AECOM
250 Apollo Drive
Chelmsford, MA 01824

978.905.2100 tel
978.905.2101 fax

via e-mail

July 13, 2015

US Environmental Protection Agency
Dewatering GP Processing
Industrial Permit Unit (OEP 06-4)
5 Post Office Square – Suite 100
Boston, MA 02109-3912
GeneralPermit.Dewatering@epa.gov

Subject: Notice of Intent for Coverage Under the Dewatering General Permit
BMR-350 E Kendall F LLC - Kendall Square Garage Site, Cambridge, MA

Dear Sir or Madam,

On behalf of BMR-350 E Kendall F LLC ("BMR"), AECOM herein submits this Notice of Intent (NOI) for coverage under the General Permit for Dewatering Activity Discharges (MAG070000) (Dewatering General Permit - DGP), which became effective on May 20, 2015 for the BMR-350 E Kendall F LLC - Kendall Square Garage site located at 350 East Kendall Street in Cambridge, Massachusetts. This site is currently authorized under the expired DGP (Permit No. MAG070363) to conduct long-term dewatering activities to prevent flooding of the building basement.

If you have any questions or need additional information, please do not hesitate to contact either of the undersigned at AECOM at 978.905.2100.

Yours sincerely,

Neeraj Ghai
Project Manager
Neeraj.ghai@aecom.com

Jennifer Atkins
Project Specialist
jennifer.atkins@aecom.com

cc: Mass DEP, Div. of Watershed Management
K. Slein, BMR

\\uschl1fp001\Data\Projects\Jobs\Rem_Eng\Project Files\BMR\350 Kendall\NOI_Dewatering_GenPermit_2015\NOI_cvr-ltr_350Kendall_2015-06.docx

II. Suggested Notice of Intent (NOI) Format

1. General facility information. Please provide the following information about the facility.

a) Name of facility:
BMR-350 E Kendall F LLC - Kendall Square Garage

Mailing Address for the Facility:
BMR-350 E Kendall F LLC, Attn: Mr. Kevin Slein
17190 Bernardo Center Drive, San Diego, CA 92128

b) Location Address of the Facility (if different from mailing address):
350 Kendall Street
Cambridge, MA 02142

Facility Location
longitude: -71.081599
latitude: 42.636229

Type of Business:
Office Building

Facility SIC codes:
N/A

c) Name of facility owner: BMR-350 E Kendall F LLC **Owner's email:** kevin.slein@biomedrealty.com

Owner's Tel #: (617) 225-2440 **Owner's Fax #:** (617) 225-0847

Address of owner (if different from facility address)
17190 Bernardo Center Drive, San Diego, CA 92128

Owner is (check one): 1. Federal____ 2. State _____ 3. Private_____ 4. Other __✓__ (Describe) limited liability company

Legal name of Operator, if not owner: AECOM Technical Services, Inc.

Operator Contact Name: Neeraj Ghai, Project Manager

Operator Tel Number: (978) 905-2100 **Fax Number:** (978) 905-2101

Operator's email: neeraj.ghai@aecom.com

Operator Address (if different from owner)

250 Apollo Drive, Chelmsford, MA 01824

d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? ✓

e) Check Yes or No for the following:

1. **Has a prior NPDES permit been granted for the discharge? Yes** ✓ **No____ If Yes, Permit Number:** DGP Authorization No. MAG070363
2. **Is the discharge a "new discharger" as defined by 40 CFR Section 122.2? Yes_____ No** ✓
3. **Is the facility covered by an individual NPDES permit? Yes_____ No** ✓ **If Yes, Permit Number ____**
4. **Is there a pending application on file with EPA for this discharge? Yes_____ No** ✓ **If Yes, date of submittal:**

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

a) Name of receiving water into which discharge will occur: Charles River via the Broad Canal

State Water Quality Classification: Class B **Freshwater:** X **Marine Water:** ____

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

1. **Construction dewatering of groundwater intrusion and/or storm water accumulation.** See Attachment 1
2. ✓ **Short-term or long-term dewatering of foundation sumps.**
3. **Other.**

c) Number of outfalls 1

For each outfall:

d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 451,008 **GPD**
Average Monthly Flow 287,032 **GPD**

e.) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 7.93 **Min pH** 6.61

f.) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. Groundwater - see Attachment 1 and Tables 1 and 2

g.) What treatment does the wastewater receive prior to discharge? Grit chamber

h.) Is the discharge continuous? Yes ✓ **No** ____ **If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B)** ____
If (P), number of days or months per year of the discharge ____ **and the specific months of discharge** ____;
If (I), number of days/year there is a discharge ____
Is the discharge temporary? Yes ____ **No** ✓
If yes, approximate start date of dewatering ____ **approximate end date of dewatering** ____

i.) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. -71.0813 **lat.** 42.3629 **; Outfall 2: long.** ____ **lat.** ____ **; Outfall 3: long.** ____ **lat.** ____.

j.) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations ____ **cfs** N/A - not potable water
(See Appendix VIII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

k.) Does the discharge occur in an ACEC? Yes _____ No ✓
If yes, provide the name of the ACEC: _____

3. Contaminant Information

a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for aquatic organism(s)). No chemicals to be used.

b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge.

