxane	121		115		56-162	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		95		70-130
Toluene-d8	97		98		70-130
4-Bromofluorobenzene	105		105		70-130
Dibromofluoromethane	102		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG656053-1 WG656053-2								
1,4-Dioxane	112		120		70-130	7		25

SEMIVOLATILES

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D	Extraction Date:	11/26/13 09:55
Analytical Date:	11/27/13 10:24		
Analyst:	RC		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID: L1324034-01 Date Collected: 11/25/13 09:15

Client ID: HBS26-OW-112513 Date Received: 11/25/13

Sample Location: Not Specified Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	55		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	79		41-149

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	11/26/13 10:02
Analytical Date:	11/27/13 16:44		
Analyst:	AS		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.20	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	ND		ug/l	0.20	--	1
Phenanthrene	ND		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1
1-Methylnaphthalene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	35		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	79		10-120
4-Terphenyl-d14	78		41-149

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/27/13 10:25
Analyst: AS

Extraction Method: EPA 3510C
Extraction Date: 11/26/13 09:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG654601-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001
Lab Number: L1324034
Report Date: 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/27/13 10:25
Analyst: AS

Extraction Method: EPA 3510C
Extraction Date: 11/26/13 09:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG654601-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	60		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	72		41-149

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 11/27/13 07:58
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 11/26/13 09:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG654603-1					
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Isophorone	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 11/27/13 07:58
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 11/26/13 09:55

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG654603-1					
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	81		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG654601-2 WG654601-3								
Acenaphthene	69		76		37-111	10		40
2-Chloronaphthalene	66		72		40-140	9		40
Fluoranthene	78		85		40-140	9		40
Hexachlorobutadiene	57		59		40-140	3		40
Naphthalene	62		67		40-140	8		40
Benzo(a)anthracene	79		88		40-140	11		40
Benzo(a)pyrene	76		84		40-140	10		40
Benzo(b)fluoranthene	76		82		40-140	8		40
Benzo(k)fluoranthene	91		99		40-140	8		40
Chrysene	76		85		40-140	11		40
Acenaphthylene	70		76		40-140	8		40
Anthracene	72		80		40-140	11		40
Benzo(ghi)perylene	80		85		40-140	6		40
Fluorene	74		83		40-140	11		40
Phenanthrene	75		86		40-140	14		40
Dibenzo(a,h)anthracene	83		87		40-140	5		40
Indeno(1,2,3-cd)pyrene	83		88		40-140	6		40
Pyrene	74		83		26-127	11		40
1-Methylnaphthalene	66		69		40-140	4		40
2-Methylnaphthalene	69		72		40-140	4		40
Pentachlorophenol	76		89		9-103	16		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG654601-2 WG654601-3								
Hexachlorobenzene	66		73		40-140	10		40
Hexachloroethane	61		65		40-140	6		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	42		49		21-120
Phenol-d6	31		33		10-120
Nitrobenzene-d5	62		67		23-120
2-Fluorobiphenyl	64		68		15-120
2,4,6-Tribromophenol	75		84		10-120
4-Terphenyl-d14	77		84		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG654603-2 WG654603-3								
Benzidine	**7**	Q	40		10-75	**139**	Q	30
1,2,4-Trichlorobenzene	69		64		39-98	8		30
Bis(2-chloroethyl)ether	89		82		40-140	8		30
1,2-Dichlorobenzene	73		69		40-140	6		30
1,3-Dichlorobenzene	70		67		40-140	4		30
1,4-Dichlorobenzene	70		67		36-97	4		30
3,3'-Dichlorobenzidine	72		78		40-140	8		30
2,4-Dinitrotoluene	**112**	Q	**104**	Q	24-96	7		30
2,6-Dinitrotoluene	108		101		40-140	7		30
Azobenzene	118		106		40-140	11		30
4-Chlorophenyl phenyl ether	97		89		40-140	9		30
4-Bromophenyl phenyl ether	92		85		40-140	8		30
Bis(2-chloroisopropyl)ether	103		96		40-140	7		30
Bis(2-chloroethoxy)methane	97		91		40-140	6		30
Hexachlorocyclopentadiene	47		50		40-140	6		30
Isophorone	103		98		40-140	5		30
Nitrobenzene	93		87		40-140	7		30
NDPA/DPA	104		95		40-140	9		30
Bis(2-ethylhexyl)phthalate	118		105		40-140	12		30
Butyl benzyl phthalate	116		105		40-140	10		30
Di-n-butylphthalate	112		101		40-140	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG654603-2 WG654603-3								
Di-n-octylphthalate	116		105		40-140	10		30
Diethyl phthalate	107		98		40-140	9		30
Dimethyl phthalate	103		94		40-140	9		30
Aniline	**39**	Q	53		40-140	30		30
4-Chloroaniline	69		81		40-140	16		30
2-Nitroaniline	109		102		52-143	7		30
3-Nitroaniline	72		79		25-145	9		30
4-Nitroaniline	101		92		51-143	9		30
Dibenzofuran	96		91		40-140	5		30
n-Nitrosodimethylamine	58		54		22-74	7		30
2,4,6-Trichlorophenol	99		92		30-130	7		30
p-Chloro-m-cresol	**113**	Q	**104**	Q	23-97	8		30
2-Chlorophenol	90		85		27-123	6		30
2,4-Dichlorophenol	95		88		30-130	8		30
2,4-Dimethylphenol	112		107		30-130	5		30
2-Nitrophenol	92		87		30-130	6		30
4-Nitrophenol	**88**	Q	**86**	Q	10-80	2		30
2,4-Dinitrophenol	92		74		20-130	22		30
4,6-Dinitro-o-cresol	110		97		20-164	13		30
Phenol	47		47		12-110	0		30
2-Methylphenol	90		87		30-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG654603-2 WG654603-3								
3-Methylphenol/4-Methylphenol	87		83		30-130	5		30
2,4,5-Trichlorophenol	103		94		30-130	9		30
Benzoic Acid	42		38		10-164	10		30
Benzyl Alcohol	82		78		26-116	5		30
Carbazole	107		99		55-144	8		30
Pyridine	20		29		10-66	**37**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		59		21-120
Phenol-d6	45		44		10-120
Nitrobenzene-d5	94		89		23-120
2-Fluorobiphenyl	92		84		15-120
2,4,6-Tribromophenol	88		82		10-120
4-Terphenyl-d14	101		92		41-149

PETROLEUM HYDROCARBONS

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	11/27/13 05:02
Analytical Date:	12/03/13 06:31	Cleanup Method1:	EPH-04-1
Analyst:	MW	Cleanup Date1:	12/02/13

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	50		40-140
o-Terphenyl	49		40-140
2-Fluorobiphenyl	66		40-140
2-Bromonaphthalene	63		40-140

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01 D	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	12/03/13 10:29		
Analyst:	GT		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	250	--	5
C9-C12 Aliphatics	ND		ug/l	250	--	5
C9-C10 Aromatics	ND		ug/l	250	--	5
C5-C8 Aliphatics, Adjusted	ND		ug/l	250	--	5
C9-C12 Aliphatics, Adjusted	ND		ug/l	250	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	130		70-130
2,5-Dibromotoluene-FID	**139**	Q	70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 12/03/13 06:00
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 11/27/13 05:02
Cleanup Method1: EPH-04-1
Cleanup Date1: 12/02/13

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG654833-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	53		40-140
2-Fluorobiphenyl	70		40-140
2-Bromonaphthalene	68		40-140

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 12/03/13 14:32
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG655709-3					
C5-C8 Aliphatics	ND		ug/l	15.6	--
C9-C12 Aliphatics	ND		ug/l	15.6	--
C9-C10 Aromatics	ND		ug/l	15.6	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	15.6	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	15.6	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	114		70-130
2,5-Dibromotoluene-FID	122		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG654833-2 WG654833-3								
C9-C18 Aliphatics	42		41		40-140	5		25
C19-C36 Aliphatics	68		63		40-140	0		25
C11-C22 Aromatics	59		64		40-140	8		25
Naphthalene	44		49		40-140	11		25
2-Methylnaphthalene	50		56		40-140	11		25
Acenaphthylene	47		52		40-140	10		25
Acenaphthene	51		57		40-140	11		25
Fluorene	54		60		40-140	11		25
Phenanthrene	58		63		40-140	8		25
Anthracene	63		69		40-140	9		25
Fluoranthene	60		64		40-140	6		25
Pyrene	60		65		40-140	8		25
Benzo(a)anthracene	57		61		40-140	7		25
Chrysene	58		60		40-140	3		25
Benzo(b)fluoranthene	58		62		40-140	7		25
Benzo(k)fluoranthene	60		62		40-140	3		25
Benzo(a)pyrene	56		58		40-140	4		25
Indeno(1,2,3-cd)Pyrene	60		63		40-140	5		25
Dibenzo(a,h)anthracene	57		59		40-140	3		25
Benzo(ghi)perylene	58		60		40-140	3		25
Nonane (C9)	**18**	Q	**21**	Q	30-140	15		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG654833-2 WG654833-3								
Decane (C10)	**26**	Q	**28**	Q	40-140	7		25
Dodecane (C12)	41		44		40-140	7		25
Tetradecane (C14)	49		51		40-140	4		25
Hexadecane (C16)	56		56		40-140	0		25
Octadecane (C18)	62		62		40-140	0		25
Nonadecane (C19)	64		63		40-140	2		25
Eicosane (C20)	64		64		40-140	0		25
Docosane (C22)	65		64		40-140	2		25
Tetracosane (C24)	65		65		40-140	0		25
Hexacosane (C26)	65		64		40-140	2		25
Octacosane (C28)	63		63		40-140	0		25
Triacontane (C30)	65		65		40-140	0		25
Hexatriacontane (C36)	62		62		40-140	0		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	53		48		40-140
o-Terphenyl	75		78		40-140
2-Fluorobiphenyl	66		73		40-140
2-Bromonaphthalene	66		72		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG655709-1 WG655709-2								
C5-C8 Aliphatics	95		94		70-130	1		25
C9-C12 Aliphatics	106		112		70-130	6		25
C9-C10 Aromatics	88		92		70-130	5		25
Benzene	86		91		70-130	5		25
Toluene	86		88		70-130	3		25
Ethylbenzene	86		89		70-130	4		25
p/m-Xylene	86		90		70-130	4		25
o-Xylene	86		90		70-130	5		25
Methyl tert butyl ether	80		89		70-130	11		25
Naphthalene	88		102		70-130	15		25
1,2,4-Trimethylbenzene	88		92		70-130	4		25
Pentane	99		90		70-130	10		25
2-Methylpentane	97		100		70-130	3		25
2,2,4-Trimethylpentane	99		103		70-130	4		25
n-Nonane	101		104		30-130	3		25
n-Decane	111		117		70-130	5		25
n-Butylcyclohexane	103		108		70-130	5		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG655709-1 WG655709-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	101		109		70-130
2,5-Dibromotoluene-FID	108		117		70-130