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix IV. In addition, respond to the following questions.

a) Which of the three eligibility criteria listed in Appendix IV, Criterion (A, B, or C) have you met? A

b) Please attach documentation with your NOI supporting your response. Please see Appendix IV for acceptable documentation See Attachment 2

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

a) See Screening Process in Appendix III and respond to questions regarding your site and any historic properties listed or eligible for listing on the National Register of Historic Places. Question 1: Yes ✓ No ____ ; Question 2: No ✓ Yes _____ See Attachment 3

b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No ✓ If yes, attach the results of the consultation(s).

c) Which of the three National Historic Preservation Act eligibility criterion listed in Appendix III, Criterion (A, B, or C) have you met? A

d) Is the project located on property of religious or cultural significance to an Indian Tribe? Yes _____ or No ✓ If yes, provide that name of the Indian Tribe associated with the property. _____

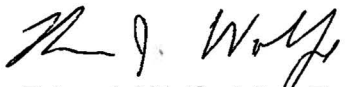
6. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) 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 Name: BMR-350 E Kendall F LLC - Kendall Square Garage

Operator signature: 

Print Full Name and Title: Brian J. Wolfe, Vice President

Date: 07/10/2015

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

APPROVED
BIOMED REALTY LEGAL

Tables

Table 1 - Summary of Effluent Data - June 2012 through May 2015
Notice of Intent for Coverage under the 2015 Discharge General Permit (MAG07000)
BMR-350 E Kendall F LLC - Kendall Square Garage Site
350 Kendall Street, Cambridge, MA

Parameter	pH (s.u.)	Total Suspended Solids (mg/L)
Effluent Limit	6.5-8.3	50 (avg. monthly) 100 (max. daily)
6/11/2012	7.22	<2
7/3/2012	7.40	**2**
8/6/2012	7.44	**8**
9/5/2012	7.01	**11**
10/1/2012	7.59	<2
11/13/2012	7.52	**12**
12/5/2012	7.36	**6**
1/9/2013	7.75	<2
2/4/2013	7.93	**2**
3/6/2013	7.12	**3**
4/2/2013	7.34	**11**
5/9/2013	7.39	**5**

Parameter	pH (s.u.)	Total Suspended Solids (mg/L)
Effluent Limit	6.5-8.3	50 (avg. monthly) 100 (max. daily)
6/3/2013	6.84	<5
7/8/2013	7.51	<5
8/7/2013	7.49	<5
9/3/2013	7.40	<5
10/7/2013	7.68	<5
11/4/2013	7.81	<5
12/3/2013	6.61	<5
1/8/2014	7.82	**8**
2/4/2014	7.79	<5
3/4/2014	7.52	<5
4/9/2014	7.50	<5
5/6/2014	7.37	**5**

Parameter	pH (s.u.)	Total Suspended Solids (mg/L)
Effluent Limit	6.5-8.3	50 (avg. monthly) 100 (max. daily)
6/2/2014	7.53	**6**
7/9/2014	7.32	<5
8/1/2014	7.41	**15**
9/19/2014	7.12	<5
10/1/2014	7.38	<5
11/17/2014	7.66	<5
12/1/2014	7.53	<5
1/2/2015	7.93	<5
2/1/2015	7.74	<5
3/3/2015	7.59	<5
4/2/2015	7.37	<5
5/4/2015	7.68	**5**

Notes:
mg/L = milligrams per liter
s.u. = standard units
BOLD = Detection
= Exceedance of Effluent Limit

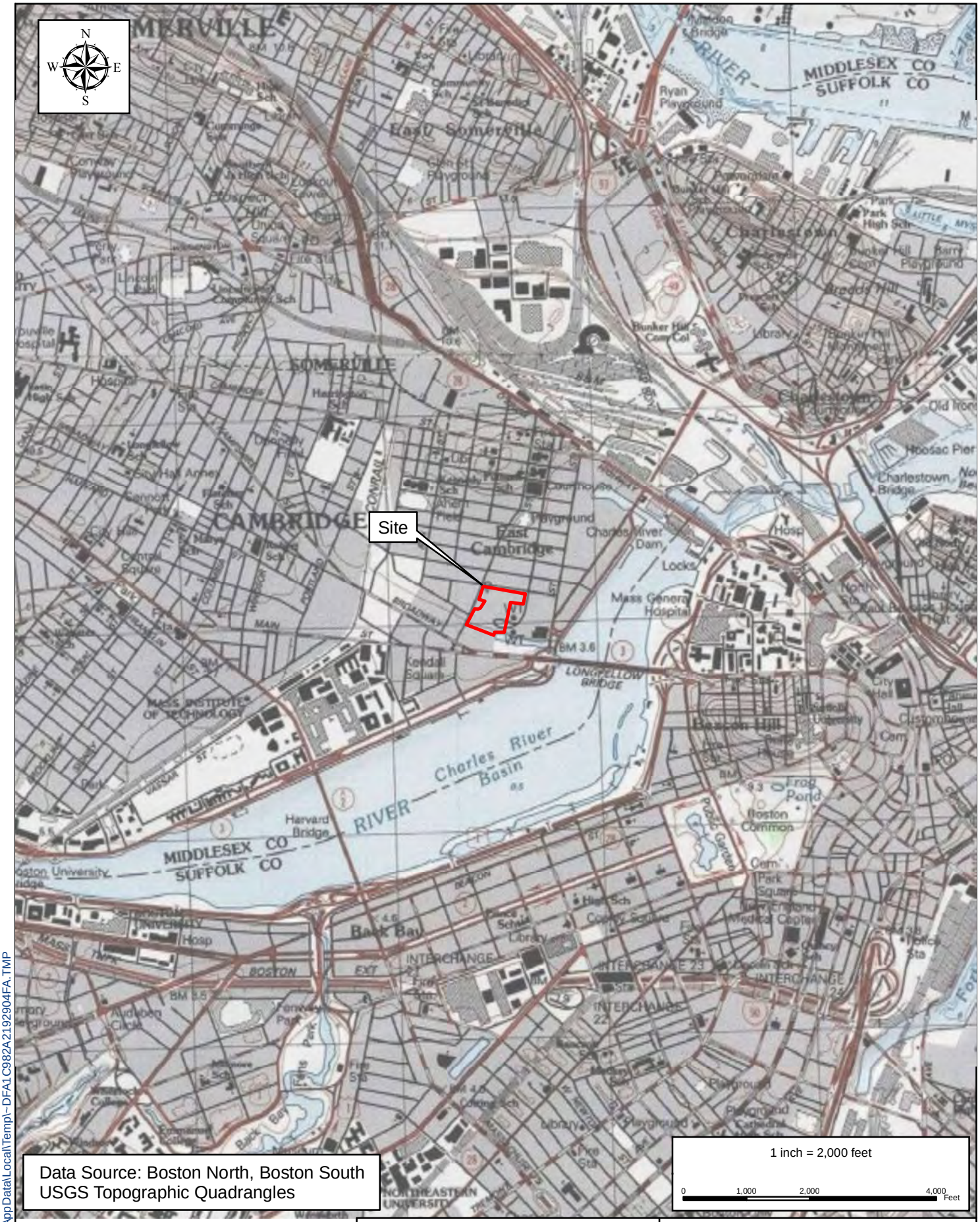
Table 2 - Summary of Effluent Data - Sampling for NOI
Notice of Intent for Coverage under the 2015 Discharge General Permit (MAG07000)
BMR-350 E Kendall F LLC - Kendall Square Garage Site
350 Kendall Street, Cambridge, MA

Parameter	Units	Effluent 5/4/2015
Chloride	mg/L	**1180**
Antimony	mg/L	**0.000956**
Arsenic	mg/L	**0.00078**
Cadmium	mg/L	<0.000250
Chromium, total	mg/L	<0.00165
Chromium VI	mg/L	<0.005
Copper	mg/L	**1.76**
Iron	mg/L	**0.356**
Lead	mg/L	**0.200**
Mercury	mg/L	<0.00020
Nickel	mg/L	**0.0113**
Silver	mg/L	<0.00025
Zinc	mg/L	**0.139**

Parameter	Units	Canal Water 5/4/2015
Hardness	mg/L CaCO3	**85.4**

Notes:
mg/L = milligrams per liter
s.u. = standard units
Detection

Figures



AECOM

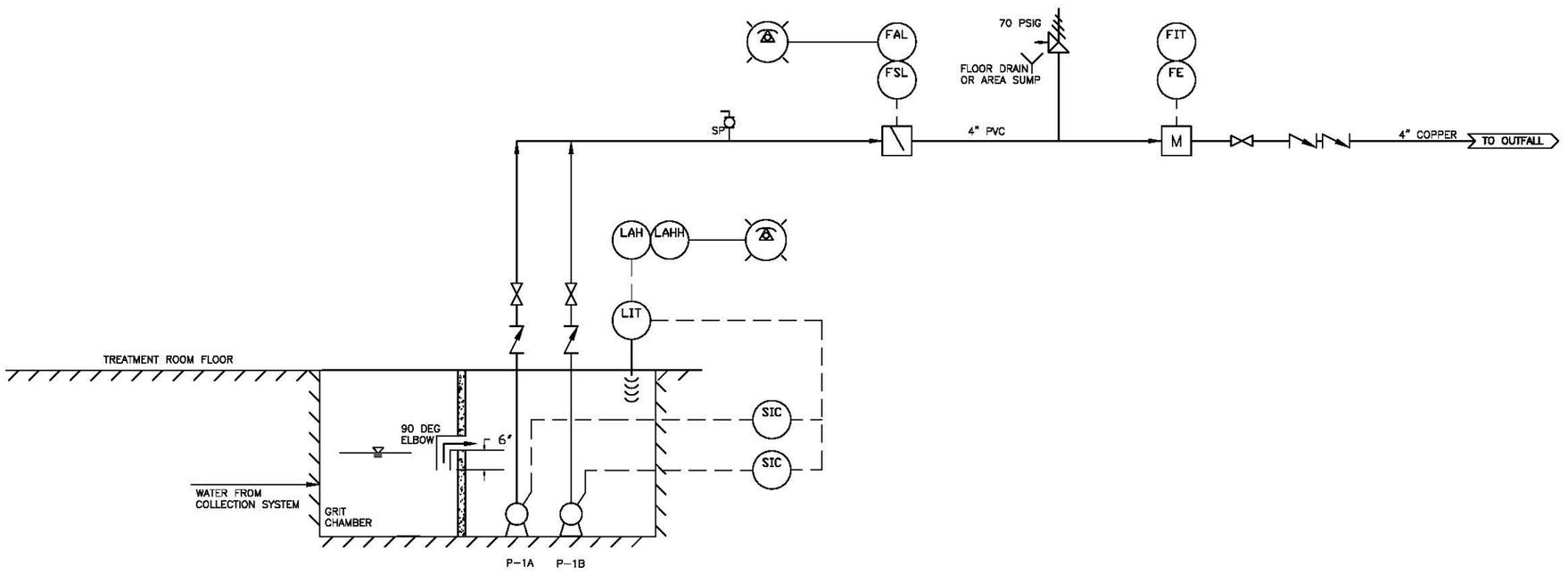
BMR-350 E Kendall F LLC
Kendall Square Garage Site
350 Kendall St., Cambridge, MA