PCBS

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water	Extraction Method:	EPA 608
Analytical Method:	5,608	Extraction Date:	11/27/13 22:09
Analytical Date:	12/03/13 10:31	Cleanup Method1:	EPA 3665A
Analyst:	KB	Cleanup Date1:	12/01/13
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	12/01/13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	95		30-150	A

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 12/02/13 15:49
Analyst: KB

Extraction Method: EPA 608
Extraction Date: 11/27/13 22:09
Cleanup Method1: EPA 3665A
Cleanup Date1: 12/01/13
Cleanup Method2: EPA 3660B
Cleanup Date2: 12/01/13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG655093-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	70		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655093-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513													
Aroclor 1016	ND	2.35	2.07	88		-	-		40-140	-		50	A
Aroclor 1260	ND	2.35	2.09	89		-	-		40-140	-		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85				30-150	A
Decachlorobiphenyl	123				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG655093-2									
Aroclor 1016	69		-		40-140	-		50	A
Aroclor 1260	58		-		40-140	-		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61				30-150	A
Decachlorobiphenyl	73				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655093-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513							
Aroclor 1016	ND	ND	ug/l	NC		50	A
Aroclor 1221	ND	ND	ug/l	NC		50	A
Aroclor 1232	ND	ND	ug/l	NC		50	A
Aroclor 1242	ND	ND	ug/l	NC		50	A
Aroclor 1248	ND	ND	ug/l	NC		50	A
Aroclor 1254	ND	ND	ug/l	NC		50	A
Aroclor 1260	ND	ND	ug/l	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		70		30-150	A
Decachlorobiphenyl	95		86		30-150	A

PESTICIDES

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID:	L1324034-01 D	Date Collected:	11/25/13 09:15
Client ID:	HBS26-OW-112513	Date Received:	11/25/13
Sample Location:	Not Specified	Field Prep:	See Narrative
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8081B	Extraction Date:	11/26/13 15:44
Analytical Date:	12/02/13 12:16	Cleanup Method1:	EPA 3620B
Analyst:	SH	Cleanup Date1:	11/27/13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.400	--	20	A
Lindane	ND		ug/l	0.400	--	20	A
Alpha-BHC	ND		ug/l	0.400	--	20	A
Beta-BHC	ND		ug/l	0.400	--	20	A
Heptachlor	ND		ug/l	0.400	--	20	A
Aldrin	ND		ug/l	0.400	--	20	A
Heptachlor epoxide	ND		ug/l	0.400	--	20	A
Endrin	ND		ug/l	0.800	--	20	A
Endrin aldehyde	ND		ug/l	0.800	--	20	A
Endrin ketone	ND		ug/l	0.800	--	20	A
Dieldrin	ND		ug/l	0.800	--	20	A
4,4'-DDE	ND		ug/l	0.800	--	20	A
4,4'-DDD	ND		ug/l	0.800	--	20	A
4,4'-DDT	ND		ug/l	0.800	--	20	A
Endosulfan I	ND		ug/l	0.400	--	20	A
Endosulfan II	ND		ug/l	0.800	--	20	A
Endosulfan sulfate	ND		ug/l	0.800	--	20	A
Methoxychlor	ND		ug/l	4.00	--	20	A
Toxaphene	ND		ug/l	4.00	--	20	A
Chlordane	ND		ug/l	4.00	--	20	A
cis-Chlordane	ND		ug/l	0.400	--	20	A
trans-Chlordane	ND		ug/l	0.400	--	20	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	**0**	Q	30-150	A
Decachlorobiphenyl	**0**	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	**0**	Q	30-150	B
Decachlorobiphenyl	**0**	Q	30-150	B

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 11/27/13 11:58
Analyst: SH

Extraction Method: EPA 3510C
Extraction Date: 11/26/13 15:44
Cleanup Method1: EPA 3620B
Cleanup Date1: 11/27/13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG654726-1						
Delta-BHC	ND		ug/l	0.020	--	A
Lindane	ND		ug/l	0.020	--	A
Alpha-BHC	ND		ug/l	0.020	--	A
Beta-BHC	ND		ug/l	0.020	--	A
Heptachlor	ND		ug/l	0.020	--	A
Aldrin	ND		ug/l	0.020	--	A
Heptachlor epoxide	ND		ug/l	0.020	--	A
Endrin	ND		ug/l	0.040	--	A
Endrin aldehyde	ND		ug/l	0.040	--	A
Endrin ketone	ND		ug/l	0.040	--	A
Dieldrin	ND		ug/l	0.040	--	A
4,4'-DDE	ND		ug/l	0.040	--	A
4,4'-DDD	ND		ug/l	0.040	--	A
4,4'-DDT	ND		ug/l	0.040	--	A
Endosulfan I	ND		ug/l	0.020	--	A
Endosulfan II	ND		ug/l	0.040	--	A
Endosulfan sulfate	ND		ug/l	0.040	--	A
Methoxychlor	ND		ug/l	0.200	--	A
Toxaphene	ND		ug/l	0.200	--	A
Chlordane	ND		ug/l	0.200	--	A
cis-Chlordane	ND		ug/l	0.020	--	A
trans-Chlordane	ND		ug/l	0.020	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	86		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG654726-2 WG654726-3									
Delta-BHC	107		111		30-150	4		20	A
Lindane	109		116		30-150	6		20	A
Alpha-BHC	110		117		30-150	6		20	A
Beta-BHC	105		113		30-150	7		20	A
Heptachlor	110		106		30-150	4		20	A
Aldrin	107		106		30-150	1		20	A
Heptachlor epoxide	106		106		30-150	0		20	A
Endrin	109		110		30-150	1		20	A
Endrin aldehyde	86		85		30-150	2		20	A
Endrin ketone	84		85		30-150	2		20	A
Dieldrin	111		113		30-150	2		20	A
4,4'-DDE	108		109		30-150	1		20	A
4,4'-DDD	109		111		30-150	2		20	A
4,4'-DDT	113		115		30-150	2		20	A
Endosulfan I	109		109		30-150	0		20	A
Endosulfan II	96		97		30-150	2		20	A
Endosulfan sulfate	79		81		30-150	2		20	A
Methoxychlor	112		114		30-150	2		20	A
cis-Chlordane	126		130		30-150	3		20	A
trans-Chlordane	107		108		30-150	1		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG654726-2 WG654726-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		86		30-150	A
Decachlorobiphenyl	100		104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		73		30-150	B
Decachlorobiphenyl	78		80		30-150	B

METALS

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

SAMPLE RESULTS

Lab ID: L1324034-01 Date Collected: 11/25/13 09:15

Client ID: HBS26-OW-112513 Date Received: 11/25/13

Sample Location: Not Specified Field Prep: See Narrative

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.01000	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Arsenic, Total	0.01015		mg/l	0.00500	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Cadmium, Total	ND		mg/l	0.00200	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Chromium, Total	ND		mg/l	0.01000	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Copper, Total	ND		mg/l	0.01000	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Iron, Total	ND		mg/l	0.05	--	1	11/26/13 13:29	12/03/13 12:21	EPA 3005A	19,200.7	TT
Lead, Total	ND		mg/l	0.00500	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Mercury, Total	ND		mg/l	0.0002	--	1	11/30/13 06:55	11/30/13 10:21	EPA 245.1	3,245.1	DR
Nickel, Total	ND		mg/l	0.00500	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Selenium, Total	0.120		mg/l	0.0500	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Silver, Total	ND		mg/l	0.00400	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Zinc, Total	ND		mg/l	0.1000	--	10	12/04/13 08:44	12/04/13 11:54	EPA 3005A	1,6020A	KL
Dissolved Metals - Westborough Lab											
Antimony, Dissolved	ND		mg/l	0.00500	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Arsenic, Dissolved	0.00732		mg/l	0.00500	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Cadmium, Dissolved	ND		mg/l	0.00500	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Chromium, Dissolved	ND		mg/l	0.01000	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Copper, Dissolved	ND		mg/l	0.01000	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Iron, Dissolved	ND		mg/l	0.05	--	1	12/02/13 11:36	12/02/13 16:37	NA	19,200.7	TT
Lead, Dissolved	ND		mg/l	0.01000	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Mercury, Dissolved	ND		mg/l	0.0002	--	1	11/30/13 06:55	11/30/13 10:29	EPA 245.1	3,245.1	DR
Nickel, Dissolved	ND		mg/l	0.00500	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Selenium, Dissolved	0.212		mg/l	0.0500	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Silver, Dissolved	ND		mg/l	0.00250	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL
Zinc, Dissolved	ND		mg/l	0.1000	--	10	12/02/13 11:36	12/03/13 13:56	NA	1,6020A	KL

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG655172-1										
Mercury, Total	ND		mg/l	0.0002	--	1	11/30/13 06:55	11/30/13 09:58	3,245.1	DR