Site Location

DATE: 12/2010 | DRWN: H.K.M. | | | Figure 1

C:\Users\mayerh\AppData\Local\Temp\~DFA1C982A2192904FA.TMP

P1A&B
SUMP PUMPS
7.5 HP
230 VAC – VFD



AECOM

NOTICE OF INTENT 350 KENDALL ST CAMBRIDGE, MA			SUMP DEWATERING PROCESS FLOW DIAGRAM
DATE: 11/22/10	DRWN: KS		FIGURE: 2

Attachment 1

Supplemental Information for Dewatering General Permit Notice of Intent

Attachment 1
Notice of Intent for Coverage under the 2015 Discharge General Permit (MAG07000)
BMR-350 E Kendall F LLC - Kendall Square Garage Site
350 Kendall Street, Cambridge, MA

2.b) Describe the discharge activities:

This Notice of Intent (NOI) is for the long-term dewatering of building sumps to prevent inundation of the building's basement by groundwater. This dewatering system is currently permitted under the Massachusetts Dewatering General Permit (DGP) under Authorization # MAG070363, issued on January 11, 2011.

Groundwater is pumped from one sump in the garage of the building at 350 Kendall Street, Cambridge, MA. The extracted groundwater flows through a grit chamber to allow settling of particulates. The extracted groundwater then discharges to a storm drain system which discharges to the Broad Canal which enters the Charles River. The grit chamber provides sufficient settling for particulate matter; however, we left the existing sand filter units in place as a backup should issues with total suspended solids (TSS) arise.

2.f) Discharge source data:

Table 1 summarizes the discharge data for pH and Total Suspended Solids (TSS) collected since June 2012.

Because this discharge consists of groundwater, an effluent sample was collected in May 2015 analyzed for the following additional parameters in order to satisfy the NOI requirements under Section 4.4.5 of the Dewatering General Permit.

Dewatering General Permit NOI Additional Parameters Analyzed in May 2015

Chloride	Iron
Antimony	Lead
Arsenic	Mercury
Cadmium	Nickle
Chromium, total	Silver
Chromium VI	Zinc
Copper	

A sample of the receiving water was also analyzed for hardness.

These results are included on Tables 1 and 2.

Attachment 2

Endangered Species Act Eligibility

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2015-SLI-0431 May 04, 2015
Event Code: 05E1NE00-2015-E-00708
Project Name: BMR Kendall Square NPDES

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: BMR Kendall Square NPDES

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
(603) 223-2541
http://www.fws.gov/newengland

Consultation Code: 05E1NE00-2015-SLI-0431
Event Code: 05E1NE00-2015-E-00708

Project Type: ** OTHER **

Project Name: BMR Kendall Square NPDES
Project Description: Renewal of coverage under the USEPA Dewatering General Permit (DGP) (MAG070000) for two buildings that perform long-term discharge from dewatering of basements. Discharge is to the Broad Canal which flows to the Cambridge River. We are completing the NOIs for continuing coverage under the DGP.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-71.0837396979332 42.363427374912796, -71.0830208659172 42.364418289914916, -71.08012408018112 42.36402985309656, -71.08056396245956 42.36242058926453, -71.08203381299973 42.362785253646265, -71.0837396979332 42.363427374912796)))

Project Counties: Middlesex, MA

Endangered Species Act Species List

There are a total of 0 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Attachment 3

Historic Preservation Determination

Attachment 3
Notice of Intent for Coverage under the 2015 Discharge General Permit (MAG07000)
BMR-350 E Kendall F LLC - Kendall Square Garage Site
350 Kendall Street, Cambridge, MA

5. National Historic Preservation Act

This page documents the National Historic Preservation Act requirements for the Notice of Intent for coverage under the 2015 Dewatering General Permit (DGP) for the BMR-350 E Kendall F LLC - Kendall Square Garage Site located at 350 Kendall Street, Cambridge, MA.

Per Appendix III of the 2015 DGP, the answer to Question 1 is yes. The facility is an existing facility authorized by the previous permit and does include any planned activities that involve subsurface land disturbance.

On this basis, per Appendix III of the 2015 DGP, the project has “no potential to cause effects” to historical resources.

Attachment 4

Laboratory Reports

Report Date:
19-May-15 12:43

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.

Laboratory Report

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Neeraj Ghai

Project: BMR Parking Garage - Cambridge, MA
Project #: 60221068-101A

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC06922-01	SYS Effluent	Ground Water	04-May-15 07:20	04-May-15 16:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 10 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Analyses for Total Hardness, pH, and Total Residual Chlorine fall under the state of Pennsylvania code Chapter 252.6 accreditation by rule.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

EPA 300.0

Samples:

SC06922-01 *SYS Effluent*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Chloride

SW846 6020A

Laboratory Control Samples:

1509107 BS/BSD

Cadmium percent recoveries (83/87) are outside individual acceptance criteria (85-115), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

SYS Effluent

Spikes:

1509107-MS1 *Source: SC06922-01*

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Copper

The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.

Lead

1509107-MSD1 *Source: SC06922-01*

The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.

Copper

The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.

Nickel

Duplicates:

1509107-DUP1 *Source: SC06922-01*

SW846 6020A

Duplicates:

1509107-DUP1 *Source: SC06922-01*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Arsenic

MRL raised to correlate to batch QC reporting limits.

Chromium
Zinc

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Copper
Lead
Zinc

Samples:

SC06922-01 *SYS Effluent*

MRL raised to correlate to batch QC reporting limits.

Chromium
Zinc

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Copper
Lead
Zinc

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	BMR Parking Garage - Cambridge, MA / 60221068-101A
Work Order:	SC06922
Sample(s) received on:	5/4/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SYS Effluent SC06922-01	60221068-101A	Ground Water	04-May-15 07:20	04-May-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Total Metals by EPA 200/6000 Series Methods													
	Preservation	**Field Preserved**		N/A			1	EPA 200/6000 methods			LNB	1508884	
Total Metals by EPA 6000/7000 Series Methods													
7440-22-4	Silver	< 0.00025		mg/l	0.00025	0.00003	1	SW846 6020A	13-May-15	15-May-15	edt	1509107	
7440-38-2	Arsenic	**0.00078**		mg/l	0.00025	0.00010	1	"	"	"	"	"	
7440-43-9	Cadmium	< 0.000250		mg/l	0.000250	0.000015	1	"	"	"	"	"	
7440-47-3	Chromium	< 0.00165	R06	mg/l	0.00165	0.00004	1	"	"	"	"	"	
7440-50-8	Copper	**1.76**	D, GS1	mg/l	0.0125	0.00135	50	"	"	18-May-15	"	"	
7439-89-6	Iron	**0.356**		mg/l	0.0300	0.0163	1	SW846 6010C	"	14-May-15	edt	1509108	
7440-02-0	Nickel	**0.0113**		mg/l	0.00025	0.00003	1	SW846 6020A	"	15-May-15	edt	1509107	
7439-92-1	Lead	**0.200**	D, GS1	mg/l	0.00250	0.00008	10	"	"	15-May-15	"	"	
7440-36-0	Antimony	**0.000956**		mg/l	0.000250	0.000055	1	"	"	15-May-15	"	"	
7440-66-6	Zinc	**0.139**	D, GS1, R06	mg/l	0.0485	0.00300	10	"	"	15-May-15	"	"	
Total Metals by EPA 200 Series Methods													
7439-97-6	Mercury	< 0.00020		mg/l	0.00020	0.00009	1	EPA 245.1/7470A	13-May-15	18-May-15	YR	1509109	X
General Chemistry Parameters													
16887-00-6	Chloride	**1,180**	D, GS1	mg/l	50.0	16.0	50	EPA 300.0	12-May-15	13-May-15	DJB	1509270	X
18540-29-9	Hexavalent Chromium	< 0.005		mg/l	0.005	0.002	1	SM3500-Cr-B/7196A	04-May-15 17:50	04-May-15 17:58	CAA/T	1508612	
	pH	**7.68**	pH	pH Units			1	ASTM D 1293-99B	04-May-15 17:48	12-May-15 18:42	TN	1508611	X
	Total Suspended Solids	**5.0**		mg/l	5.0	2.8	1	SM2540D	05-May-15	06-May-15	CMB	1508648	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1509107 - SW846 3005A										
Blank (1509107-BLK1)					Prepared: 13-May-15 Analyzed: 15-May-15					
Zinc	< 0.00485		mg/l	0.00485						
Copper	< 0.00025		mg/l	0.00025						
Antimony	< 0.000250		mg/l	0.000250						
Lead	< 0.00025		mg/l	0.00025						
Nickel	< 0.00025		mg/l	0.00025						
Chromium	< 0.00165		mg/l	0.00165						
Cadmium	< 0.000250		mg/l	0.000250						
Arsenic	< 0.00025		mg/l	0.00025						
Silver	< 0.00025		mg/l	0.00025						
LCS (1509107-BS1)					Prepared: 13-May-15 Analyzed: 15-May-15					
Cadmium	**0.0415**	QM9	mg/l	0.000250	0.0500		83	85-115		
Zinc	**0.0449**		mg/l	0.00485	0.0500		90	85-115		
Arsenic	**0.0461**		mg/l	0.00025	0.0500		92	85-115		
Antimony	**0.0462**		mg/l	0.000250	0.0500		92	85-115		
Lead	**0.0474**		mg/l	0.00025	0.0500		95	85-115		
Nickel	**0.0434**		mg/l	0.00025	0.0500		87	85-115		
Silver	**0.0443**		mg/l	0.00025	0.0500		89	85-115		
Chromium	**0.0459**		mg/l	0.00165	0.0500		92	85-115		
Copper	**0.0469**		mg/l	0.00025	0.0500		94	85-115		
LCS Dup (1509107-BSD1)					Prepared: 13-May-15 Analyzed: 15-May-15					
Nickel	**0.0443**		mg/l	0.00025	0.0500		89	85-115	2	20
Arsenic	**0.0471**		mg/l	0.00025	0.0500		94	85-115	2	20
Copper	**0.0549**		mg/l	0.00025	0.0500		110	85-115	16	20
Zinc	**0.0507**		mg/l	0.00485	0.0500		101	85-115	12	20
Silver	**0.0465**		mg/l	0.00025	0.0500		93	85-115	5	20
Lead	**0.0488**		mg/l	0.00025	0.0500		98	85-115	3	20
Chromium	**0.0475**		mg/l	0.00165	0.0500		95	85-115	3	20
Cadmium	**0.0433**		mg/l	0.000250	0.0500		87	85-115	4	20
Antimony	**0.0477**		mg/l	0.000250	0.0500		95	85-115	3	20
Duplicate (1509107-DUP1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 15-May-15				
Lead	**0.198**	GS1, D	mg/l	0.00250		0.200			0.9	20
Antimony	**0.000886**		mg/l	0.000250		0.000956			8	20
Nickel	**0.0115**		mg/l	0.00025		0.0113			2	20
Chromium	**0.00159**	J,R06	mg/l	0.00165		0.00157			1	20
Cadmium	**0.000073**	J	mg/l	0.000250		0.000088			18	20
Arsenic	**0.00052**	QR8	mg/l	0.00025		0.00078			39	20
Silver	**0.00009**	J	mg/l	0.00025		0.00011			17	20
Copper	**1.68**	GS1, D	mg/l	0.0125		1.76			5	20
Zinc	**0.133**	GS1, R06, D	mg/l	0.0485		0.139			5	20
Matrix Spike (1509107-MS1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 15-May-15				
Arsenic	**0.0496**		mg/l	0.00025	0.0500	0.00078	98	75-125		
Cadmium	**0.0439**		mg/l	0.000250	0.0500	0.000088	88	75-125		
Chromium	**0.0450**		mg/l	0.00165	0.0500	0.00157	87	75-125		
Nickel	**0.0511**		mg/l	0.00025	0.0500	0.0113	80	75-125		
Antimony	**0.0530**		mg/l	0.000250	0.0500	0.000956	104	75-125		
Lead	**0.267**	QM8, D	mg/l	0.00250	0.0500	0.200	135	75-125		
Zinc	**0.189**	D	mg/l	0.0485	0.0500	0.139	99	75-125		
Copper	**1.85**	QM2, D	mg/l	0.0125	0.0500	1.76	177	75-125		
Silver	**0.0448**		mg/l	0.00025	0.0500	0.00011	89	75-125		
Matrix Spike Dup (1509107-MSD1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 15-May-15				
Silver	**0.0418**		mg/l	0.00025	0.0500	0.00011	83	75-125	7	20