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG655173-1										
Mercury, Dissolved	ND		mg/l	0.0002	--	1	11/30/13 06:55	11/30/13 10:25	3,245.1	DR

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG655374-1										
Antimony, Dissolved	ND		mg/l	0.00050	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Arsenic, Dissolved	ND		mg/l	0.00050	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Cadmium, Dissolved	ND		mg/l	0.00020	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Chromium, Dissolved	ND		mg/l	0.00100	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Copper, Dissolved	ND		mg/l	0.00100	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Lead, Dissolved	ND		mg/l	0.00050	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Nickel, Dissolved	ND		mg/l	0.00050	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Selenium, Dissolved	ND		mg/l	0.00500	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Silver, Dissolved	ND		mg/l	0.00040	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL
Zinc, Dissolved	ND		mg/l	0.01000	--	1	12/02/13 11:36	12/03/13 13:41	1,6020A	KL

Prep Information

Digestion Method: NA

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG655375-1										
Iron, Dissolved	ND		mg/l	0.05	--	1	12/02/13 11:36	12/02/13 16:22	19,200.7	TT

Prep Information

Digestion Method: NA

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG655711-1										
Iron, Total	ND		mg/l	0.05	--	1	11/26/13 13:29	12/03/13 11:50	19,200.7	TT

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG655999-1										
Antimony, Total	ND		mg/l	0.00100	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Arsenic, Total	ND		mg/l	0.00050	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Cadmium, Total	ND		mg/l	0.00020	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Chromium, Total	ND		mg/l	0.00100	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Copper, Total	ND		mg/l	0.00100	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Lead, Total	ND		mg/l	0.00050	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Nickel, Total	ND		mg/l	0.00050	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Selenium, Total	ND		mg/l	0.00500	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Silver, Total	ND		mg/l	0.00040	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL
Zinc, Total	ND		mg/l	0.01000	--	1	12/04/13 08:44	12/04/13 11:36	1,6020A	KL

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG655172-2								
Mercury, Total	105		-		85-115	-		
Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG655173-2								
Mercury, Dissolved	107		-		85-115	-		
Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG655374-2								
Antimony, Dissolved	110		-		80-120	-		
Arsenic, Dissolved	98		-		80-120	-		
Cadmium, Dissolved	102		-		80-120	-		
Chromium, Dissolved	91		-		80-120	-		
Copper, Dissolved	94		-		80-120	-		
Lead, Dissolved	97		-		80-120	-		
Nickel, Dissolved	94		-		80-120	-		
Selenium, Dissolved	108		-		80-120	-		
Silver, Dissolved	82		-		80-120	-		
Zinc, Dissolved	100		-		80-120	-		
Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG655375-2								
Iron, Dissolved	100		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG655711-2					
Iron, Total	99	-	85-115	-	
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG655999-2					
Antimony, Total	85	-	80-120	-	
Arsenic, Total	101	-	80-120	-	
Cadmium, Total	97	-	80-120	-	
Chromium, Total	90	-	80-120	-	
Copper, Total	94	-	80-120	-	
Lead, Total	91	-	80-120	-	
Nickel, Total	94	-	80-120	-	
Selenium, Total	108	-	80-120	-	
Silver, Total	80	-	80-120	-	
Zinc, Total	103	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655172-4 QC Sample: L1323775-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0067	**134**	Q	-	-		70-130	-		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655173-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513												
Mercury, Dissolved	ND	0.005	0.0051	101		-	-		75-125	-		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655374-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513												
Antimony, Dissolved	ND	0.5	0.05276	**10**	Q	-	-		80-120	-		20
Arsenic, Dissolved	0.00732	0.12	0.02023	**11**	Q	-	-		80-120	-		20
Cadmium, Dissolved	ND	0.051	0.04053	**79**	Q	-	-		80-120	-		20
Chromium, Dissolved	ND	0.2	0.1814	91		-	-		80-120	-		20
Copper, Dissolved	ND	0.25	0.02804	**11**	Q	-	-		80-120	-		20
Lead, Dissolved	ND	0.51	0.4429	87		-	-		80-120	-		20
Nickel, Dissolved	ND	0.5	0.4422	88		-	-		80-120	-		20
Selenium, Dissolved	0.212	0.12	0.150	**0**	Q	-	-		80-120	-		20
Silver, Dissolved	ND	0.05	0.00517	**10**	Q	-	-		80-120	-		20
Zinc, Dissolved	ND	0.5	0.3938	**79**	Q	-	-		80-120	-		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655375-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513												
Iron, Dissolved	ND	1	0.95	95		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655711-4 QC Sample: L1324009-02 Client ID: MS Sample												
Iron, Total	0.26	1	1.2	94		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655999-4 QC Sample: L1324183-01 Client ID: MS Sample										
Antimony, Total	ND	0.5	0.4080	82		-	-	80-120	-	20
Arsenic, Total	0.00054	0.12	0.1261	105		-	-	80-120	-	20
Cadmium, Total	ND	0.051	0.05106	100		-	-	80-120	-	20
Chromium, Total	ND	0.2	0.1862	93		-	-	80-120	-	20
Copper, Total	0.0036	0.25	0.2341	92		-	-	80-120	-	20
Lead, Total	0.00088	0.51	0.4613	90		-	-	80-120	-	20
Nickel, Total	0.0019	0.5	0.4658	93		-	-	80-120	-	20
Selenium, Total	ND	0.12	0.133	111		-	-	80-120	-	20
Silver, Total	ND	0.05	0.03245	**65**	Q	-	-	80-120	-	20
Zinc, Total	ND	0.5	0.5188	104		-	-	80-120	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655172-3 QC Sample: L1323775-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655173-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655374-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Antimony, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	0.00732	0.00717	mg/l	2		20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Chromium, Dissolved	ND	ND	mg/l	NC		20
Copper, Dissolved	ND	ND	mg/l	NC		20
Lead, Dissolved	ND	ND	mg/l	NC		20
Nickel, Dissolved	ND	ND	mg/l	NC		20
Selenium, Dissolved	0.212	0.154	mg/l	**32**	Q	20
Silver, Dissolved	ND	ND	mg/l	NC		20
Zinc, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655375-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Iron, Dissolved	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655711-3 QC Sample: L1324009-02 Client ID: DUP Sample						
Iron, Total	0.26	0.25	mg/l	4		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655999-3 QC Sample: L1324183-01 Client ID: DUP Sample					
Cadmium, Total	ND	ND	mg/l	NC	20
Lead, Total	0.00088	0.00091	mg/l	3	20

INORGANICS
&
MISCELLANEOUS

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001
Lab Number: L1324034
Report Date: 12/04/13

SAMPLE RESULTS

Lab ID: L1324034-01
Client ID: HBS26-OW-112513
Sample Location: Not Specified
Matrix: Water
Date Collected: 11/25/13 09:15
Date Received: 11/25/13
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	7.0		mg/l	5.0	NA	1	-	12/02/13 08:15	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	--	1	11/27/13 09:00	12/02/13 11:52	30,4500CN-CE	JO
Cyanide, Amenable	ND		mg/l	0.010	--	2	12/03/13 11:00	12/03/13 14:20	30,4500CN-G	DG
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	12/02/13 14:00	12/03/13 12:47	64,9014(M)	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/26/13 00:15	30,4500CL-D	DE
Phenolics, Total	0.14		mg/l	0.03	--	1	11/29/13 12:15	11/29/13 15:15	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	1.00	--	100	11/26/13 02:45	11/26/13 03:16	30,3500CR-D	JT
Anions by Ion Chromatography - Westborough Lab										
Chloride	13800		mg/l	250	--	500	-	11/27/13 21:58	44,300.0	AU

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1324034

Project Number: 39291-001 **Report Date:** 12/04/13

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG654483-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/26/13 00:15	30,4500CL-D	DE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG654503-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/26/13 02:45	11/26/13 03:15	30,3500CR-D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG654890-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/27/13 09:00	12/02/13 11:47	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG654932-1										
Phenolics, Total	ND		mg/l	0.03	--	1	11/29/13 12:15	11/29/13 15:12	4,420.1	MP
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG655108-1										
Chloride	ND		mg/l	0.500	--	1	-	11/27/13 16:54	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655291-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/02/13 08:15	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655431-1										
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	12/02/13 14:00	12/03/13 12:44	64,9014(M)	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG655651-1										
Cyanide, Amenable	ND		mg/l	0.010	--	2	12/03/13 11:00	12/03/13 14:20	30,4500CN-G	DG

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG654483-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG654503-2								
Chromium, Hexavalent	100		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG654890-2								
Cyanide, Total	107		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG654932-2								
Phenolics, Total	110		-		70-130	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG655108-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655431-2								
Cyanide, Physiologically Available	87		-		80-120	-		
General Chemistry - Westborough Lab NEGATIVE LCS Associated sample(s): 01 Batch: WG655431-3								
Cyanide, Physiologically Available	**3**		-		0-10	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-001

Lab Number: L1324034

Report Date: 12/04/13

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG655651-2					
Cyanide, Amenable	100	-		-	

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654503-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513												
Chromium, Hexavalent	ND	10	9.00	90		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654890-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513												
Cyanide, Total	ND	0.2	ND	**0**	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654932-4 QC Sample: L1323932-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.41	102		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655108-3 QC Sample: L1324063-02 Client ID: MS Sample												
Chloride	2.14	4	6.12	100		-	-		40-151	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655431-5 QC Sample: L1324035-10 Client ID: MS Sample												
Cyanide, Physiologically Available	ND	0.2	0.206	103		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654483-3 QC Sample: L1324009-02 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654503-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654890-3 QC Sample: L1324050-06 Client ID: DUP Sample						
Cyanide, Total	ND	0.005	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG654932-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Phenolics, Total	0.14	0.14	mg/l	0		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655108-4 QC Sample: L1324063-02 Client ID: DUP Sample						
Chloride	2.14	2.13	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655291-2 QC Sample: L1324099-01 Client ID: DUP Sample						
Solids, Total Suspended	36	34	mg/l	6		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655431-4 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Cyanide, Physiologically Available	ND	0.006	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG655651-3 QC Sample: L1324034-01 Client ID: HBS26-OW-112513						
Cyanide, Amenable	ND	ND	mg/l	NC		

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

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(*)
L1324034-01A	Vial HCl preserved	A	N/A	4.8	Y	Absent	8260-SIM(14),8260(14)
L1324034-01B	Vial HCl preserved	A	N/A	4.8	Y	Absent	8260-SIM(14),8260(14)
L1324034-01C	Vial HCl preserved	A	N/A	4.8	Y	Absent	8260-SIM(14),8260(14)
L1324034-01D	Plastic 250ml HNO3 preserved	A	<2	4.8	Y	Absent	CU-6020S(180),FE-RI(180),SE-6020S(180),ZN-6020S(180),CR-6020S(180),NI-6020S(180),PB-6020S(180),AG-6020S(180),AS-6020S(180),HG-R(28),SB-6020S(180),CD-6020S(180)
L1324034-01E	Plastic 250ml HNO3 preserved	A	<2	4.8	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1324034-01F	Amber 1000ml HCl preserved	A	<2	4.8	Y	Absent	EPH-10(14)
L1324034-01G	Amber 1000ml HCl preserved	A	<2	4.8	Y	Absent	EPH-10(14)
L1324034-01H	Vial HCl preserved	A	N/A	4.8	Y	Absent	VPH-10(14)
L1324034-01I	Vial HCl preserved	A	N/A	4.8	Y	Absent	VPH-10(14)
L1324034-01J	Vial HCl preserved	A	N/A	4.8	Y	Absent	VPH-10(14)
L1324034-01K	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	PCB-608(7)
L1324034-01L	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	PCB-608(7)
L1324034-01M	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	PEST-8081(7)
L1324034-01N	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	PEST-8081(7)
L1324034-01O	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324034-01P	Amber 1000ml unpreserved	A	7	4.8	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1324034-01Q	Plastic 250ml NaOH preserved	A	>12	4.8	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1324034-01R	Plastic 500ml unpreserved	A	7	4.8	Y	Absent	HEXCR-3500(1)
L1324034-01S	Plastic 500ml unpreserved	A	7	4.8	Y	Absent	CL-300(28),TRC-4500(1)
L1324034-01T	Plastic 250ml NaOH preserved	A	>12	4.8	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)

*Values in parentheses indicate holding time in days

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-001

Lab Number: L1324034
Report Date: 12/04/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1324034-01W	Amber 500ml H2SO4 preserved	A	<2	4.8	Y	Absent	TPHENOL-420(28)
L1324034-01X	Plastic 1000ml unpreserved	A	7	4.8	Y	Absent	TSS-2540(7)
L1324034-02A	Vial HCl preserved	A	N/A	4.8	Y	Absent	8260-SIM(14),8260(14)

Container Comments

L1324034-01D

L1324034-01M

*Values in parentheses indicate holding time in days

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
Project Number:	39291-001	**Report Date:**	12/04/13

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

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.

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.

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
Project Number:	39291-001	**Report Date:**	12/04/13

Data Qualifiers

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1324034
Project Number:	39291-001	**Report Date:**	12/04/13

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

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.

Certificate/Approval Program Summary

Last revised November 12, 2013 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP) 504.1, Ethylene Dibromide (EDB) 504.1, 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223, Enumeration and P/A), E. Coli. – Colilert (SM9223, Enumeration and P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform-EC Medium (SM 9221E).

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), E. Coli – Colilert (SM9223 Enumeration), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E), Enterococcus - Enterolert.

Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Dalapon, Volatile Organics (SW 8260), Acid Extractables (Phenols) (SW 8270), Benzidines (SW 8270), Phthalates (SW 8270), Nitrosamines (SW 8270), Nitroaromatics & Cyclic Ketones (SW 8270), PAHs (SW 8270), Haloethers (SW 8270), Chlorinated Hydrocarbons (SW 8270).)

State of Illinois Certificate/Lab ID: 003155. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM2120B, 2320B, 2510B, 2540C, SM4500CN-CE, 4500F-C, 4500H-B, 4500NO3-F, 5310C, EPA 200.7, 200.8, 245.1, 300.0. Organic Parameters: EPA 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: SM2120B, 2310B, 2320B, 2340B, 2510B, 2540B, 2540C, 2540D, SM4500CL-E, 4500CN-E, 4500F-C, 4500H-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-E, 4500S-D, 4500SO3-B, 5210B, 5220D, 5310C, 5540C, EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1. Organic Parameters: EPA 608, 624, 625.)

Hazardous and Solid Waste (Inorganic Parameters: EPA 1010A, 1030, 1311, 1312, 6010C, 6020A, 7196A, 7470A, 7471B, 9012B, 9014, 9038, 9040C, 9045D, 9050A, 9065, 9251. Organic Parameters: 8011 (NPW only), 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8315A, 8330.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2120B, 2130B, 2320B, 2510C, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, 5310C, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 8315A, 9010C, SM2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-C, 4500NH3-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-B, 4500P-E, 4500S2-D, 4500SO3-B, 5540C, 5210B, 5220D, 5310C, 9010B, 9030B, 9040C, 7470A, 7196A, 2340B, EPA 200.7, 6010C, 200.8, 6020A, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8011, 8081B, 8082A, 8330, 8151A, 8260C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9040B, 9045C, 6010C, 6020A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B, 9038, 9251. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260C, 8270D, 8330, 8151A, 8081B, 8082A, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
*Drinking Water (*Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

*Non-Potable Water (*Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: 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-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, SW-846 6010C, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9010C, 9030, 9040B, 9040C, SM2120B, 2310B, 2320B, 2340B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 4500SO3-B, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082A, 8081B, 8015C, 8151A, 8330, 8270D-SIM.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010C, 6020A, 7196A, 7471B, 1010, 1010A, 1030, 9010C, 9012B, 9014, 9030B, 9040C, 9045C, 9045D, 9050, 9065, 9251, 1311, 1312, 3005A, 3050B, 3060A. Organic Parameters: SW-846 3540C, 3546, 3050B, 3580A, 3620D, 3630C, 5030B, 5035, 8260C, 8270D, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082A, 8081B.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2064. ***NELAP Accredited.***
Drinking Water (Organic Parameters: **EPA 524.2:** Di-isopropyl ether (DIPE), Ethyl-t-butyl ether (ETBE), Tert-amyl methyl ether (TAME)).

Non-Potable Water (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene. **EPA 8015C(M):** TPH.)

Solid & Chemical Materials (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310C, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, 4500SO4-E, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 5030C, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D,

9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5030C, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.1, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2340B, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010C, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 8315A, 3005A, 9010C, 9030B. Organic Parameters: EPA 624, 8260C, 8270D, 8270D-SIM, 625, 608, 8081B, 8151A, 8330A, 8082A, EPA 3510C, 5030B, 5030C, 8015C, 8011.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010C, 6020A, 7196A, 7471B, 8315A, 9012B, 9014, 9065, 9050A, 9038, 9251, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. Organic Parameters: EPA 8260C, 8270D, 8270D-SIM, 8015C, 8081B, 8151A, 8330A, 8082A, 3540C, 3546, 3580A, 5035A-H, 5035A-L.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500Cl-E, 4500Cn-E, 9012B, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO3-F, 353.2, 4500P-E, 4500SO4-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7470A, 7471B, 1311,1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, MA-EPH, MA-VPH.)

Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A,3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE, 245.1, 300.0, 350.1, 350.2, 351.1, 353.2, 420.1, 6010C, 6020A, 7196A, 7470A, 9030B, 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500S-D, 4500SO3-B, 5310BCD, 5540C, 9010C, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, 8015C, NJ-EPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010C, 6020A, 7196A, 7471B, 9010C, 9012B, 9014, 9040B, 9045D, 9050A, 9065, SM 4500NH3-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3620C, 3630C, 5035, 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, NJ-EPH.)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NJ-DEP.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.1, 2320B, 4500F-C, 4500NO3-F, 4500H+B, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 351.2, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 2340B, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C,

4500NH3-H, 4500NO2-B, 4500NO3-F, 4500 SO3-B, 4500H-B, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C, 9010Cm 9030B, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9010C, 9012B, 9030B, 9014, 9038, 9040C, 9045D, 9251, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 3550B, 3580A, 3620C, 3630C, 6020A, 8260B, 8260C, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010C, 6020A, 245.1, 7470A, 9040B, 9010B, 180.1, 300.0, 332.0, 6860, 351.1, 353.2, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500Norg-C, 4500NO3-F, 5310C, 2130B, 2320B, 2340B, 2540C, 5540C, 3005A, 3015, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A, 8082A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010C, 6020A, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9040B, 9045C, 9010C, 9012B, 9251, SM3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A/B-prep, 8082A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
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 8260B:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8260 Non-potable water matrix:** Iodomethane (methyl iodide), Methyl methacrylate. **EPA 8260 Soil matrix:** Tert-amyl methyl ether (TAME), Diisopropyl ether (DIPE), Azobenzene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine. **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease. **EPA 9060** in a soil matrix.