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1509107 - SW846 3005A										
Matrix Spike Dup (1509107-MSD1)			**Source: SC06922-01**			Prepared: 13-May-15		Analyzed: 18-May-15		
Copper	**1.74**	QM2, D	mg/l	0.0125	0.0500	1.76	-28	75-125	6	20
Zinc	**0.182**	D	mg/l	0.0485	0.0500	0.139	84	75-125	4	20
Lead	**0.252**	D	mg/l	0.00250	0.0500	0.200	105	75-125	6	20
Antimony	**0.0493**		mg/l	0.000250	0.0500	0.000956	97	75-125	7	20
Nickel	**0.0483**	QM8	mg/l	0.00025	0.0500	0.0113	74	75-125	6	20
Chromium	**0.0425**		mg/l	0.00165	0.0500	0.00157	82	75-125	6	20
Cadmium	**0.0408**		mg/l	0.000250	0.0500	0.000088	81	75-125	7	20
Arsenic	**0.0465**		mg/l	0.00025	0.0500	0.00078	91	75-125	7	20
Post Spike (1509107-PS1)			**Source: SC06922-01**			Prepared: 13-May-15		Analyzed: 15-May-15		
Nickel	**0.0495**		mg/l	0.00025	0.0500	0.0113	77	75-125		
Lead	**0.254**	D	mg/l	0.00250	0.0500	0.200	109	75-125		
Antimony	**0.0490**		mg/l	0.000250	0.0500	0.000956	96	75-125		
Zinc	**0.183**	D	mg/l	0.0485	0.0500	0.139	87	75-125		
Cadmium	**0.0416**		mg/l	0.000250	0.0500	0.000088	83	75-125		
Arsenic	**0.0473**		mg/l	0.00025	0.0500	0.00078	93	75-125		
Silver	**0.0423**		mg/l	0.00025	0.0500	0.00011	84	75-125		
Copper	**1.81**	D	mg/l	0.0125	0.0500	1.76	102	75-125		
Chromium	**0.0439**		mg/l	0.00165	0.0500	0.00157	85	85-120		
Batch 1509108 - SW846 3005A										
Blank (1509108-BLK1)						Prepared: 13-May-15		Analyzed: 14-May-15		
Iron	< 0.0300		mg/l	0.0300						
LCS (1509108-BS1)						Prepared: 13-May-15		Analyzed: 14-May-15		
Iron	**2.59**		mg/l	0.0300	2.50		104	85-115		
LCS Dup (1509108-BSD1)						Prepared: 13-May-15		Analyzed: 14-May-15		
Iron	**2.66**		mg/l	0.0300	2.50		106	85-115	3	20