WATER

Serial_No:12041320:17

HALEY ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402

CHAIN OF CUSTODY RECORD L1324034

Phone (617) 886-7400
Fax (617) 886-7600

Page 1 of 1

H&A FILE NO. 39291-001
PROJECT NAME CHAO CENTER - HARVARD BUSINESS SCHOOL
H&A CONTACT LEE PENWELL

LABORATORY ALPHA ANALYTICAL
ADDRESS WESTBOROUGH, MA
CONTACT GINA HALL

DELIVERY DATE 11/25/13
TURNAROUND TIME 5 DAY
PROJECT MANAGER KATE DILAWARI

Sample No.	Date	Time	Depth	Type	1. VOCs 8260	2. SVOCs 8270/8270-SIM	3. EPH Carbon ranges	4. VPH Carbon Ranges	5. Total Metals	6. Metals Dissolved	7. PCBs	8. Pesticides	9. TCN, PACN,CAN	10. TSS	11. Total Phenolics SM 5500	12. Chloride	13. TRC	14. Hex Cr	Number of Containers
HBS26-OW-112513	11/25/13	0915	-	AQ	X	X	X	X	X	X	X	X	X	X	X	X	X	X	22
TB					X														1

Analysis Requested

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

5.,6. NPDES list of metals: Cd, Cr, Cu, Pb, Ni, Ag, Zn, As, Se, Sb, Hg and Fe

Sampled and Relinquished by	Received by
Sign Negar Dastjerdi	Sign Peter J Vaccaro
Print Negar Dastjerdi	Print Peter Vaccaro
Firm H&A	Firm
Date 11/25/13 Time 1630	Date 11-25-13 Time 16:30
Relinquished by	**Received by**
Sign Peter J Vaccaro	Sign
Print Peter Vaccaro	Print
Firm	Firm
Date 11-25-13 Time 18:23	Date Time
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID

VOA Vial	X		X	X											
Amber Glass		X				X	X				X				
Plastic Bottle					X			X	X			X	X	X	
Preservative	AF	A	AF	AF	AD	ADB	A	A	AC	A	AE	A	A	A	
Volume (mL)	40ml	1000	1000	40	250	250	1000	1000	250	1000	500	500	500	500	

SOLID

VOA Vial															
Amber Glass															
Clear Glass															
Preservative															
Volume															

PRESERVATION KEY

A Sample chilled (C) NaOH (E) H_2SO_4 G Methanol Hexane ND
(B) Sample filtered D HNO_3 F HCL H Water (Na2S2O3 (circle)

Sampling Comments

*Sample submitted for NPDES RGP permit appl.
Please follow appropriate testng methods and minimum detection levels as required by the EPA for the RGP.

Please note field pH on the COC here 8 6.61
Please field filter for dissolved metals

Evidence samples were tampered with? YES NO
If YES, please explain in section below.

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

_____ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.
_____ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.
_____ This Chain of Custody Record (specify) _____ includes X does not include samples defined as Drinking Water Samples.
_____ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyze

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☑ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☑ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact

APRIL 2011

WATER

Serial_No:12041320:17

CHAIN OF CUSTODY RECORD L1324034

HALEY ALDRICH
Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402
Phone (617) 886-7400
Fax (617) 886-7600

H&A FILE NO. 39291-001
PROJECT NAME CHAO CENTER - HARVARD BUSINESS SCHOOL
H&A CONTACT LEE PENWELL

LABORATORY ALPHA ANALYTICAL
ADDRESS WESTBOROUGH, MA
CONTACT GINA HALL

DELIVERY DATE 11/25/13
TURNAROUND TIME 5 DAY
PROJECT MANAGER KATE DILAWARI

Sample No.	Date	Time	Depth	Type	1. VOCs 8260	2. SVOCs 8270/8270-SIM	3. EPH Carbon ranges	4. VPH Carbon Ranges	5. Total Metals	6. Metals Dissolved	7. PCBs	8. Pesticides	9. TCN, PACN,CAN	10. TSS	11. Total Phenolics SM 5500	12. Chloride	13. TRC	14. Hex Cr	Number of Containers
HBS26-OW-112513	11/25/13	0915	-	AQ	X	X	X	X	X	X	X	X	X	X	X	X	X	X	22
TB					X														1

Analysis Requested

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

5.,6. NPDES list of metals: Cd, Cr, Cu, Pb, Ni, Ag, Zn, As, Se, Sb, Hg and Fe

Both samples also include 8260-SIM 1,4-Dioxane. For TPHENOL method 420 per Kate Dilawari---GMH 11/27/13

Sampled and Relinquished by	Received by
Sign Negar Dastjerdi	Sign Peter J Vargas
Print Negar Dastjerdi	Print Peter Vargas
Firm H&A	Firm
Date 11/25/13 Time 1630	Date 11-25-13 Time 16:30
Relinquished by	**Received by**
Sign Peter J Vargas	Sign
Print Peter Vargas	Print
Firm	Firm
Date 11-25-13 Time 18:23	Date Time
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID	AF	A	AF	AF	AD	ADB	A	A	AC	A	AE	A	A	A
VOA Vial	X													
Amber Glass		X	X											
Plastic Bottle				X	X		X	X			X			
Preservative						X			X	X		X	X	X
Volume (mL)	40ml	1000	1000	40	250	250	1000	1000	250	1000	500	500	500	500

SOLID	
VOA Vial	
Amber Glass	
Clear Glass	
Preservative	
Volume	

PRESERVATION KEY

A Sample chilled (C) NaOH (E) H_2SO_4 G Methanol Hexane ND
(B) Sample filtered D HNO_3 F HCL H Water (Na2S2O3 (circle))

Sampling Comments

*Sample submitted for NPDES RGP permit appl.
Please follow appropriate testng methods and minimum detection levels as required by the EPA for the RGP.

Please note field pH on the COC here 8 6.61

Please field filter for dissolved metals

Evidence samples were tampered with? YES NO

If YES, please explain in section below.

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

_____ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.
_____ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.
_____ This Chain of Custody Record (specify) _____ includes X does not include samples defined as Drinking Water Samples.
_____ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyze

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☑ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☑ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact

APRIL 2011

ANALYTICAL REPORT

Lab Number:	L1401208
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Kate Dilawari
Phone:	(617) 886-7458
Project Name:	CHAO CENTER-HARVARD BUSINESS
Project Number:	39291-002
Report Date:	01/14/14

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.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1401208-01	HBS26	Not Specified	12/31/13 08:00

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1401208

Project Number: 39291-002 **Report Date:** 01/14/14

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1401208
Project Number:	39291-002	**Report Date:**	01/14/14

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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for 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:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1401208
Project Number:	39291-002	**Report Date:**	01/14/14

Case Narrative (continued)

MCP Related Narratives

Report Submission

All MCP required questions were answered with affirmative responses; therefore, there are no relevant protocol-specific QC and/or performance standard non-conformances to report.

Non-MCP Related Narratives

Sample Receipt

L1401208-01 (HBS26) was field filtered for dissolved selenium.

Metals

L1401208-01 (HBS26) has elevated detection limits for total and dissolved selenium due to the dilutions required by matrix interferences encountered during analysis.

The WG664332-4 MS recovery (0%), performed on L1401208-01 (HBS26), is below the acceptance criteria for total selenium; however, the associated LCS recovery was within criteria. No further action was taken.

The WG664335-4 MS recovery (0%), performed on L1401208-01 (HBS26), is below the acceptance criteria for dissolved selenium; however, the associated LCS recovery was within criteria. No further action was taken.

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:  Kelly Stenstrom

Title: Technical Director/Representative Date: 01/14/14

METALS

Project Name: CHAO CENTER-HARVARD BUSINESS
Lab Number: L1401208
Project Number: 39291-002
Report Date: 01/14/14

SAMPLE RESULTS

Lab ID: L1401208-01
Client ID: HBS26
Sample Location: Not Specified
Matrix: Water

Date Collected: 12/31/13 08:00
Date Received: 12/31/13
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Selenium, Total	ND		mg/l	0.00278	--	5	01/13/14 15:00	01/14/14 10:25	HYDRIDE	86,1632A(M)	LR
Dissolved Metals - Mansfield Lab											
Selenium, Dissolved	ND		mg/l	0.00278	--	5	01/13/14 15:00	01/14/14 11:01	HYDRIDE	86,1632A(M)	LR

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1401208

Project Number: 39291-002 **Report Date:** 01/14/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG664332-1										
Selenium, Total	ND		mg/l	0.00056	--	1	01/13/14 15:00	01/14/14 09:50	86,1632A(M)	LR

Prep Information

Digestion Method: HYDRIDE

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG664335-1										
Selenium, Dissolved	ND		mg/l	0.00056	--	1	01/13/14 15:00	01/14/14 10:06	86,1632A(M)	LR

Prep Information

Digestion Method: HYDRIDE

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1401208

Report Date: 01/14/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG664332-2 SRM Lot Number: A2HGAF								
Selenium, Total	100		-		80-120	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG664335-2 SRM Lot Number: A2HGAF								
Selenium, Dissolved	109		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG664332-4 QC Sample: L1401208-01 Client ID: HBS26												
Selenium, Total	ND	0.00556	ND	**0**	Q	-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG664335-4 QC Sample: L1401208-01 Client ID: HBS26												
Selenium, Dissolved	ND	0.00556	ND	**0**	Q	-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG664332-3 QC Sample: L1401208-01 Client ID: HBS26						
Selenium, Total	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG664335-3 QC Sample: L1401208-01 Client ID: HBS26						
Selenium, Dissolved	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002
Lab Number: L1401208
Report Date: 01/14/14

SAMPLE RESULTS

Lab ID: L1401208-01
Client ID: HBS26
Sample Location: Not Specified
Matrix: Water
Date Collected: 12/31/13 08:00
Date Received: 12/31/13
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	13100		mg/l	500	--	1000	-	01/13/14 20:07	44,300.0	AU

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1401208

Project Number: 39291-002 **Report Date:** 01/14/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG664376-1										
Chloride	ND		mg/l	0.500	--	1	-	01/13/14 17:19	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1401208

Report Date: 01/14/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG664376-2								
Chloride	101		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG664376-3 QC Sample: L1401060-01 Client ID: MS Sample												
Chloride	666	100	776	110		-	-		40-151	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG664376-4 QC Sample: L1401060-01 Client ID: DUP Sample						
Chloride	666	665	mg/l	0		18

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1401208
Report Date: 01/14/14

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(*)
L1401208-01A	Plastic 250ml unpreserved	A	7	3.0	Y	Absent	CL-300(28)
L1401208-01B	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-T(180)
L1401208-01C	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-T(180)
L1401208-01D	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-S(180)
L1401208-01E	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-S(180)

*Values in parentheses indicate holding time in days

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1401208
Project Number:	39291-002	**Report Date:**	01/14/14

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

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.
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.
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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1401208
Project Number:	39291-002	**Report Date:**	01/14/14

Data Qualifiers

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.

Report Format: Data Usability Report

REFERENCES

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

86 Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry. USEPA Office of Water, EPA Method 1632, Revision A, August 1998.

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 December 11, 2013

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, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
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, SM4500Cl-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.

Serial_No:01141415:47

L1401208 ~~L1326422~~ 1/13/14

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402

CHAIN OF CUSTODY RECORD

Phone (617) 886-7400
Fax (617) 886-7600

H&A FILE NO.	39291-002	LABORATORY	ALPHA ANALYTICAL	DELIVERY DATE	12/31/13
PROJECT NAME	CHAO CENTER - HARVARD BUSINESS SCHOOL	ADDRESS	WESTBOROUGH, MA	TURNAROUND TIME	4 DAY
H&A CONTACT	L. PENWELL	CONTACT	GINA HALL	PROJECT MANAGER	K. DILAWARI

Analysis Requested

Sample No.	Date	Time	Depth	Type	1. Benzene (8260)	2. Total Selenium	3. Dissolved Selenium	4. EPH ranges	5. Chloride		Number of Containers	Comments (special instructions, precautions, additional method numbers, etc.)
HBS26	12/31/13	08:00	-	AQ		X	X		X	~~HOLD THIS SAMPLE~~	5	Laboratory to use applicable DEP CAM methods, unless otherwise directed.
B6A (OW)-S1	12/31/13	12:30	-	AQ	X			X			5	
B6A (OW)-S2	12/31/13	12:35	-	AQ		~~X~~	~~X~~		~~X~~	HOLD THIS SAMPLE	3	1. Analyze for Benzene only
Trip Blank				AQ	X						1	2. Run via reaction cell, collision cell, or graphite furnace
B6-W30(OW)	12/31/13	8:45	-	AQ	X					HOLD THIS SAMPLE	3	3. Run via reaction cell, collision cell, or graphite furnace
B6-N30(OW)	12/31/13	9:40	-	AQ	X					HOLD THIS SAMPLE	3	5. Run via reaction cell, collision cell, or graphite furnace
B6-S35(OW)	12/31/13	10:49	-	AQ	X					HOLD THIS SAMPLE		
B6-E62(OW)	12/31/13	12:55	-	AQ	X					HOLD THIS SAMPLE		

LIQUID

	1	2	3	4	5
VOA Vial	X				
Amber Glass				X	
Plastic Bottle		X	X		X
Preservative	AF	AD	ABD	AF	A
Volume (mL)	40	500	500	1000	250

SOLID

VOA Vial	
Amber Glass	
Clear Glass	
Preservative	
Volume	

Sampled and Relinquished by
Sign Chris Sullivan
Print Chris Sullivan
Firm H&A
Date 12/31 Time 14:40

Received by
Sign [signature]
Print Tim Gould
Firm AAA
Date 12-31-13 Time 14:48

Relinquished by
Sign [signature]
Print Tim Gould
Firm AAA
Date 12-31-13 Time 16:55

Received by
Sign [signature]
Print Blake Budah
Firm ALPHA
Date 12/31/13 Time 1555

Relinquished by
Sign
Print
Firm
Date Time

Received by
Sign
Print
Firm
Date Time

Sampling Comments
[redacted]

Evidence samples were tampered with? YES NO
If YES, please explain in section below.

PRESERVATION KEY

A Sample chilled	C NaOH	E H_2SO_4	G Methanol
B Sample filtered	D HNO_3	F HCL	H Water (Na2S2O3) (circle)

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

_____ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.
_____ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.
_____ This Chain of Custody Record (specify) _____ includes X does not include samples defined as Drinking Water Samples.
_____ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyze

Required Reporting Limits and Data Quality Objectives

- ☐ RC-S1
- ☐ RC-S2
- ☐ RC-GW1
- ☒ RC-GW2
- ☐ S1
- ☐ S2
- ☐ S3
- ☐ GW1
- ☒ GW2
- ☐ GW3

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact APRIL 2011

Form 3003

ANALYTICAL REPORT

Lab Number:	L1326422
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Kate Dilawari
Phone:	(617) 886-7458
Project Name:	CHAO CENTER-HARVARD BUSINESS
Project Number:	39291-002
Report Date:	01/06/14

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.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1326422
Report Date: 01/06/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1326422-01	HBS26	Not Specified	12/31/13 08:00
L1326422-02	B6A (OW)-S1	Not Specified	12/31/13 12:30
L1326422-03	B6A (OW)-S2	Not Specified	12/31/13 12:35
L1326422-04	TRIP BLANK	Not Specified	12/31/13 00:00
L1326422-05	B6-W30(OW)	Not Specified	12/31/13 08:45
L1326422-06	B6-N30(OW)	Not Specified	12/31/13 09:40
L1326422-07	B6-S35(OW)	Not Specified	12/31/13 10:49
L1326422-08	B6-E62(OW)	Not Specified	12/31/13 12:55

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1326422

Project Number: 39291-002 **Report Date:** 01/06/14

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1326422
Project Number:	39291-002	**Report Date:**	01/06/14

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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for 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:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1326422
Project Number:	39291-002	**Report Date:**	01/06/14

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

The samples were received above the appropriate pH for the Metals analysis. The laboratory added additional HNO3 to a pH <2. (The samples for Metals analysis were placed on hold at the client's request.)

Volatile Organics

In reference to question I:

All samples were analyzed for a subset of MCP compounds per the Chain of Custody.

EPH

In reference to question I:

All samples were analyzed for a subset of MCP compounds per the Chain of Custody.

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:  Cynthia McQueen

Title: Technical Director/Representative Date: 01/06/14

ORGANICS

VOLATILES

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1326422

Project Number: 39291-002 **Report Date:** 01/06/14

SAMPLE RESULTS

Lab ID:	L1326422-02	Date Collected:	12/31/13 12:30
Client ID:	B6A (OW)-S1	Date Received:	12/31/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/02/14 11:35		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Benzene	31		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1326422

Project Number: 39291-002 **Report Date:** 01/06/14

SAMPLE RESULTS

Lab ID:	L1326422-04	Date Collected:	12/31/13 00:00
Client ID:	TRIP BLANK	Date Received:	12/31/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	97,8260C		
Analytical Date:	01/02/14 08:25		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Benzene	ND		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1326422

Project Number: 39291-002 **Report Date:** 01/06/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/02/14 06:19
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02,04 Batch: WG662561-3					
Benzene	ND		ug/l	0.50	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,04 Batch: WG662561-1 WG662561-2								
Methylene chloride	98		98		70-130	0		20
1,1-Dichloroethane	99		99		70-130	0		20
Chloroform	101		100		70-130	1		20
Carbon tetrachloride	100		100		70-130	0		20
1,2-Dichloropropane	99		100		70-130	1		20
Dibromochloromethane	100		100		70-130	0		20
1,1,2-Trichloroethane	99		100		70-130	1		20
Tetrachloroethene	101		102		70-130	1		20
Chlorobenzene	99		99		70-130	0		20
Trichlorofluoromethane	95		104		70-130	9		20
1,2-Dichloroethane	99		99		70-130	0		20
1,1,1-Trichloroethane	105		107		70-130	2		20
Bromodichloromethane	101		101		70-130	0		20
trans-1,3-Dichloropropene	94		97		70-130	3		20
cis-1,3-Dichloropropene	99		101		70-130	2		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	96		98		70-130	2		20
1,1,2,2-Tetrachloroethane	94		95		70-130	1		20
Benzene	102		102		70-130	0		20
Toluene	98		97		70-130	1		20
Ethylbenzene	101		102		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,04 Batch: WG662561-1 WG662561-2								
Chloromethane	79		79		70-130	0		20
Bromomethane	70		73		70-130	4		20
Vinyl chloride	94		94		70-130	0		20
Chloroethane	95		94		70-130	1		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	101		101		70-130	0		20
Trichloroethene	100		101		70-130	1		20
1,2-Dichlorobenzene	97		98		70-130	1		20
1,3-Dichlorobenzene	97		98		70-130	1		20
1,4-Dichlorobenzene	97		98		70-130	1		20
Methyl tert butyl ether	99		99		70-130	0		20
p/m-Xylene	96		96		70-130	0		20
o-Xylene	98		98		70-130	0		20
cis-1,2-Dichloroethene	100		101		70-130	1		20
Dibromomethane	104		104		70-130	0		20
1,2,3-Trichloropropane	94		95		70-130	1		20
Styrene	104		104		70-130	0		20
Dichlorodifluoromethane	85		85		70-130	0		20
Acetone	95		93		70-130	2		20
Carbon disulfide	92		91		70-130	1		20
2-Butanone	93		94		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,04 Batch: WG662561-1 WG662561-2								
4-Methyl-2-pentanone	94		96		70-130	2		20
2-Hexanone	86		87		70-130	1		20
Bromochloromethane	106		106		70-130	0		20
Tetrahydrofuran	85		87		70-130	2		20
2,2-Dichloropropane	102		105		70-130	3		20
1,2-Dibromoethane	104		107		70-130	3		20
1,3-Dichloropropane	99		99		70-130	0		20
1,1,1,2-Tetrachloroethane	98		100		70-130	2		20
Bromobenzene	98		98		70-130	0		20
n-Butylbenzene	97		97		70-130	0		20
sec-Butylbenzene	100		101		70-130	1		20
tert-Butylbenzene	97		98		70-130	1		20
o-Chlorotoluene	94		94		70-130	0		20
p-Chlorotoluene	95		96		70-130	1		20
1,2-Dibromo-3-chloropropane	91		92		70-130	1		20
Hexachlorobutadiene	98		98		70-130	0		20
Isopropylbenzene	104		103		70-130	1		20
p-Isopropyltoluene	101		102		70-130	1		20
Naphthalene	91		92		70-130	1		20
n-Propylbenzene	101		101		70-130	0		20
1,2,3-Trichlorobenzene	94		95		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02,04 Batch: WG662561-1 WG662561-2								
1,2,4-Trichlorobenzene	94		94		70-130	0		20
1,3,5-Trimethylbenzene	98		98		70-130	0		20
1,2,4-Trimethylbenzene	98		97		70-130	1		20
Ethyl ether	100		100		70-130	0		20
Isopropyl Ether	96		96		70-130	0		20
Ethyl-Tert-Butyl-Ether	101		104		70-130	3		20
Tertiary-Amyl Methyl Ether	99		100		70-130	1		20
1,4-Dioxane	92		89		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		96		70-130
Toluene-d8	98		97		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	102		101		70-130