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1509109 - EPA200/SW7000 Series										
Blank (1509109-BLK1)						Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	< 0.00020		mg/l	0.00020						
LCS (1509109-BS1)						Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	**0.00440**		mg/l	0.00020	0.00500		88	85-115		
Duplicate (1509109-DUP1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	< 0.00020		mg/l	0.00020		BRL				20
Matrix Spike (1509109-MS1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	**0.00533**		mg/l	0.00020	0.00500	BRL	107	80-120		
Matrix Spike Dup (1509109-MSD1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	**0.00540**		mg/l	0.00020	0.00500	BRL	108	80-120	1	20
Post Spike (1509109-PS1)			**Source: SC06922-01**			Prepared: 13-May-15 Analyzed: 18-May-15				
Mercury	**0.00540**		mg/l	0.00020	0.00500	BRL	108	85-115		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1508611 - General Preparation										
Reference (1508611-SRM1)						Prepared: 04-May-15 Analyzed: 12-May-15				
pH	**6.00**		pH Units		6.00		100	97.5-102.5		
Reference (1508611-SRM2)						Prepared: 04-May-15 Analyzed: 12-May-15				
pH	**6.02**		pH Units		6.00		100	97.5-102.5		
Batch 1508612 - General Preparation										
Blank (1508612-BLK1)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	< 0.005		mg/l	0.005						
LCS (1508612-BS1)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.054**		mg/l	0.005	0.0500		108	90-111		
Calibration Blank (1508612-CCB1)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**-0.0006**		mg/l							
Calibration Blank (1508612-CCB2)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**-0.0005**		mg/l							
Calibration Check (1508612-CCV1)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.054**		mg/l	0.005	0.0500		108	90-110		
Calibration Check (1508612-CCV2)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.054**		mg/l	0.005	0.0500		107	90-110		
Duplicate (1508612-DUP1)			**Source: SC06922-01**			Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.002**	J	mg/l	0.005		BRL				20
Matrix Spike (1508612-MS1)			**Source: SC06922-01**			Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.047**		mg/l	0.005	0.0500	BRL	95	85-115		
Matrix Spike Dup (1508612-MSD1)			**Source: SC06922-01**			Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.047**		mg/l	0.005	0.0500	BRL	95	85-115	0	20
Reference (1508612-SRM1)						Prepared & Analyzed: 04-May-15				
Hexavalent Chromium	**0.023**		mg/l	0.005	0.0250		92	85-115		
Batch 1508648 - General Preparation										
Blank (1508648-BLK1)						Prepared: 05-May-15 Analyzed: 06-May-15				
Total Suspended Solids	< 5.0		mg/l	5.0						
LCS (1508648-BS1)						Prepared: 05-May-15 Analyzed: 06-May-15				
Total Suspended Solids	**90.0**		mg/l	50.0	100		90	90-110		
Duplicate (1508648-DUP1)			**Source: SC06922-01**			Prepared: 05-May-15 Analyzed: 06-May-15				
Total Suspended Solids	**5.0**		mg/l	5.0		5.0			0	5
Batch 1509270 - General Preparation										
Blank (1509270-BLK1)						Prepared: 12-May-15 Analyzed: 13-May-15				
Chloride	< 1.00		mg/l	1.00						
LCS (1509270-BS1)						Prepared: 12-May-15 Analyzed: 13-May-15				
Chloride	**20.5**		mg/l	1.00	20.0		103	90-110		
Reference (1509270-SRM1)						Prepared: 12-May-15 Analyzed: 13-May-15				
Chloride	**26.3**		mg/l	1.00	25.0		105	90-110		

Notes and Definitions

D	Data reported from a dilution
GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
QM2	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM8	The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
R06	MRL raised to correlate to batch QC reporting limits.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Nicole Leja
Rebecca Merz

SC06922 By ✓

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☑ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Neeraj Ghai
Chelmsford MA 01824

Telephone #: 978-905-2100
Project Mgr: Neeraj Ghai

Invoice To: AECOM
250 Apollo Drive
Chelmsford MA 01824

P.O No.: _____ Quote/RQN: _____

Project No: 60322068-101A
Site Name: BMR Parking Garage
Location: Cambridge State: MA
Sampler(s): Eddie Zygarowski

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Chloride, TSS, pH	Metals 6020 Total Mercury	Hexavalent Chromium						Check if chlorinated
										List Preservative Code below:								
										✓	4	4	4					
SC06922-01	Sys. Effluent	5/4/15	7:20	G	GW				2	✓	✓	✓	✓					☐
																		☐
																		☐
																		☐
																		☐
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																		☐
																		☐
																		☐
																		☐

Containers / Analysis

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☑ Standard ☐ No QC
☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

Standard TAT

Relinquished by:	Received by:	Date:	Time:	Temp °C
Eddie Zygarowski	[signature]	5/4/15	12:35PM	Observed 1.5
[signature]	[signature]	5/4/15	1645	Correction Factor 0
				Corrected 1.5
				IR ID # 01

☑ EDD format: EQuIS
☑ E-mail to: jennifer.atkins@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☑ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC06922 By ✓

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☑ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Neeraj Ghai
Chelmsford MA 01824

Telephone #: 978-905-2100
Project Mgr: Neeraj Ghai

Invoice To: AECOM
250 Apollo Drive
Chelmsford MA 01824

P.O No.: _____ Quote/RQN: _____

Project No: 60221068-101A
Site Name: BMR Parking Garage
Location: Cambridge State: MA
Sampler(s): Eddie Zygarowski

F=Field Filtered **1**=Na_2S2O_3 **2**=HCl **3**=H_2SO_4 **4**=HNO_3 **5**=NaOH **6**=Ascorbic Acid
7=CH3OH **8**=$NaHSO_4$ **9**=Deionized Water **10**=H_3PO_4 **11**=_____ **12**=_____

DW=Dinking Water **GW**=Groundwater **SW**=Surface Water **WW**=Waste Water
O=Oil **SO**=Soil **SL**=Sludge **A**=Indoor/Ambient Air **SG**=Soil Gas
X1=_____ **X2**=_____ **X3**=_____

G= Grab **C**=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Chloride TSS, pH	Metals 6010C Total Mercury *	Hexavalent Chromium						Check if chlorinated
						Containers				**List Preservative Code below:**								
										1	4	4	4					
										Analysis								
SC06922-01	Sys. Effluent	5/4/15	7:20	G	GW				2	✓	✓	✓	✓					☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐
																		☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☑ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

Standard TAT

* Ag, As, Cd, Cr, Cu, Ni, Pb, Sb, Zn + Fe by 6010. EM 5/5

Relinquished by:	Received by:	Date:	Time:	Temp °C
Eddie Zygarowski	[signature]	5/4/15	12:55PM	Observed 1.5
[signature]	[signature]	5/4/15	1645	Correction Factor 0
				Corrected 1.5
				IR ID # 01

☑ EDD format: EQuIS
☑ E-mail to: jennifer.atkins@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☑ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Report Date:
18-May-15 09:40

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.