PETROLEUM HYDROCARBONS

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1326422

Project Number: 39291-002 **Report Date:** 01/06/14

SAMPLE RESULTS

Lab ID:	L1326422-02	Date Collected:	12/31/13 12:30
Client ID:	B6A (OW)-S1	Date Received:	12/31/13
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	12/31/13 19:53
Analytical Date:	01/03/14 18:09	Cleanup Method1:	EPH-04-1
Analyst:	AR	Cleanup Date1:	01/02/14

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	83		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	88		40-140

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002
Lab Number: L1326422
Report Date: 01/06/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 01/02/14 18:16
Analyst: AR

Extraction Method: EPA 3510C
Extraction Date: 12/31/13 19:53
Cleanup Method1: EPH-04-1
Cleanup Date1: 01/02/14

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 02 Batch: WG662526-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	80		40-140
2-Bromonaphthalene	79		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG662526-2 WG662526-3								
C9-C18 Aliphatics	69		59		40-140	16		25
C19-C36 Aliphatics	85		79		40-140	7		25
C11-C22 Aromatics	70		75		40-140	7		25
Naphthalene	68		66		40-140	3		25
2-Methylnaphthalene	72		71		40-140	1		25
Acenaphthylene	60		62		40-140	3		25
Acenaphthene	69		71		40-140	3		25
Fluorene	68		71		40-140	4		25
Phenanthrene	71		75		40-140	5		25
Anthracene	72		77		40-140	7		25
Fluoranthene	72		76		40-140	5		25
Pyrene	73		78		40-140	7		25
Benzo(a)anthracene	66		72		40-140	9		25
Chrysene	68		73		40-140	7		25
Benzo(b)fluoranthene	69		76		40-140	10		25
Benzo(k)fluoranthene	72		76		40-140	5		25
Benzo(a)pyrene	63		70		40-140	11		25
Indeno(1,2,3-cd)Pyrene	71		76		40-140	7		25
Dibenzo(a,h)anthracene	66		72		40-140	9		25
Benzo(ghi)perylene	69		74		40-140	7		25
Nonane (C9)	61		48		30-140	24		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1326422

Report Date: 01/06/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG662526-2 WG662526-3								
Decane (C10)	70		56		40-140	22		25
Dodecane (C12)	74		62		40-140	18		25
Tetradecane (C14)	78		68		40-140	14		25
Hexadecane (C16)	82		74		40-140	10		25
Octadecane (C18)	86		78		40-140	10		25
Nonadecane (C19)	86		79		40-140	8		25
Eicosane (C20)	86		80		40-140	7		25
Docosane (C22)	86		80		40-140	7		25
Tetracosane (C24)	87		81		40-140	7		25
Hexacosane (C26)	86		80		40-140	7		25
Octacosane (C28)	84		78		40-140	7		25
Triacontane (C30)	86		79		40-140	8		25
Hexatriacontane (C36)	86		79		40-140	8		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	81		67		40-140
o-Terphenyl	73		81		40-140
2-Fluorobiphenyl	77		78		40-140
2-Bromonaphthalene	76		80		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1326422
Report Date: 01/06/14

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(*)
L1326422-01A	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-01B	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-01C	Plastic 250ml unpreserved	A	7	3.0	Y	Absent	HOLD(14)
L1326422-01D	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-01E	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-02A	Vial HCl preserved	A	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1326422-02B	Vial HCl preserved	A	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1326422-02C	Vial HCl preserved	A	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1326422-02D	Amber 1000ml HCl preserved	A	<2	3.0	Y	Absent	EPH-10(14)
L1326422-02E	Amber 1000ml HCl preserved	A	<2	3.0	Y	Absent	EPH-10(14)
L1326422-03A	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-03B	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	HOLD(14)
L1326422-03C	Plastic 250ml unpreserved	A	7	3.0	Y	Absent	HOLD(14)
L1326422-04A	Vial HCl preserved	A	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1326422-05A	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-05B	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-05C	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-06A	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-06B	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-06C	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-07A	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-07B	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-07C	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-08A	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-08B	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)
L1326422-08C	Vial HCl preserved	A	N/A	3.0	Y	Absent	HOLD-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1326422
Project Number:	39291-002	**Report Date:**	01/06/14

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

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.

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.

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1326422
Project Number:	39291-002	**Report Date:**	01/06/14

Data Qualifiers

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1326422
Project Number:	39291-002	**Report Date:**	01/06/14

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

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 December 11, 2013

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, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
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, SM4500Cl-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.

Serial No:20106141501

HALEY & ALDRICH
Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402
Phone (617) 886-7400
Fax (617) 886-7600

CHAIN OF CUSTODY RECORD

H&A FILE NO.	39291-002	LABORATORY	ALPHA ANALYTICAL
PROJECT NAME	CHAO CENTER - HARVARD BUSINESS SCHOOL	ADDRESS	WESTBOROUGH, MA
H&A CONTACT	L. PENWELL	CONTACT	GINA HALL
DELIVERY DATE	12/31/13		
TURNAROUND TIME	4 DAY		
PROJECT MANAGER	K. DILAWARI		

Sample No.	Date	Time	Depth	Type	1. Benzene (8260)	2. Total Selenium	3. Dissolved Selenium	4. EPH c-ranges	5. Chloride									Number of Containers
HBS26	12/31/13	08:00	-	AQ		X	X		X			HOLD THIS SAMPLE						5
B6A (OW)-S1	12/31/13	12:30	-	AQ	X			X										5
B6A (OW)-S2	12/31/13	12:35	-	AQ		X	X		X			HOLD THIS SAMPLE						3
Trip Blank				AQ	X													1
B6-W30(OW)	12/31/13	8:45	-	AQ	X							HOLD THIS SAMPLE						3
B6-N30(OW)	12/31/13	9:40	-	AQ	X							HOLD THIS SAMPLE						3
B6-S35(OW)	12/31/13	10:49	-	AQ	X							HOLD THIS SAMPLE						
B6-E62(OW)	12/31/13	12:55	-	AQ	X							HOLD THIS SAMPLE						

Analysis Requested

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

1. Analyze for Benzene only
2. Run via reaction cell, collision cell, or graphite furnace
3. Run via reaction cell, collision cell, or graphite furnace
5. Run via reaction cell, collision cell, or graphite furnace

Sampled and Relinquished by	Received by
Sign Chris Sullivan	Sign
Print Chris Sullivan	Print Tim Qadi
Firm H&A	Firm ALPHA
Date 12/31 Time 14:40	Date 12-31-13 Time 14:40
Relinquished by	**Received by**
Sign	Sign
Print Tim Qadi	Print Blake Budelo
Firm ALPHA	Firm ALPHA
Date 12-31-13 Time 16:55	Date 12/31/13 Time 1655
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID						
X						VOA Vial
			X			Amber Glass
	X	X		X		Plastic Bottle
AF	AD	ABD	AF	A		Preservative
40	500	500	1000	250		Volume (mL)

SOLID	
	VOA Vial
	Amber Glass
	Clear Glass
	Preservative
	Volume

PRESERVATION KEY

A Sample chilled C NaOH E H_2SO_4 G Methanol
B Sample filtered D HNO_3 F HCL H Water $Na_2S_2O_3$ (circle)

Sampling Comments

[redacted]

Evidence samples were tampered with? YES NO
If YES, please explain in section below.

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

_____ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.

_____ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.

_____ This Chain of Custody Record (specify) _____ includes X does not include samples defined as Drinking Water Samples.

_____ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyze

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☒ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☒ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact APRIL 2011

ANALYTICAL REPORT

Lab Number:	L1400792
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Kate Dilawari
Phone:	(617) 886-7458
Project Name:	CHAO CENTER-HARVARD BUSINESS
Project Number:	39291-002
Report Date:	01/09/14

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.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1400792-01	B6A (OW)-S2	Not Specified	12/31/13 12:35

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1400792

Project Number: 39291-002 **Report Date:** 01/09/14

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1400792
Project Number:	39291-002	**Report Date:**	01/09/14

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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for 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:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1400792
Project Number:	39291-002	**Report Date:**	01/09/14

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

The sample was field filtered for dissolved metals.

Metals

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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: Cynthia McQueen

Title: Technical Director/Representative Date: 01/09/14

METALS

Project Name: CHAO CENTER-HARVARD BUSINESS
Lab Number: L1400792
Project Number: 39291-002
Report Date: 01/09/14

SAMPLE RESULTS

Lab ID: L1400792-01
Client ID: B6A (OW)-S2
Sample Location: Not Specified
Matrix: Water

Date Collected: 12/31/13 12:35
Date Received: 12/31/13
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Selenium, Total	ND		mg/l	0.00056	--	1	01/08/14 14:00	01/09/14 11:37	HYDRIDE	86,1632A(M)	LR
Dissolved Metals - Mansfield Lab											
Selenium, Dissolved	ND		mg/l	0.00056	--	1	01/08/14 14:00	01/09/14 12:06	HYDRIDE	86,1632A(M)	LR

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1400792

Project Number: 39291-002 **Report Date:** 01/09/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG663540-1										
Selenium, Total	ND		mg/l	0.00056	--	1	01/08/14 14:00	01/09/14 11:33	86,1632A(M)	LR

Prep Information

Digestion Method: HYDRIDE

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG663541-1										
Selenium, Dissolved	ND		mg/l	0.00056	--	1	01/08/14 14:00	01/09/14 12:02	86,1632A(M)	LR

Prep Information

Digestion Method: HYDRIDE

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1400792

Report Date: 01/09/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG663540-2 SRM Lot Number: A2HGAF								
Selenium, Total	101		-		80-120	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG663541-2 SRM Lot Number: A2HGAF								
Selenium, Dissolved	99		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG663540-4 QC Sample: L1400792-01 Client ID: B6A (OW)-S2												
Selenium, Total	ND	0.00556	0.00646	116		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG663541-4 QC Sample: L1400792-01 Client ID: B6A (OW)-S2												
Selenium, Dissolved	ND	0.00556	0.00555	100		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG663540-3 QC Sample: L1400792-01 Client ID: B6A (OW)-S2						
Selenium, Total	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG663541-3 QC Sample: L1400792-01 Client ID: B6A (OW)-S2						
Selenium, Dissolved	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002
Lab Number: L1400792
Report Date: 01/09/14

SAMPLE RESULTS

Lab ID: L1400792-01
Client ID: B6A (OW)-S2
Sample Location: Not Specified
Matrix: Water
Date Collected: 12/31/13 12:35
Date Received: 12/31/13
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	703.		mg/l	25.0	--	50	-	01/08/14 18:17	44,300.0	AU

Project Name: CHAO CENTER-HARVARD BUSINESS **Lab Number:** L1400792

Project Number: 39291-002 **Report Date:** 01/09/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG663603-1										
Chloride	ND		mg/l	0.500	--	1	-	01/08/14 17:29	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS

Project Number: 39291-002

Lab Number: L1400792

Report Date: 01/09/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG663603-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG663603-3 QC Sample: L1400825-03 Client ID: MS Sample												
Chloride	ND	4	4.24	106		-	-		40-151	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG663603-4 QC Sample: L1400825-03 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		18

Project Name: CHAO CENTER-HARVARD BUSINESS
Project Number: 39291-002

Lab Number: L1400792
Report Date: 01/09/14

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(*)
L1400792-01A	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-T(180)
L1400792-01B	Plastic 250ml HNO3 preserved	A	<2	3.0	Y	Absent	A2-SE-HGAF-S(180)
L1400792-01C	Plastic 250ml unpreserved	A	7	3.0	Y	Absent	CL-300(28)

*Values in parentheses indicate holding time in days

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1400792
Project Number:	39291-002	**Report Date:**	01/09/14

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

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.

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.

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1400792
Project Number:	39291-002	**Report Date:**	01/09/14

Data Qualifiers

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.

Report Format: Data Usability Report

Project Name:	CHAO CENTER-HARVARD BUSINESS	**Lab Number:**	L1400792
Project Number:	39291-002	**Report Date:**	01/09/14

REFERENCES

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

86 Chemical Speciation of Arsenic in Water and Tissue by Hydride Generation Quartz Furnace Atomic Absorption Spectrometry. USEPA Office of Water, EPA Method 1632, Revision A, August 1998.

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 December 11, 2013

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, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
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, SM4500Cl-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.

U1400792 L1326922 (1)

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402

Phone (617) 886-7400
Fax (617) 886-7600

CHAIN OF CUSTODY RECORD

Page 1 of 1

H&A FILE NO.	39291-002	LABORATORY	ALPHA ANALYTICAL	DELIVERY DATE	12/31/13
PROJECT NAME	CHAO CENTER - HARVARD BUSINESS SCHOOL	ADDRESS	WESTBOROUGH, MA	TURNAROUND TIME	4 DAY
H&A CONTACT	L. PENWELL	CONTACT	GINA HALL	PROJECT MANAGER	K. DILAWARI

Analysis Requested

Sample No.	Date	Time	Depth	Type	1. Benzene (8260)	2. Total Selenium	3. Dissolved Selenium	4. EPH c-ranges	5. Chloride		Number of Containers
HBS26	12/31/13	08:00	-	AQ		X	X		X	~~HOLD THIS SAMPLE~~	5
B6A (OW)-S1	12/31/13	12:30	-	AQ	X			X			5
B6A (OW)-S2	12/31/13	12:35	-	AQ		X	X		X	~~HOLD THIS SAMPLE~~	3
Trip Blank				AQ	X						1
B6-W30(OW)	12/31/13	8:45	—	AQ	X					~~HOLD THIS SAMPLE~~	3
B6-N30(OW)	12/31/13	9:40	—	AQ	X					~~HOLD THIS SAMPLE~~	3
B6-S35(OW)	12/31/13	10:49	—	AQ	X					~~HOLD THIS SAMPLE~~	
B6-E62(OW)	12/31/13	12:55	—	AQ	X					~~HOLD THIS SAMPLE~~	

Also analyze sample for Chloride

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

1. Analyze for Benzene only
2. Run via reaction cell, collision cell, or graphite furnace
3. Run via reaction cell, collision cell, or graphite furnace
5. Run via reaction cell, collision cell, or graphite furnace

Sampled and Relinquished by
Sign Chris Sullivan
Print Chris Sullivan
Firm H&A
Date 12/31 Time 14:40

Received by
Sign [signature]
Print Tim Padd
Firm AAL
Date 12-31-13 Time 14:40

Relinquished by
Sign [signature]
Print Tim Padd
Firm AAL
Date 12-31-13 Time 16:55

Received by
Sign [signature]
Print Blake Budah
Firm ALPHA
Date 12/31/13 Time 1555

Relinquished by
Sign
Print
Firm
Date Time

Received by
Sign
Print
Firm
Date Time

LIQUID

	1	2	3	4	5	
	X					VOA Vial
				X		Amber Glass
		X	X		X	Plastic Bottle
	AF	AD	ABD	AF	A	Preservative
	40	500	500	1000	250	Volume (mL)

SOLID

VOA Vial / Amber Glass / Clear Glass / Preservative / Volume

Sampling Comments

[redacted]

Evidence samples were tampered with? YES NO
If YES, please explain in section below.

PRESERVATION KEY

A Sample chilled C NaOH E H_2SO_4 G Methanol
B Sample filtered D HNO_3 F HCL H Water (Na2S2O3) (circle)

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

_______ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.
_______ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.
_______ This Chain of Custody Record (specify) ________ includes ___X___ does not include samples defined as Drinking Water Samples.
_______ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) ________ analyze

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☒ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☒ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact

APRIL 2011

Form 3003

U1400792 ~~L13264922~~ (1)

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402

Phone (617) 886-7400
Fax (617) 886-7600

CHAIN OF CUSTODY RECORD

Page 1 of 1

H&A FILE NO. 39291-002
PROJECT NAME CHAO CENTER - HARVARD BUSINESS SCHOOL
H&A CONTACT L. PENWELL

LABORATORY ALPHA ANALYTICAL
ADDRESS WESTBOROUGH, MA
CONTACT GINA HALL

DELIVERY DATE 12/31/13
TURNAROUND TIME 4 DAY
PROJECT MANAGER K. DILAWARI

Revised 1/7/14 (KB)

Analysis Requested

Sample No.	Date	Time	Depth	Type	1. Benzene (8260)	2. Total Selenium	3. Dissolved Selenium	4. EPH c-Ranges	5. Chloride	Chloride (KB)		Number of Containers
HBS26	12/31/13	08:00	-	AQ		X	X	~~X~~	X		~~HOLD THIS SAMPLE~~	5
B6A (OW)-S1	12/31/13	12:30	-	AQ	X			X				5
B6A (OW)-S2	12/31/13	12:35	-	AQ		X	X		X	☒	~~HOLD THIS SAMPLE~~	3
Trip Blank				AQ	X							1
B6-W30(OW)	12/31/13	8:45	-	AQ	X						~~HOLD THIS SAMPLE~~	3
B6-N30(OW)	12/31/13	9:40	-	AQ	X						~~HOLD THIS SAMPLE~~	3
B6-S35(OW)	12/31/13	10:49	-	AQ	X						~~HOLD THIS SAMPLE~~	
B6-E62(OW)	12/31/13	12:55	-	AQ	X						~~HOLD THIS SAMPLE~~	

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

1. Analyze for Benzene only
2. Run via reaction cell, collision cell, or graphite furnace
3. Run via reaction cell, collision cell, or graphite furnace
5. Run via reaction cell, collision cell, or graphite furnace

LIQUID

	1	2	3	4	5
VOA Vial	X				
Amber Glass				X	
Plastic Bottle		X	X		X
Preservative	AF	AD	ABD	AF	A
Volume (mL)	40	500	500	1000	250

SOLID

VOA Vial	
Amber Glass	
Clear Glass	
Preservative	
Volume	

Sampled and Relinquished by	Received by
Sign [signature]	Sign [signature]
Print Chris Sullivan	Print Tim Dodd
Firm H&A	Firm Alpha
Date 12/31 Time 14:40	Date 12-31-13 Time 14:40
Relinquished by	**Received by**
Sign [signature]	Sign [signature]
Print Tim Dodd	Print Blake Budah
Firm Alpha	Firm ALPHA
Date 12-31-13 Time 16:55	Date 12/31/13 Time 1555
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

Sampling Comments

[redacted]

Evidence samples were tampered with? YES NO

If YES, please explain in section below.

PRESERVATION KEY

A Sample chilled C NaOH E H_2SO_4 G Methanol
B Sample filtered D HNO_3 F HCL H Water (Na2S2O3) (circle)

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections!

_______ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.

_______ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.

_______ This Chain of Custody Record (specify) _______ includes ___X___ does not include samples defined as Drinking Water Samples.

_______ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _______ analyze

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☒ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☒ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory GOLDENROD - Haley & Aldrich Contact

APRIL 2011

Form 3003