Laboratory Report

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Neeraj Ghai

Project: Cambridge Canal - Cambridge, MA
Project #: 60221068-101A

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC07004-01	Canal	Ground Water	04-May-15 09:15	04-May-15 16:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 6 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Analyses for Total Hardness, pH, and Total Residual Chlorine fall under the state of Pennsylvania code Chapter 252.6 accreditation by rule.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	Cambridge Canal - Cambridge, MA / 60221068-101A
Work Order:	SC07004
Sample(s) received on:	5/4/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Canal SC07004-01	60221068-101A	Ground Water	04-May-15 09:15	04-May-15

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Total Metals by EPA 200/6000 Series Methods													
	Preservation	**Field Preserved**		N/A			1	EPA 200/6000 methods			LNB	1508884	
Total Metals by EPA 6000/7000 Series Methods													
7440-70-2	Calcium	**24.3**		mg/l	0.200	0.0469	1	SW846 6010C	13-May-15	14-May-15	edt	1509108	
7439-95-4	Magnesium	**6.03**		mg/l	0.0200	0.0031	1	"	"	"	"	"	
General Chemistry Parameters													
	Hardness	**85.4**	HD	mg/l CaCO3	0.582	0.130	1	SM 2340B	13-May-15	14-May-15	edt	[CALC]	

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1509108 - SW846 3005A										
Blank (1509108-BLK1)					Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	< 0.0200		mg/l	0.0200						
Calcium	< 0.200		mg/l	0.200						
LCS (1509108-BS1)					Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	**2.61**		mg/l	0.0200	2.50		104	85-115		
Calcium	**14.0**		mg/l	0.200	12.5		112	85-115		
LCS Dup (1509108-BSD1)					Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	**2.67**		mg/l	0.0200	2.50		107	85-115	2	20
Calcium	**13.9**		mg/l	0.200	12.5		111	85-115	0.6	20
Duplicate (1509108-DUP1)			**Source: SC07004-01**		Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	**5.94**		mg/l	0.0200		6.03			1	20
Calcium	**23.6**		mg/l	0.200		24.3			3	20
Matrix Spike (1509108-MS1)			**Source: SC07004-01**		Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	**8.20**		mg/l	0.0200	2.50	6.03	87	75-125		
Calcium	**35.5**		mg/l	0.200	12.5	24.3	90	75-125		
Matrix Spike Dup (1509108-MSD1)			**Source: SC07004-01**		Prepared: 13-May-15 Analyzed: 14-May-15					
Magnesium	**8.81**		mg/l	0.0200	2.50	6.03	111	75-125	7	20
Calcium	**38.9**		mg/l	0.200	12.5	24.3	117	75-125	9	20
Post Spike (1509108-PS1)			**Source: SC07004-01**		Prepared: 13-May-15 Analyzed: 15-May-15					
Magnesium	**9.03**		mg/l	0.0200	2.50	6.03	120	80-120		
Calcium	**39.0**		mg/l	0.200	12.5	24.3	118	80-120		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
HD	Total Hardness is a calculation based on the reported values of Ca and Mg.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor

SC07004-JUN

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 2

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Neeraj Ghai
Chelmsford MA 01824

Telephone #: 978-905-2100
Project Mgr: Neeraj Ghai

Invoice To: AECOM
250 Apollo Dr.
Chelmsford MA 01824

P.O No.: _____ Quote/RQN: _____

Project No: 60221068-101A
Site Name: Cambridge Canal
Location: Cambridge State: MA
Sampler(s): Eddie Zygarowski

F=Field Filtered **1**=Na_2S2O_3 **2**=HCl **3**=H_2SO_4 **4**=HNO_3 **5**=NaOH **6**=Ascorbic Acid
7=CH3OH **8**=$NaHSO_4$ **9**=Deionized Water **10**=H_3PO_4 **11**= _____ **12**= _____

DW=Dinking Water **GW**=Groundwater **SW**=Surface Water **WW**=Waste Water
O=Oil **SO**=Soil **SL**=Sludge **A**=Indoor/Ambient Air **SG**=Soil Gas
X1= _____ **X2**= _____ **X3**= _____

G= Grab **C**=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List Preservative Code below: 4	Analysis: hardness	Check if chlorinated
SC07004-01	Canal	5/4/15	9:15	G	GW				2	V		☐
												☐
												☐
												☐
												☐
												☐
												☐
												☐
												☐
												☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
- [x] Standard
- [ ] No QC
- [ ] DQA*
- [ ] ASP A*
- [ ] ASP B*
- [ ] NJ Reduced*
- [ ] NJ Full*
- [ ] Tier II*
- [ ] Tier IV*
- [ ] Other: _____

State-specific reporting standards:

Standard TAT

Relinquished by:	Received by:	Date:	Time:
Eddie Zygarowski	[signature]	5/4/15	12:55PM
[signature]	[signature]	5/4/15	1645

Temp °C: Observed 1.5; Correction Factor 0; Corrected 1.5; IR ID # 3

- [x] EDD format: EQuIS
- [x] E-mail to: jennifer.atkins@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☑ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen