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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

DEC 10 2014

Elio DiBiase
Project Manager
Bond Brothers
145 Spring Street
Everett, MA 02149

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. University of Massachusetts, Boston site located at 100 Morrissey Blvd. Boston, MA 02125, Suffolk County; Authorization # MAG910649

Dear Mr. DiBiase:

Based on the review of a Notice of Intent (NOI) submitted by Russell Parkman from GeoEnvironmental, Inc., on behalf of University of Massachusetts, 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 parameters your consultant has marked "Believed Present". The checklist also includes tertiary-butyl alcohol (TBA), a parameters for which your laboratory reports indicated there was insufficient sensitivity to detect it at the minimum levels established in Appendix VI of the RGP.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. With the absence of dilution of freshwater into tidal water, EPA determined that the Dilution Factor Range (DFR) for each parameter for this site is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities).

Therefore, the limits for cadmium of 8.9 ug/L, copper of 3.7ug/L, lead of 8.5 ug/L, zinc of 85.6 ug/L and iron of 1,000 ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site 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 EPA general permit and authorization to discharge will expire on September 9, 2015. You have reported this project will terminate on March 31, 2017. Please be aware you are required to reapply for coverage after the EPA expired permit has been reissued. The reissuance date will be posted on the RGP website and the reapplication submittal date will be also posted at that time. Also, regardless of your project termination date 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
Stephen Shea, BWSC
Russell Parkman, GZA GioEnvironmental, Inc.

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910649**
Authorization Issued:	December, 2015
Facility/Site Name:	The University Of Massachusetts, Boston
Facility/Site Address:	100 Morrissey Blvd. Boston Mass 02125, Suffolk County
	Email address of owner: zerhr@umb.edu
Legal Name of Operator:	Bond Brothers
Operator contact name, title, and Address:	Elio DiBiase, Project Manager, 145 Spring Street, Everett, MA 02149
	Email: edibiase@bondbrothers.com
Estimated date of the site's Completion:	March 31, 2017
Category and Sub-Category:	Contaminated Construction Dewatering. Subcategory A. General Urban Fill Sites
RGP Termination Date:	September 9, 2015
Receiving Water:	Boston Harbor (Dorchester Bay/ Savin/Hill)

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

• Parameter• Effluent Limit/Method#/ML

	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 Parameters	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [11/12]	Saltwater Limits	Minimum level=ML	
	39. Antimony	5.6		ML	10
	40. Arsenic **		36	ML	20
√	41. Cadmium **		8.9	ML	10
	42. Chromium III (trivalent) **		100	ML	15
	43. Chromium VI (hexavalent) **		50.3	ML	10
√	44. Copper **		3.7	ML	15
√	45. Lead **		8.5	ML	20
	46. Mercury **		1.1	ML	02
	47. Nickel **		8.2	ML	20
	48. Selenium **		71	ML	20
	49. Silver		2.2	ML	10
√	50. Zinc **		85.6	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

GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

November 26, 2014
File No. 03.0033930.02

Mr. Victor Alvarez
United States Environmental Protection Agency – Region 1
5 Post Office Square, Mail Code OEP06-4
Boston, Massachusetts, 02109-3912

Re: Submittal of Notice of Intent (NOI)
Remedial General Permit
University of Massachusetts
100 Morrissey Boulevard
Boston, MA

249 Vanderbilt Avenue
Norwood
Massachusetts
02062
781-278-3700
FAX 781-278-5701
http://www.gza.com

Dear Mr. Alvarez:

On behalf of the University of Massachusetts (Owner) and Bond Bothers Inc. (Construction Manager; Operator), GZA GeoEnvironmental, Inc. (GZA) is submitting the attached Notice of Intent (NOI) form (Attachment 1) for the Remedial General Permit (RGP) for the Utility Corridor and Roadway Relocation (UCRR) Project.

BACKGROUND

The UCRR Project consists of the reconfiguration of roadways and utilities in accordance with the campus master plan. The site is located on a peninsula (Columbia Point) that extends into Dorchester Bay to the north of Savin Hill Cove. A site locus plan is included as Figure 1 (Attachment 2), and a site plan is shown on Figure 2 (Attachment 3). Historically, the site was a municipal landfill. Additionally, a manufactured gas plant (MGP) was constructed in what is today the western portion of the campus and was in operation from the late 1880s to the 1930s. The landfill was closed in 1971 and the UMASS campus was constructed in the early 1970's.

It is anticipated that construction dewatering will be required to control groundwater during excavations for utility installation. It is expected that groundwater pumped from the construction site will be infiltrated into the ground water via infiltration pits. In the event that the pits do not provide adequate recharge, the collected groundwater will be discharged into storm drains that discharge to either Dorchester Bay or Savin Hill Cove. There are eight possible discharge points (Outfall Numbers 1 through 8) shown in Figure 2 (Attachment 3).

The dewatering will be accomplished using submersible pumps and lined sump pits which will discharge to a 5,000 gallon sedimentation tank for sediment removal. If additional storage in needed, a second 10,000 gallon sedimentation tank will be installed in series. In addition to the sedimentation tank(s), water will be pumped through a bag filter system and a 1,000 lb liquid phase granular activated carbon (LGAC) unit prior to discharge to the storm drains. A flow meter and sample ports will also be installed to allow monitoring of water quality. The tank will be cleaned out when accumulated

sediments reach 1 foot depth. The bag filters will be changed out regularly to maintain flow and acceptable head loss. Bag filters will be installed in parallel to accommodate continuous filtering while filters are being changed out. A process flow diagram is included in Figure 3 (Attachment 4).

NOTICE OF INTENT

Preparation of this NOI included a literature review pertaining to Areas of Critical Environmental Concern (ACEC), Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA), as documented below:

- Review of Appendix I "Areas of Critical Environmental Concern" (June 2009) found that the Site does not discharge to an ACEC.
- Review of Appendix II "Federally Listed Endangered and Threatened Species in Massachusetts" (July 2008) found that there are no listed species in the neighborhood of Dorchester in the City of Boston, Massachusetts.
- Review of the Massachusetts Geographic Information Systems (MassGIS) DEP Priority Resources Map of Dorchester shows that there are no ACECs and no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site (Attachment 4). Therefore, permit eligibility meets "Criterion A." As shown on the map generated by the MassGIS online viewer, which can be found in Attachment 6, no ACECs or Estimated Habitats of Rare Wildlife areas are located within a half mile of the discharge location.
- Review of Appendix VII "Guidance for Endangered Species Act Review & National Historic Preservation Act Review" identified no threatened or endangered species at the potential points of discharge. Additionally, the National Oceanic and Atmospheric Administration (NOAA) was contacted for information regarding oceanic fisheries and their response (Attachment 6) states that no listed species will be affected by the discharges into the Dorchester Bay or Savin Hill Cove.
- An electronic review of the Massachusetts Cultural Resource Information System database, made available through Massachusetts Historical Commission, found seven listings for historical properties. The documentation of this review can be found in Attachment 8. The water generated during remedial activities will be treated on-Site and then pumped directly into a catch basin located on-Site. The historical properties adjacent to the Site will not be affected by the discharge and, therefore, permit eligibility meets "Criterion 2."
- Laboratory analytical results containing the data shown in Part 3 of Attachment 1 are included as Attachment 8. Groundwater was sampled on October 8th 2014. Groundwater samples were collected from groundwater monitoring wells installed in borings U-6, U-9B and U-108. Refer to Figure 2 (Attachment 3) for the approximate locations of these wells. It should be noted that a few of the results were not reported to the required minimum level (ML) of the test method. However, we do not have reason to believe these parameters are present in the groundwater based on historical data. The only

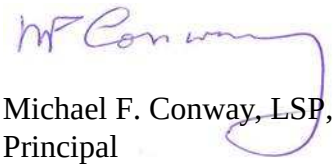
detected analytes which exceeded the effluent limits listed in Appendix III were copper, lead, zinc and iron. A dilution factor was not calculated for the discharge point because the storm drains discharge to the Bay. None of the analytes exceeded the limits set in Appendix IV.

Please do not hesitate to contact the undersigned at (781) 278-3845 if you have any questions or require further information.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Russell Parkman, P.E.
Consultant/Reviewer



Michael F. Conway, LSP, P.E.
Principal

Attachments: Attachment 1: NOI Form
Attachment 2: Figure 1 – Site Locus Map
Attachment 3: Figure 2 – Site Plan and Storm Drain Outfall Locations
Attachment 4: Figure 3 – Process Flow Diagram
Attachment 4: MassGIS DEP Priority Resources Map
Attachment 6: Correspondence with NOAA Fisheries Service
Attachment 7: MHC Report
Attachment 8: Laboratory Analytical Results

cc: MassDEP – Northeastern Region

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ATTACHMENT 1

NOI FORM

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**: University of Massachusetts Boston		**Facility/site** mailing address:			
Location of **facility/site**: longitude: 42.312 N latitude: 71.039 W	Facility SIC code(s):	Street: 100 Morrissey Blvd. Boston MA, 02125			
b) Name of **facility/site owner:**		Town: Boston			
Email address of facility/site owner: zehra@umb.edu		State: MA	Zip: 02125	County: USA	
Telephone no. of facility/site **owner**: 617-287-5444					
Fax no. of facility/site **owner**:		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private 4. Other if so, describe:			
Address of **owner** (if different from site):		University of Massachusetts Building Authority			
Street: 225 Franklin St., 12 Floor					
Town: Boston	State: MA	Zip: 02110	County:		
c) Legal name of **operator**:		**Operator** telephone no: (617) 387-3400			
Bond Brothers		**Operator** fax no.:	**Operator** emai edibiase@bondbrothers.com		
Operator contact name and title: Elio DiBiase, Project Manager					
Address of **operator** (if different from owner):	Street: 145 Spring Street				
Town: Everett	State: Ma	Zip: 02149	County: USA		

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: 006-1329
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:

construction dewatering

b) Provide the following information about each discharge:

1) Number of discharge points: 8

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 150 gpm Is maximum flow a **design value**? Y ◉ N ○
Average flow (include units) 25-50 gpm Is average flow a design value or estimate? 50 gpm

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat 42.317269 long -71.036709 pt.2: lat. 42.312507 long. -71.034123;
pt.3: lat 42.311916 long -71.034907 pt.4: lat. 42.311173 long. -71.039166;
pt.5: lat 42.311848 long -71.040284 pt.6: lat. 42.312683 long. -71.041638;
pt.7: lat 42.313408 long -71.042813 pt.8: lat. 42.313692 long. -71.043281; etc.

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

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

c) Expected dates of discharge (mm/dd/yy): start Nov 15, 2014 end Mar 31, 2017

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 Attachment 3 & Attachment 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)		☐	☑	3	Grab	2540D	5000	70000			
2. Total Residual Chlorine (TRC)		☑	☐	3	Grab	4500-Cl E	10.0	<10			
3. Total Petroleum Hydrocarbons (TPH)		☑	☐	3	Grab	1664A	5000	<5000			
4. Cyanide (CN)	57125	☑	☐	3	Grab	4500 CN CE	5.0	<5			
5. Benzene (B)	71432	☐	☑	3	Grab	8260B	1.0	1.8			
6. Toluene (T)	108883	☑	☐	3	Grab	8260B	1.0	<1.0			
7. Ethylbenzene (E)	100414	☑	☐	3	Grab	8260B	1.0	<1.0			
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☑	☐	3	Grab	8260B	2.0	<1.0			
9. Total BTEX [2]	n/a	☐	☒			CALC	2.0	1.8			
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☑	☐	3	Grab	504.1	0.015	<0.015			
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☑	☐	31	Grab	8260B	1.0	<1.0			
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☑	☐	3	Grab	8260B	25.0	<25.0			

***** 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	☒	☐	3	Grab	8260B	1.0	<1.0			
14. Naphthalene	91203	☒	☐	3	Grab	8260B	1.0	<1.0			
15. Carbon Tetrachloride	56235	☒	☐	3	Grab	8260B	1.0	<1.0			
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	3	Grab	8260B	1.0	<1.0			
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	3	Grab	8260B	1.0	<1.0			
18. 1,4 Dichlorobenzene (p-DCB)	106467	☐	☒	3	Grab	8260B	1.0	5.4			
18a. Total dichlorobenzene		☒	☐			CALC		<1.0			
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	3	Grab	8260B	1.0	<1.0			
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	3	Grab	8260B	1.0	<1.0			
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	3	Grab	8260B	1.0	<1.0			
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	3	Grab	8260B	1.0	<1.0			
23. Methylene Chloride	75092	☒	☐	3	Grab	8260B	2.0	<2.0			
24. Tetrachloroethene (PCE)	127184	☒	☐	3	Grab	8260B	1.0	<1.0			
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	3	Grab	8260B	1.0	<1.0			
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	3	Grab	8260B	1.0	<1.0			
27. Trichloroethene (TCE)	79016	☒	☐	3	Grab	8260B	1.0	<1.0			

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	☒	☐	3	Grab	8260B	1.0	<1.0			
29. Acetone	67641	☒	☐	3	Grab	8260B	10	<10			
30. 1,4 Dioxane	123911	☐	☒	3	Grab	8270D SIM	0.2	1.0			
31. Total Phenols	108952	☒	☐	3	Grab	420.1	100	<100			
32. Pentachlorophenol (PCP)	87865	☒	☐	3	Grab	8270C SIM	0.84	<0.84			
33. Total Phthalates (Phthalate esters) [4]		☒	☐	3	Grab	8270C SIM	2.34	<2.34			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	3	Grab	8270C SIM	2.34	<2.34			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								
a. Benzo(a) Anthracene	56553	☐	☒	3	Grab	8270C SIM	0.05	0.29			
b. Benzo(a) Pyrene	50328	☐	☒	3	Grab	8270C SIM	0.05	0.22			
c. Benzo(b)Fluoranthene	205992	☐	☒	3	Grab	8270C SIM	0.05	0.29			
d. Benzo(k)Fluoranthene	207089	☐	☒	3	Grab	8270C SIM	0.05	0.07			
e. Chrysene	21801	☐	☒	3	Grab	8270C SIM	0.05	0.30			
f. Dibenzo(a,h)anthracene	53703	☒	☐	3	Grab	8270C SIM	0.05	<0.05			
g. Indeno(1,2,3-cd) Pyrene	193395	☐	☒	3	Grab	8270C SIM	0.05	0.15			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☐	☒								

[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	☐	☒	3	Grab	8270C SIM	0.19	4.33			
i. Acenaphthylene	208968	☐	☒	3	Grab	8270C SIM	0.19	<0.19			
j. Anthracene	120127	☐	☒	3	Grab	8270C SIM	0.19	0.89			
k. Benzo(ghi) Perylene	191242	☐	☒	3	Grab	8270C SIM	0.19	<0.19			
l. Fluoranthene	206440	☐	☒	3	Grab	8270C SIM	0.19	2.10			
m. Fluorene	86737	☐	☒	3	Grab	8270C SIM	0.19	4.31			
n. Naphthalene	91203	☐	☒	3	Grab	8270C SIM	0.19	<0.19			
o. Phenanthrene	85018	☐	☒	3	Grab	8270C SIM	0.19	2.23			
p. Pyrene	129000	☐	☒	3	Grab	8270C SIM	0.19	1.53			
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	3	Grab	8082A	0.5	<0.5			
38. Chloride	16887006	☐	☒	3	Grab	300.0	2500	14500			
39. Antimony	7440360	☐	☐	3	Grab	6020A	2.5	<2.5			
40. Arsenic	7440382	☐	☐	3	Grab	6020A	2.5	<2.5			
41. Cadmium	7440439	☐	☒	3	Grab	6020A	0.05	0.14			
42. Chromium III (trivalent)	16065831	☒	☐	3	Grab	Calc	10	<10			
43. Chromium VI (hexavalent)	18540299	☒	☐	3	Grab	7196A	10.0	<10			
44. Copper	7440508	☐	☒	3	Grab	6020A	4.00	18.6			
45. Lead	7439921	☐	☒	3	Grab	6020A	1.0	11			
46. Mercury	7439976	☒	☐	3	Grab	7470A	0.02	<0.20			
47. Nickel	7440020	X	☐	3	Grab	6020A	5	<5			
48. Selenium	7782492	X	☒	3	Grab	6020A	5.0	<5			
49. Silver	7440224	☒	☐	3	Grab	6020A	0.2	<0.2			
50. Zinc	7440666	☐	☒	3	Grab	6010B	25	96			
51. Iron	7439896	☐	☒	3	Grab	6010B	50.0	18000			
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? Cu, Pb, Zn, Fe
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: Cu DF: NA Metal: Pb DF: NA Metal: Zn DF: NA Metal: Fe DF: NA 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: Cu, Pb, Zn, Fe

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:

Groundwater encountered during excavation and installation activities will be pumped into a treatment system prior to discharge into the storm drain. The first element of the treatment system will be a frac tank where solids will settle out. The effluent will then pass through bag filters and then a 1000-lb LGAC unit. The effluent will then be discharged through the existing storm drain system.

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):			

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 25-50 gpm Maximum flow rate of treatment system 150 gpm
Design flow rate of treatment system 50 gpm

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

None anticipated

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:

DIscharge to storm drain catch basin(s) or manhole(s), which discharge to one of 8 outfalls at Dorchester Bay or Savin Hill Cove (outfall locations shown in Att 4)

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 Class SB

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water _____ 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)?
Enterococcus, fecal coliform, TSS, PCB in fish tissue, turbidity

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.

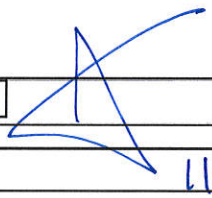
Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

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: University of Massachusetts University Boston

Operator signature:

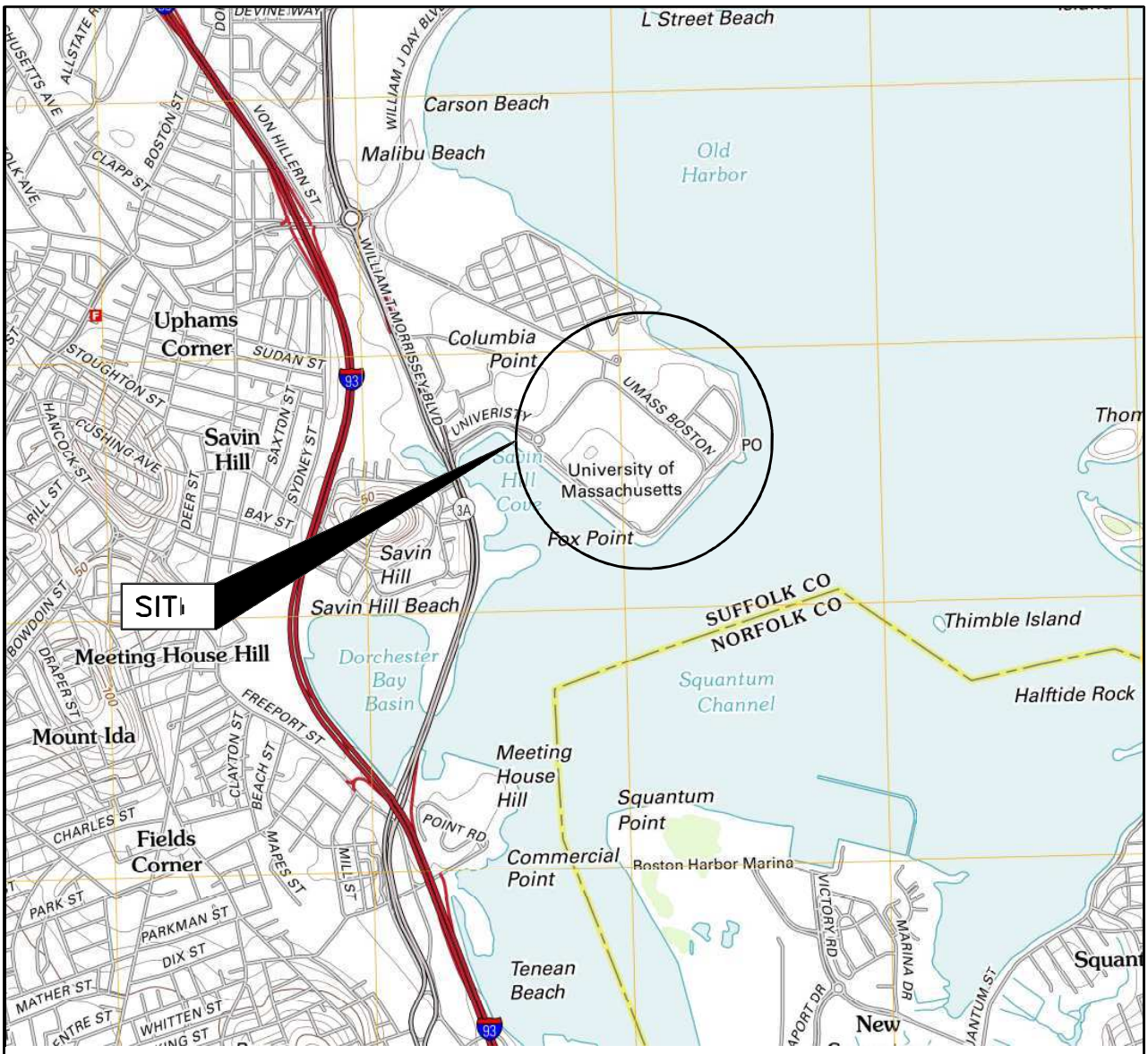


Printed Name &Title: Elio DiBiase, Project Manager

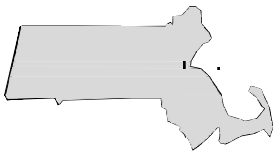
Date: 11-26-14

ATTACHMENT 2

FIGURE 1 – SITE LOCUS MAP



MASSACHUSETTS



QUADRANGLE LOCATION

SOURCE:

UMASS BOSTON UTILITY CORRIDOR AND ROADWAY
UNIVERSITY OF MASSACHUSETTS
BOSTON, MASSACHUSETTS

LOCUS MAP
NPDES RGP NOTICE OF INTENT

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

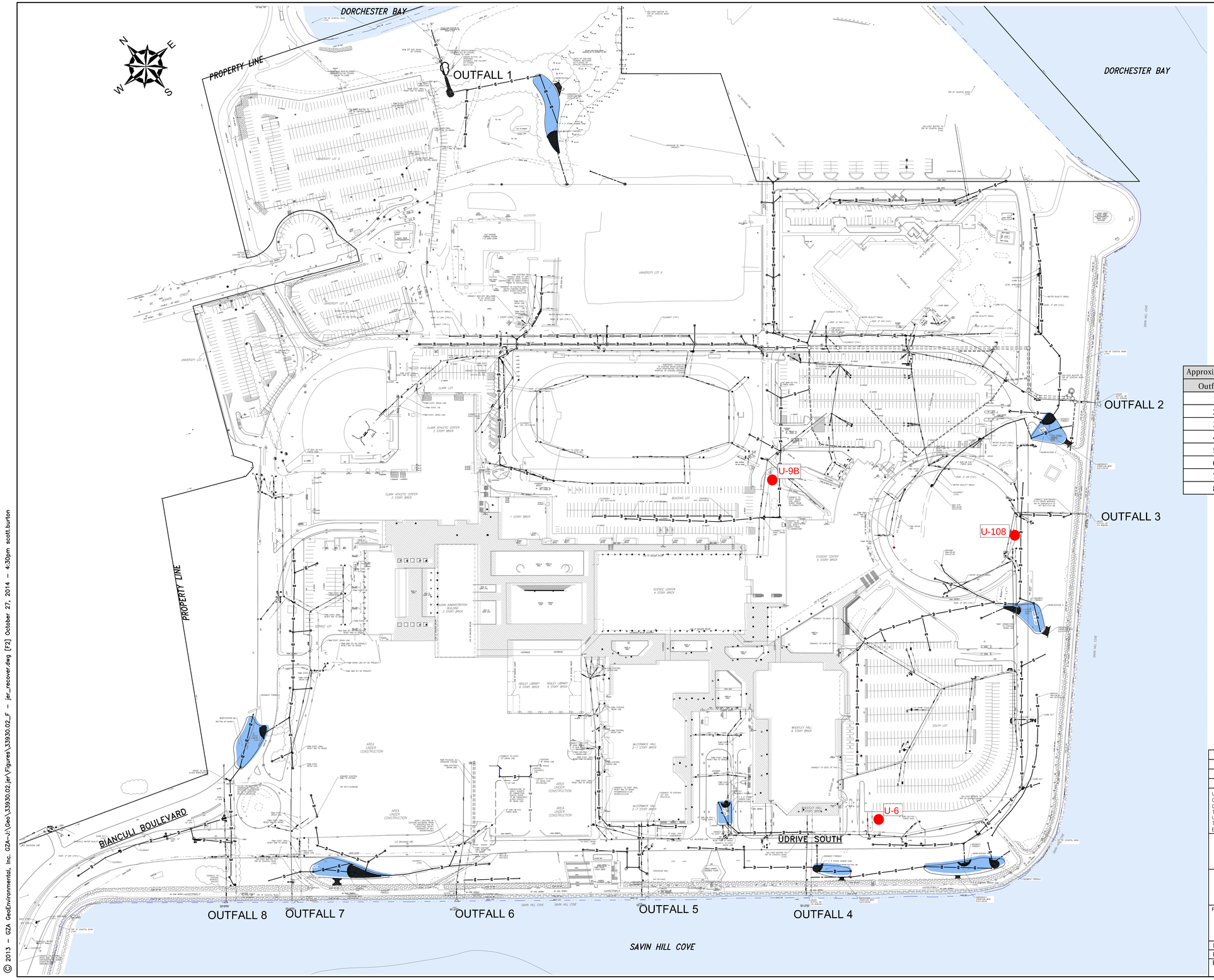
PREPARED FOR:
BVH INTEGRATED SERVICES

PROJ MGR:	JER	REVIEWED BY:	RP	CHECKED BY:	RP
DESIGNED BY:	JER	DRAWN BY:	SBB	SCALE:	1" = 2000'
DATE:	NOV. 2014	PROJECT NO.	33930.02	REVISION NO.	0

FIGURE 1
SHEET NO. 1 OF 3

ATTACHMENT 3

FIGURE 2 – SITE PLAN AND OUTFALL DISCHARGE LOCATION



GENERAL NOTES

1. BASE MAP DEVELOPED FROM AUTOCAD DRAWING FILE UCRR EXISTING AND PROPOSED STORM.DWG PREPARED BY BVH TRANSMITTED TO GZA ON 10-23-2014.

LEGEND

	PROPOSED STORM DRAIN/MANHOLE. DISCHARGE POINT UNDER THE RGP.
	EXISTING STORM DRAIN/MANHOLE. DISCHARGE POINT UNDER THE RGP.
OUTFALL 4	STORM WATER OUTFALL DESIGNATION. DISCHARGE FROM STORM DRAIN SYSTEM TO WATER BODY.
	APPROXIMATE WATER BODY LOCATION
	PROPOSED BIODETENTION AREA

Approximate Coordinates of Outfalls - Discharge from Storm Drain System to Water Body		
Outfall ID	Latitude (N)	Longitude (E)
1	42.317269	-71.036709
2	42.312507	-71.034123
3	42.311916	-71.034907
4	42.311173	-71.039166
5	42.311848	-71.040284
6	42.312683	-71.041638
7	42.313408	-71.042813
8	42.313692	-71.043281

0 60 120 240 360

1" = 120'

NO.	ISSUE/DESCRIPTION	BY	DATE

UMASS BOSTON UTILITY CORRIDOR AND ROADWAY
UNIVERSITY OF MASSACHUSETTS
BOSTON, MASSACHUSETTS

NPDES RGP NOTICE OF INTENT
SITE PLAN

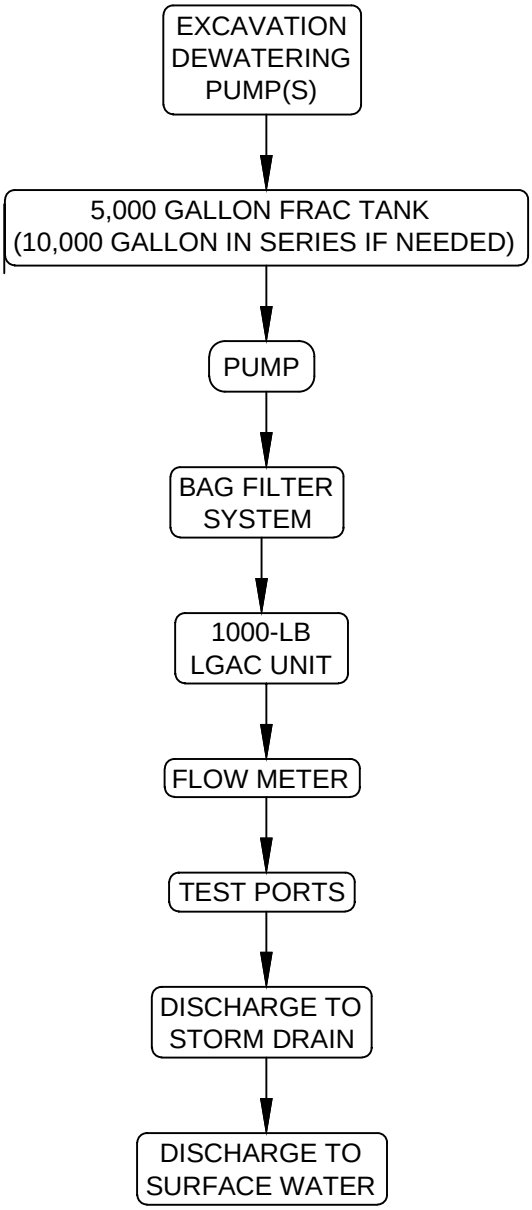
PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
BVH INTEGRATED SERVICES

PROJ MGR: JER	REVIEWED BY: RP	CHECKED BY: RP	FIGURE	
DESIGNED BY: JER	DRAWN BY: CRB	SCALE: 1"=120'	2	
DATE: OCTOBER 2014	PROJECT NO. 33930.02	REVISION NO. 0	SHEET NO. 2 OF 3	

ATTACHMENT 4

FIGURE 3 – PROCESS FLOW DIAGRAM



NO.	ISSUE/DESCRIPTION	BY	DATE

UMASS BOSTON UTILITY CORRIDOR AND ROADWAY
UNIVERSITY OF MASSACHUSETTS
BOSTON, MASSACHUSETTS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
BVH INTEGRATED SERVICE

PROCESS FLOW DIAGRAM

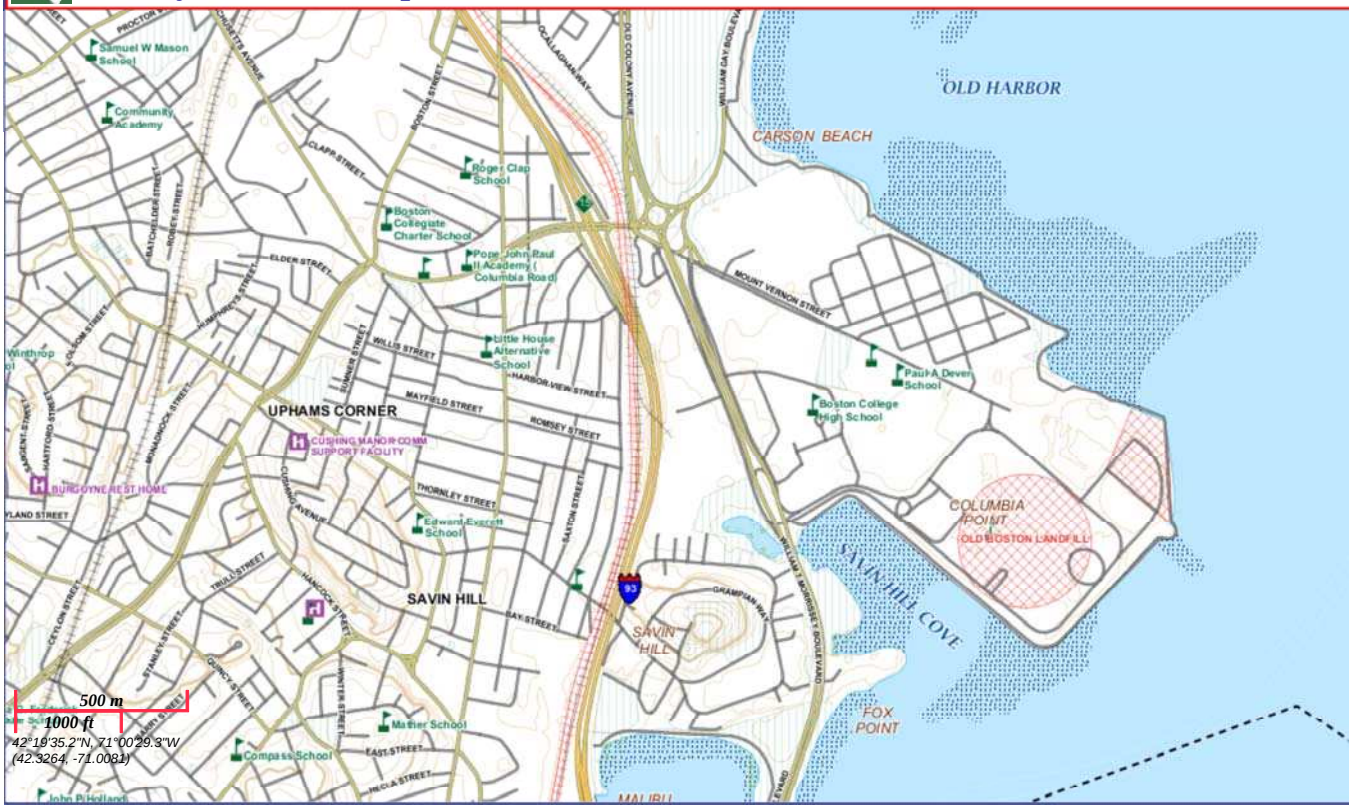
PROJ MGR: JER	REVIEWED BY: RP	CHECKED BY: RP	FIGURE 3
DESIGNED BY: JER	DRAWN BY: SBB	SCALE: NTS	
DATE: NOV. 2014	PROJECT NO. 33930.02	REVISION NO. 0	SHEET NO. 3 OF 3

ATTACHMENT 5

MASSGIS DEP PRIORITY RESOURCES MAP

MassDEP Online Map Viewer

Priority Resource Map




MassDEP
Massachusetts Department of Environmental Protection
Map Legend
Community Groundwater Well
Community Surface Water Intake
Emergency Surface Water Intake
Non-Community Groundwater Well
NHESP Certified Vernal Pool
NHESP Potential Vernal Pool
School
Hospital
Long Term Care Residence
Prison
Pipeline
Powerline
MBTA Blue Line
MBTA Green Line
MBTA Orange Line
MBTA Red Line
Active Rail Lines
Major Highway - Limited Access
Major Road - Not Limited Access
Local Street or Road
Town and State Boundary
DEP Region Boundary
10 Meter Contour Interval
3 Meter Contour Interval
Perennial Stream or Shoreline
Intermittent Stream
Intermittent Shoreline
Manmade Shoreline
Ditch or Canal
Aqueduct
Dam
Channel in Water
Open Water
Public Water Supply Reservoir
Tidal Flat
Inundated Area
Fresh Water Wetland
Cranberry Bog
Salt Water Wetland
NHESP Estimated Habitat of Rare Wildlife
Surface Water Supply Watershed Boundary
Public Water Supply Protection Area (Zone A)
Interim Wellhead Protection Area (IWPA)
Approved Wellhead Protection Area (Zone II)
Solid Waste Landfill
Areas of Critical Environmental Concern
EPA Designated Sole Source Aquifer
Protected Open Space
Non-Potential Drinking Water Source Area: High Yield
Non-Potential Drinking Water Source Area: Medium Yield
Potentially Productive High Yield Aquifer
Potentially Productive Medium Yield Aquifer

ATTACHMENT 6

CORRESPONDENCE WITH NOAA FISHERIES SERVICE

Archived: Friday, October 31, 2014 3:47:59 PM
From: Jessica Yeager
Sent: Monday, October 27, 2014 11:12:42 AM
To: Alice Blayney; Jason Ressler
Subject: Fwd: Remediation General Permit Question
Importance: Normal
Attachments: image002.jpg ;image004.png ;image006.png ;image008.png ;

Include as an appendix.

Jessica Yeager, PE
Assistant Project Manager
GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
Norwood, MA 02144
781-278-5833
781-752-5154 (cell)
781-278-5701 (fax)
jessica.yeager@gza.com

Begin forwarded message:

> **From:** Christine Vaccaro - NOAA Federal <christine.vaccaro@noaa.gov>
> **Date:** October 27, 2014 at 9:11:44 AM AST
> **To:** Jessica Yeager <Jessica.Yeager@gza.com>
> **Subject: Re: Remediation General Permit Question**
>
> Hi there,
> We don't expect that any of our listed species will be exposed to any effects of your action.
>
> Cheers,
> Chris
>
> Chris Vaccaro
> Fisheries Biologist
> Protected Resources Division
> NOAA Fisheries
> Gloucester, MA
> Phone: 978-281-9167
> Email: christine.vaccaro@noaa.gov
>
> On Fri, Oct 24, 2014 at 10:42 PM, Jessica Yeager <Jessica.Yeager@gza.com>

wrote:

ShareFile Attachments
Title Size
Figure.pdf 13.4 MB
Download Attachments Jessica Yeager uses ShareFile to share secure documents.
Learn More.

Hi Christine,

GZA is submitting a Notice of Intent for a Remediation General Permit (RPG) for construction dewatering at

UMass in Boston, MA. The effluent will be discharged to the Dorchester Bay or Savin Hill Cove. I have attached

a map with the approximate location of the site. For the RGP application we need to investigate whether the proposed discharge has the potential to adversely

affect any federally listed species in the Dorchester Bay or Savin Hill Cove. Do you have readily available

information on this?

Thanks,

Jessica

Jessica Yeager, PE

Assistant Project Manager

GZA GeoEnvironmental, Inc.

249 Vanderbilt Avenue | Norwood, MA 02062

o: 781.278.5833 | c: 781.752.5154

jessica.yeager@gza.com | www.gza.com

cid:image001.jpg@01CF178D.31198F60

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ATTACHMENT 7

MHC REPORT

Massachusetts Cultural Resource Informati

MACRIS

MHC Home | MACRIS Home

Results

Get Results in Report Format
PDF Spreadsheet

Below are the results of your search, using the following search criteria:
Town(s): Boston
Place: Dorchester
Street Name: morrissey

For more information about this page and how to use it, click here

Inv. No.	Property Name	Street	Town
BOS.9173	Old Colony Railroad Bridge (Milepost #4.27)	Morrissey Ave	Boston
BOS.9169	Old Colony Railroad Bridge (Milepost #4.33)	Morrissey Blvd	Boston
BOS.9189	Dorchester Bay Bridge - Beades Memorial Bridge	Morrissey Blvd	Boston
BOS.9500	Savin Hill Beach - Malibu Beach	Morrissey Blvd	Boston
BOS.9501	Savin Hill Beach - Malibu Beach Playground	Morrissey Blvd	Boston
BOS.13803	Savin Hill Beach - Malibu Beach Bath House	Morrissey Blvd	Boston
BOS.16665	Kennedy, John F. Library and Museum	Morrissey Blvd	Boston

7 Properties Found

New Search | New Search – Same Town(s) | Previous

MHC Home | MACRIS Home

ATTACHMENT 8

LABORATORY ANALYTICAL RESULTS

CERT F CATE OF ANA YS S

Jason Ressler
GZA GeoEnvironmental, Inc.
655 Winding Brook Drive Suite 402
Glastonbury, CT 06033

RE: UMASS Boston NOI Application (05 0033930 02)
ESS Laboratory Work Order Number: 1410211

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
ESS Laboratory Work Order: 1410211

SAMPLE RECEIPT

The following samples were received on October 08, 2014 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2010 Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES).

The cooler temperature for sample 1410211-01 was not within the acceptance limit of <6°C, however, samples were delivered on ice on the day of sampling.

Lab Number	Sample Name	Matrix	Analysis
1410211-01	U-6	Ground Water	1664A, 2540D, 300.0, 420.1, 4500 CN CE, 4500-Cl E, 6010C, 7010, 7196A, 7470A, 8011, 8082A, 8260B, 8270D, 8270D SIM, Calc
1410211-02	U-108	Ground Water	1664A, 2540D, 300.0, 420.1, 4500 CN CE, 4500-Cl E, 6010C, 7010, 7196A, 7470A, 8011, 8082A, 8260B, 8270D, 8270D SIM, Calc
1410211-03	U-9B	Ground Water	1664A, 2540D, 300.0, 420.1, 4500 CN CE, 4500-Cl E, 6010C, 7010, 7196A, 7470A, 8011, 8082A, 8260B, 8270D, 8270D SIM, Calc
1410211-04	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

PROJECT NARRATIVE

8270C(SIM) Polynuclear Aromatic Hydrocarbons

CXJ0175-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**
Di-n-octylphthalate (121% @ 80-120%)

Classical Chemistry

1410211-01 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

1410211-02 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

1410211-03 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

Total Metals

1410211-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic , Cadmium , Lead

1410211-03 **Present in Method Blank (B).**
Lead

CJ41607-BS1 **Blank Spike recovery is below lower control limit (B-).**
Silver (78% @ 80-120%)

CJ41607-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Silver (76% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
ESS Laboratory Work Order: 1410211

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP and Graphite Furnace Digestion
3020A - Aqueous ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (2.5)		7010		1	KJK	10/16/14 16:19	50	25	CJ40927
Arsenic	**EL** ND (25.0)		7010		10	KJK	10/09/14 22:40	50	25	CJ40927
Cadmium	**EL** ND (2.5)		6010C		1	KJK	10/10/14 15:02	50	25	CJ40927
Chromium	ND (10)		6010C		1	KJK	10/10/14 15:02	50	25	CJ40927
Copper	**18.6** (5.00)		6010C		1	ICP	10/10/14 15:02	50	25	CJ40927
Iron	ND (500)		6010C		10	KJK	10/10/14 17:21	50	25	CJ40927
Lead	**EL** ND (10)		6010C		1	ICP	10/10/14 15:02	50	25	CJ40927
Mercury	ND (0.20)		7470A		1	HG	10/10/14 14:32	20	40	CJ40933
Nickel	ND (5)		6010C		1	ICP	10/10/14 15:02	50	25	CJ40927
Selenium	ND (5.0)		7010		1	KJK	10/10/14 16:42	50	25	CJ40927
Silver	ND (0.2)		7010		1	KJK	10/18/14 18:20	100	20	CJ41607
Zinc	**96** (25)		6010C		1	KJK	10/10/14 15:02	50	25	CJ40927

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: [CALC]

Total Metals Aqueous

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium (III)	ND (10)		Calc		1	EEM	10/08/14 16:55	1	1	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: TAJ
Prepared: 10/10/14 9:40
Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1221	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1232	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1242	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1248	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1254	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1260	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1262	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913
Aroclor 1268	ND (0.09)		8082A		1	10/10/14 17:29		CJ40913

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,1,2-Trichloroethane	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,1-Dichloroethane	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,1-Dichloroethene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,2-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,2-Dichloroethane	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,3-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
1,4-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Acetone	ND (10.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Benzene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Carbon Tetrachloride	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Ethylbenzene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Methylene Chloride	ND (2.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Naphthalene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Tertiary-butyl Alcohol	ND (25.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Tetrachloroethene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Toluene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Trichloroethene	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Vinyl Chloride	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Xylene O	ND (1.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945
Xylene P,M	ND (2.0)		8260B		1	10/09/14 20:51	CXJ0142	CJ40945

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*119 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/10/14 11:06

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	ND (0.2)		8270D		1	10/15/14 5:25	CXJ0187	CJ41006

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*81 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/9/14 15:17

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Acenaphthene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Acenaphthylene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Anthracene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Benzo(a)anthracene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Benzo(a)pyrene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Benzo(b)fluoranthene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Benzo(g,h,i)perylene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Benzo(k)fluoranthene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
bis(2-Ethylhexyl)phthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Butylbenzylphthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Chrysene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Diethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Dimethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Di-n-butylphthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Di-n-octylphthalate	ND (2.34)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Fluoranthene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Fluorene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Naphthalene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Pentachlorophenol	ND (0.84)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Phenanthrene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911
Pyrene	ND (0.19)		8270D SIM		1	10/14/14 21:20	CXJ0175	CJ40911

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*30 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*27 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*33 %*		*30-130*
Surrogate: Nitrobenzene-d5	*43 %*		*30-130*
Surrogate: p-Terphenyl-d14	*44 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chloride	**14500** (2500)		300.0		5000	JLK	10/16/14 15:18	mg/L	CJ41623
Hexavalent Chromium	ND (10)		7196A		1	EEM	10/08/14 16:55	ug/L	CJ40841
Phenols	ND (100)		420.1		1	JLK	10/15/14 15:42	ug/L	CJ41514
Total Cyanide (LL)	ND (5.0)		4500 CN CE		1	EEM	10/14/14 9:30	ug/L	CJ41417
Total Petroleum Hydrocarbon	ND (5)		1664A		1	CRR	10/16/14 0:00	mg/L	CJ41431
Total Residual Chlorine	ND (10)		4500-Cl E		1	EEM	10/08/14 17:00	ug/L	CJ40840
Total Suspended Solids	**56** (5)		2540D		1	EEM	10/10/14 16:10	mg/L	CJ41011

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-6
Date Sampled: 10/08/14 08:30
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: JXS
Prepared: 10/11/14 12:30

8011 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		8011		1	JXS	10/11/14 13:06		CJ41101

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*96 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (2.5)		7010		1	KJK	10/16/14 16:25	50	25	CJ40927
Arsenic	ND (2.5)		7010		1	KJK	10/09/14 21:55	50	25	CJ40927
Cadmium	**0.12** (0.05)		7010		1	JP	10/21/14 21:20	100	20	CJ41607
Chromium	ND (10)		6010C		1	KJK	10/10/14 13:24	50	25	CJ40927
Copper	**6.38** (5.00)		6010C		1	ICP	10/10/14 13:24	50	25	CJ40927
Iron	**18000** (50.0)		6010C		1	KJK	10/10/14 13:24	50	25	CJ40927
Lead	**11** (10)		6010C		1	ICP	10/10/14 13:24	50	25	CJ40927
Mercury	ND (0.20)		7470A		1	HG	10/10/14 14:39	20	40	CJ40933
Nickel	ND (5)		6010C		1	ICP	10/10/14 13:24	50	25	CJ40927
Selenium	ND (5.0)		7010		1	KJK	10/10/14 16:12	50	25	CJ40927
Silver	ND (0.2)		7010		1	KJK	10/18/14 18:26	100	20	CJ41607
Zinc	**37** (25)		6010C		1	KJK	10/10/14 13:24	50	25	CJ40927

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: [CALC]

Total Metals Aqueous

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium (III)	ND (10)		Calc		1	EEM	10/08/14 16:55	1	1	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A
Initial Volume: 950
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: TAJ
Prepared: 10/10/14 9:40
Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1221	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1232	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1242	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1248	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1254	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1260	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1262	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522
Aroclor 1268	ND (0.11)		8082A		1	10/15/14 23:22		CJ41522

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*66 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,1,2-Trichloroethane	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,1-Dichloroethane	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,1-Dichloroethene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,2-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,2-Dichloroethane	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,3-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
1,4-Dichlorobenzene	**5.4** (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Acetone	ND (10.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Benzene	**1.8** (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Carbon Tetrachloride	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Ethylbenzene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Methylene Chloride	ND (2.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Naphthalene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Tertiary-butyl Alcohol	ND (25.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Tetrachloroethene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Toluene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Trichloroethene	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Vinyl Chloride	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Xylene O	ND (1.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945
Xylene P,M	ND (2.0)		8260B		1	10/09/14 21:16	CXJ0142	CJ40945

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*116 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/10/14 11:06

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**0.2** (0.2)		8270D		1	10/15/14 6:14	CXJ0187	CJ41006

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*76 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/9/14 15:17

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Acenaphthene	**1.13** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Acenaphthylene	ND (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Anthracene	**0.24** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Benzo(a)anthracene	**0.22** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Benzo(a)pyrene	**0.22** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Benzo(b)fluoranthene	**0.29** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Benzo(g,h,i)perylene	ND (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Benzo(k)fluoranthene	**0.07** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
bis(2-Ethylhexyl)phthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Butylbenzylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Chrysene	**0.24** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Diethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Dimethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Di-n-butylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Di-n-octylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Fluoranthene	**0.61** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Fluorene	**0.72** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Indeno(1,2,3-cd)Pyrene	**0.15** (0.05)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Naphthalene	ND (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Pentachlorophenol	ND (0.84)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Phenanthrene	**0.91** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911
Pyrene	**0.51** (0.19)		8270D SIM		1	10/14/14 22:09	CXJ0175	CJ40911

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*36 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*31 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*38 %*		*30-130*
Surrogate: Nitrobenzene-d5	*51 %*		*30-130*
Surrogate: p-Terphenyl-d14	*42 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chloride	**1030** (250)		300.0		500	JLK	10/16/14 13:23	mg/L	CJ41623
Hexavalent Chromium	ND (10)		7196A		1	EEM	10/08/14 16:55	ug/L	CJ40841
Phenols	ND (100)		420.1		1	JLK	10/15/14 15:42	ug/L	CJ41514
Total Cyanide (LL)	ND (5.0)		4500 CN CE		1	EEM	10/14/14 9:30	ug/L	CJ41417
Total Petroleum Hydrocarbon	ND (5)		1664A		1	CRR	10/16/14 0:00	mg/L	CJ41431
Total Residual Chlorine	ND (10)		4500-Cl E		1	EEM	10/08/14 17:00	ug/L	CJ40840
Total Suspended Solids	**70** (10)		2540D		1	EEM	10/10/14 16:10	mg/L	CJ41011

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-108
Date Sampled: 10/08/14 09:25
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: JXS
Prepared: 10/16/14 13:00

8011 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		8011		1	JXS	10/16/14 14:09		CJ41608

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*118 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (2.5)		7010		1	KJK	10/16/14 16:31	50	25	CJ40927
Arsenic	ND (2.5)		7010		1	KJK	10/09/14 22:01	50	25	CJ40927
Cadmium	**0.14** (0.05)		7010		1	JP	10/21/14 21:26	100	20	CJ41607
Chromium	ND (10)		6010C		1	KJK	10/10/14 15:18	50	25	CJ40927
Copper	**4.04** (4.00)		6010C		1	ICP	10/20/14 19:11	100	20	CJ41607
Iron	**7170** (50.0)		6010C		1	KJK	10/10/14 15:18	50	25	CJ40927
Lead	**B 8.0** (1.0)		7010		1	JP	10/21/14 3:35	100	20	CJ41607
Mercury	ND (0.20)		7470A		1	HG	10/10/14 14:41	20	40	CJ40933
Nickel	ND (5)		6010C		1	ICP	10/10/14 15:18	50	25	CJ40927
Selenium	ND (5.0)		7010		1	KJK	10/10/14 16:18	50	25	CJ40927
Silver	ND (0.2)		7010		1	KJK	10/18/14 18:32	100	20	CJ41607
Zinc	**93** (25)		6010C		1	KJK	10/10/14 15:18	50	25	CJ40927

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: [CALC]

Total Metals Aqueous

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Chromium (III)	ND (10)		Calc		1	EEM	10/08/14 16:55	1	1	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A
Initial Volume: 970
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: TAJ
Prepared: 10/10/14 9:40
Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1221	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1232	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1242	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1248	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1254	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1260	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1262	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522
Aroclor 1268	ND (0.10)		8082A		1	10/15/14 23:40		CJ41522

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*68 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*57 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,1,2-Trichloroethane	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,1-Dichloroethane	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,1-Dichloroethene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,2-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,2-Dichloroethane	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,3-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
1,4-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Acetone	ND (10.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Benzene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Carbon Tetrachloride	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Ethylbenzene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Methylene Chloride	ND (2.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Naphthalene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Tertiary-butyl Alcohol	ND (25.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Tetrachloroethene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Toluene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Trichloroethene	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Vinyl Chloride	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Xylene O	ND (1.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945
Xylene P,M	ND (2.0)		8260B		1	10/09/14 21:42	CXJ0142	CJ40945

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*118 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*114 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/10/14 11:06

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane	**1.0** (0.2)		8270D		1	10/15/14 7:04	CXJ0187	CJ41006

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*72 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: VSC
Prepared: 10/9/14 15:17

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Acenaphthene	**4.33** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Acenaphthylene	ND (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Anthracene	**0.89** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Benzo(a)anthracene	**0.29** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Benzo(a)pyrene	**0.20** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Benzo(b)fluoranthene	**0.24** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Benzo(g,h,i)perylene	ND (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Benzo(k)fluoranthene	**0.07** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
bis(2-Ethylhexyl)phthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Butylbenzylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Chrysene	**0.30** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Dibenzo(a,h)Anthracene	ND (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Diethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Dimethylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Di-n-butylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Di-n-octylphthalate	ND (2.34)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Fluoranthene	**2.10** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Fluorene	**4.31** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Indeno(1,2,3-cd)Pyrene	**0.13** (0.05)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Naphthalene	ND (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Pentachlorophenol	ND (0.84)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Phenanthrene	**2.23** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911
Pyrene	**1.53** (0.19)		8270D SIM		1	10/14/14 22:58	CXJ0175	CJ40911

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*38 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*37 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*41 %*		*30-130*
Surrogate: Nitrobenzene-d5	*55 %*		*30-130*
Surrogate: p-Terphenyl-d14	*48 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chloride	**820** (100)		300.0		200	JLK	10/15/14 19:06	mg/L	CJ41517
Hexavalent Chromium	ND (10)		7196A		1	EEM	10/08/14 16:55	ug/L	CJ40841
Phenols	ND (100)		420.1		1	JLK	10/15/14 15:42	ug/L	CJ41514
Total Cyanide (LL)	ND (5.0)		4500 CN CE		1	EEM	10/14/14 9:30	ug/L	CJ41417
Total Petroleum Hydrocarbon	ND (5)		1664A		1	CRR	10/16/14 0:00	mg/L	CJ41431
Total Residual Chlorine	ND (10)		4500-Cl E		1	EEM	10/08/14 17:00	ug/L	CJ40840
Total Suspended Solids	**28** (5)		2540D		1	EEM	10/10/14 16:10	mg/L	CJ41011

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: U-9B
Date Sampled: 10/08/14 11:10
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: JXS
Prepared: 10/11/14 12:30

8011 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		8011		1	JXS	10/11/14 14:59		CJ41101

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*108 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application
Client Sample ID: Trip Blank
Date Sampled: 10/08/14 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1410211
ESS Laboratory Sample ID: 1410211-04
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,1,2-Trichloroethane	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,1-Dichloroethane	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,1-Dichloroethene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,2-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,2-Dichloroethane	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,3-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
1,4-Dichlorobenzene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Acetone	ND (10.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Benzene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Carbon Tetrachloride	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Ethylbenzene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Methylene Chloride	ND (2.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Naphthalene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Tertiary-butyl Alcohol	ND (25.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Tetrachloroethene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Toluene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Trichloroethene	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Vinyl Chloride	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Xylene O	ND (1.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945
Xylene P,M	ND (2.0)		8260B		1	10/09/14 17:04	CXJ0142	CJ40945

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*109 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ40927 - 3005A/200.7										
Blank										
Antimony	ND	2.5	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10	ug/L							
Copper	ND	5.00	ug/L							
Iron	ND	50.0	ug/L							
Lead	ND	10	ug/L							
Nickel	ND	5	ug/L							
Selenium	ND	5.0	ug/L							
Zinc	ND	25	ug/L							
Blank										
Arsenic	ND	5.0	ug/L							
LCS										
Antimony	233	50.0	ug/L	250.0		93	80-120			
Arsenic	270	50.0	ug/L	250.0		108	80-120			
Cadmium	117	2.5	ug/L	125.0		94	80-120			
Chromium	241	10	ug/L	250.0		97	80-120			
Copper	242	5.00	ug/L	250.0		97	80-120			
Iron	1260	50.0	ug/L	1250		101	80-120			
Lead	249	10	ug/L	250.0		100	80-120			
Nickel	244	5	ug/L	250.0		98	80-120			
Selenium	502	100	ug/L	500.0		100	80-120			
Zinc	247	25	ug/L	250.0		99	80-120			
LCS Dup										
Antimony	235	50.0	ug/L	250.0		94	80-120	0.8	20	
Arsenic	281	50.0	ug/L	250.0		113	80-120	4	20	
Cadmium	119	2.5	ug/L	125.0		95	80-120	1	20	
Chromium	244	10	ug/L	250.0		98	80-120	1	20	
Copper	243	5.00	ug/L	250.0		97	80-120	0.4	20	
Iron	1260	50.0	ug/L	1250		101	80-120	0.4	20	
Lead	247	10	ug/L	250.0		99	80-120	0.5	20	
Nickel	246	5	ug/L	250.0		98	80-120	0.8	20	
Selenium	503	100	ug/L	500.0		101	80-120	0.2	20	
Zinc	244	25	ug/L	250.0		98	80-120	1	20	
Batch CJ40933 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.80	0.20	ug/L	6.000		97	80-120			
LCS Dup										
Mercury	5.81	0.20	ug/L	6.000		97	80-120	0.04	20	
Batch CJ41607 - 3005A/200.7										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ41607 - 3005A/200.7										
Cadmium	ND	0.05	ug/L							
Copper	ND	4.00	ug/L							
Lead	3.9	1.0	ug/L							
Silver	ND	0.2	ug/L							
LCS										
Cadmium	131	62.5	ug/L	125.0		105	80-120			
Lead	226	50.0	ug/L	250.0		91	80-120			
Silver	98.0	50.0	ug/L	125.0		78	80-120			B-
LCS Dup										
Cadmium	127	62.5	ug/L	125.0		102	80-120	3	20	
Lead	200	50.0	ug/L	250.0		80	80-120	12	20	
Silver	94.5	50.0	ug/L	125.0		76	80-120	4	20	B-
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ40913 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0433*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0423*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0269*		ug/L	*0.05000*		*54*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0283*		ug/L	*0.05000*		*57*	*30-150*			
LCS										
Aroclor 1016	0.74	0.10	ug/L	1.000		74	40-140			
Aroclor 1260	0.79	0.10	ug/L	1.000		79	40-140			
Surrogate: Decachlorobiphenyl	*0.0394*		ug/L	*0.05000*		*79*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0413*		ug/L	*0.05000*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0266*		ug/L	*0.05000*		*53*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0275*		ug/L	*0.05000*		*55*	*30-150*			
LCS Dup										
Aroclor 1016	0.70	0.10	ug/L	1.000		70	40-140	5	20	
Aroclor 1260	0.71	0.10	ug/L	1.000		71	40-140	11	20	
Surrogate: Decachlorobiphenyl	*0.0354*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0357*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0259*		ug/L	*0.05000*		*52*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ40913 - 3510C										
Surrogate: Tetrachloro-m-xylene [2C]	***0.0260***		ug/L	***0.05000***		***52***	***30-150***			
Batch CJ41522 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	***0.0432***		ug/L	***0.05000***		***86***	***30-150***			
Surrogate: Decachlorobiphenyl [2C]	***0.0437***		ug/L	***0.05000***		***87***	***30-150***			
Surrogate: Tetrachloro-m-xylene	***0.0266***		ug/L	***0.05000***		***53***	***30-150***			
Surrogate: Tetrachloro-m-xylene [2C]	***0.0289***		ug/L	***0.05000***		***58***	***30-150***			
LCS										
Aroclor 1016	0.83	0.10	ug/L	1.000		83	40-140			
Aroclor 1260	0.91	0.10	ug/L	1.000		91	40-140			
Surrogate: Decachlorobiphenyl	***0.0439***		ug/L	***0.05000***		***88***	***30-150***			
Surrogate: Decachlorobiphenyl [2C]	***0.0442***		ug/L	***0.05000***		***88***	***30-150***			
Surrogate: Tetrachloro-m-xylene	***0.0303***		ug/L	***0.05000***		***61***	***30-150***			
Surrogate: Tetrachloro-m-xylene [2C]	***0.0305***		ug/L	***0.05000***		***61***	***30-150***			
LCS Dup										
Aroclor 1016	0.81	0.10	ug/L	1.000		81	40-140	2	20	
Aroclor 1260	0.86	0.10	ug/L	1.000		86	40-140	6	20	
Surrogate: Decachlorobiphenyl	***0.0401***		ug/L	***0.05000***		***80***	***30-150***			
Surrogate: Decachlorobiphenyl [2C]	***0.0400***		ug/L	***0.05000***		***80***	***30-150***			
Surrogate: Tetrachloro-m-xylene	***0.0302***		ug/L	***0.05000***		***60***	***30-150***			
Surrogate: Tetrachloro-m-xylene [2C]	***0.0303***		ug/L	***0.05000***		***61***	***30-150***			
8260B Volatile Organic Compounds										
Batch CJ40945 - 5030B										
Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ40945 - 5030B										
1,4-Dichlorobenzene	ND	1.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tertiary-butyl Alcohol	ND	25.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	***27.3***		ug/L	***25.00***		***109***	***70-130***			
Surrogate: 4-Bromofluorobenzene	***23.2***		ug/L	***25.00***		***93***	***70-130***			
Surrogate: Dibromofluoromethane	***26.7***		ug/L	***25.00***		***107***	***70-130***			
Surrogate: Toluene-d8	***24.8***		ug/L	***25.00***		***99***	***70-130***			
LCS										
1,1,1-Trichloroethane	10.5		ug/L	10.00		105	70-130			
1,1,2-Trichloroethane	10.0		ug/L	10.00		100	70-130			
1,1-Dichloroethane	9.9		ug/L	10.00		99	70-130			
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130			
1,3-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
Acetone	42.7		ug/L	50.00		85	70-130			
Benzene	10.3		ug/L	10.00		103	70-130			
Carbon Tetrachloride	9.5		ug/L	10.00		95	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
Ethylbenzene	10.6		ug/L	10.00		106	70-130			
Methyl tert-Butyl Ether	9.8		ug/L	10.00		98	70-130			
Methylene Chloride	10.1		ug/L	10.00		101	70-130			
Naphthalene	9.0		ug/L	10.00		90	70-130			
Tertiary-amyl methyl ether	9.6		ug/L	10.00		96	70-130			
Tertiary-butyl Alcohol	50.8		ug/L	50.00		102	70-130			
Tetrachloroethene	10.2		ug/L	10.00		102	70-130			
Toluene	10.8		ug/L	10.00		108	70-130			
Trichloroethene	9.8		ug/L	10.00		98	70-130			
Vinyl Chloride	11.0		ug/L	10.00		110	70-130			
Xylene O	10.7		ug/L	10.00		107	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ40945 - 5030B										
Xylene P,M	21.5		ug/L	20.00		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	***24.1***		ug/L	***25.00***		***96***	***70-130***			
Surrogate: 4-Bromofluorobenzene	***22.0***		ug/L	***25.00***		***88***	***70-130***			
Surrogate: Dibromofluoromethane	***24.7***		ug/L	***25.00***		***99***	***70-130***			
Surrogate: Toluene-d8	***24.2***		ug/L	***25.00***		***97***	***70-130***			
LCS Dup										
1,1,1-Trichloroethane	10.6		ug/L	10.00		106	70-130	0.9	25	
1,1,2-Trichloroethane	10.0		ug/L	10.00		100	70-130	0.8	25	
1,1-Dichloroethane	10.0		ug/L	10.00		100	70-130	0.7	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	2	25	
1,2-Dichlorobenzene	10.0		ug/L	10.00		100	70-130	0.1	25	
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130	0.7	25	
1,3-Dichlorobenzene	10.0		ug/L	10.00		100	70-130	1	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	1	25	
Acetone	43.5		ug/L	50.00		87	70-130	2	25	
Benzene	10.4		ug/L	10.00		104	70-130	1	25	
Carbon Tetrachloride	9.6		ug/L	10.00		96	70-130	1	25	
cis-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130	2	25	
Ethylbenzene	10.6		ug/L	10.00		106	70-130	0	25	
Methyl tert-Butyl Ether	10.0		ug/L	10.00		100	70-130	2	25	
Methylene Chloride	10.2		ug/L	10.00		102	70-130	1	25	
Naphthalene	9.2		ug/L	10.00		92	70-130	2	25	
Tertiary-amyl methyl ether	9.4		ug/L	10.00		94	70-130	2	25	
Tertiary-butyl Alcohol	50.7		ug/L	50.00		101	70-130	0.1	25	
Tetrachloroethene	10.0		ug/L	10.00		100	70-130	2	25	
Toluene	10.7		ug/L	10.00		107	70-130	0.6	25	
Trichloroethene	10.0		ug/L	10.00		100	70-130	1	25	
Vinyl Chloride	11.2		ug/L	10.00		112	70-130	1	25	
Xylene O	10.4		ug/L	10.00		104	70-130	3	25	
Xylene P,M	21.0		ug/L	20.00		105	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	***25.0***		ug/L	***25.00***		***100***	***70-130***			
Surrogate: 4-Bromofluorobenzene	***22.6***		ug/L	***25.00***		***91***	***70-130***			
Surrogate: Dibromofluoromethane	***25.8***		ug/L	***25.00***		***103***	***70-130***			
Surrogate: Toluene-d8	***24.6***		ug/L	***25.00***		***98***	***70-130***			
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch CJ41006 - 3520C										
Blank										
1,4-Dioxane	ND	0.2	ug/L							
Surrogate: 1,4-Dioxane-d8	***3.24***		ug/L	***5.000***		***65***	***15-115***			
LCS										
1,4-Dioxane	6.8	0.2	ug/L	10.00		68	40-140			
Surrogate: 1,4-Dioxane-d8	***4.29***		ug/L	***5.000***		***86***	***15-115***			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch CJ41006 - 3520C										
1,4-Dioxane	6.2	0.2	ug/L	10.00		62	40-140	9	20	
Surrogate: 1,4-Dioxane-d8	***4.39***		ug/L	***5.000***		***88***	***15-115***			
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ40911 - 3510C										
Blank										
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
bis(2-Ethylhexyl)phthalate	ND	2.50	ug/L							
Butylbenzylphthalate	ND	2.50	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Diethylphthalate	ND	2.50	ug/L							
Dimethylphthalate	ND	2.50	ug/L							
Di-n-butylphthalate	ND	2.50	ug/L							
Di-n-octylphthalate	ND	2.50	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Pentachlorophenol	ND	0.90	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	***1.04***		ug/L	***2.500***		***42***	***30-130***			
Surrogate: 2,4,6-Tribromophenol	***1.66***		ug/L	***3.750***		***44***	***15-110***			
Surrogate: 2-Fluorobiphenyl	***1.29***		ug/L	***2.500***		***52***	***30-130***			
Surrogate: Nitrobenzene-d5	***1.88***		ug/L	***2.500***		***75***	***30-130***			
Surrogate: p-Terphenyl-d14	***1.65***		ug/L	***2.500***		***66***	***30-130***			
LCS										
Acenaphthene	2.28	0.20	ug/L	4.000		57	40-140			
Acenaphthylene	2.36	0.20	ug/L	4.000		59	40-140			
Anthracene	2.67	0.20	ug/L	4.000		67	40-140			
Benzo(a)anthracene	2.50	0.05	ug/L	4.000		63	40-140			
Benzo(a)pyrene	2.75	0.05	ug/L	4.000		69	40-140			
Benzo(b)fluoranthene	2.74	0.05	ug/L	4.000		68	40-140			
Benzo(g,h,i)perylene	2.76	0.20	ug/L	4.000		69	40-140			
Benzo(k)fluoranthene	2.42	0.05	ug/L	4.000		61	40-140			
bis(2-Ethylhexyl)phthalate	4.00	2.50	ug/L	4.000		100	40-140			
Butylbenzylphthalate	3.23	2.50	ug/L	4.000		81	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ40911 - 3510C										
Chrysene	2.72	0.05	ug/L	4.000		68	40-140			
Dibenzo(a,h)Anthracene	2.85	0.05	ug/L	4.000		71	40-140			
Diethylphthalate	2.75	2.50	ug/L	4.000		69	40-140			
Dimethylphthalate	2.62	2.50	ug/L	4.000		66	40-140			
Di-n-butylphthalate	2.70	2.50	ug/L	4.000		67	40-140			
Di-n-octylphthalate	3.21	2.50	ug/L	4.000		80	40-140			
Fluoranthene	2.63	0.20	ug/L	4.000		66	40-140			
Fluorene	2.55	0.20	ug/L	4.000		64	40-140			
Indeno(1,2,3-cd)Pyrene	2.89	0.05	ug/L	4.000		72	40-140			
Naphthalene	2.02	0.20	ug/L	4.000		50	40-140			
Pentachlorophenol	2.26	0.90	ug/L	4.000		56	30-130			
Phenanthrene	2.63	0.20	ug/L	4.000		66	40-140			
Pyrene	2.60	0.20	ug/L	4.000		65	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	***1.28***		ug/L	***2.500***		***51***	***30-130***			
Surrogate: 2,4,6-Tribromophenol	***1.94***		ug/L	***3.750***		***52***	***15-110***			
Surrogate: 2-Fluorobiphenyl	***1.49***		ug/L	***2.500***		***59***	***30-130***			
Surrogate: Nitrobenzene-d5	***1.99***		ug/L	***2.500***		***80***	***30-130***			
Surrogate: p-Terphenyl-d14	***1.73***		ug/L	***2.500***		***69***	***30-130***			
LCS Dup										
Acenaphthene	2.31	0.20	ug/L	4.000		58	40-140	1	20	
Acenaphthylene	2.41	0.20	ug/L	4.000		60	40-140	2	20	
Anthracene	2.69	0.20	ug/L	4.000		67	40-140	0.7	20	
Benzo(a)anthracene	2.54	0.05	ug/L	4.000		64	40-140	2	20	
Benzo(a)pyrene	2.76	0.05	ug/L	4.000		69	40-140	0.6	20	
Benzo(b)fluoranthene	2.73	0.05	ug/L	4.000		68	40-140	0.02	20	
Benzo(g,h,i)perylene	2.82	0.20	ug/L	4.000		70	40-140	2	20	
Benzo(k)fluoranthene	2.41	0.05	ug/L	4.000		60	40-140	0.6	20	
bis(2-Ethylhexyl)phthalate	4.54	2.50	ug/L	4.000		113	40-140	12	20	
Butylbenzylphthalate	3.23	2.50	ug/L	4.000		81	40-140	0.001	20	
Chrysene	2.66	0.05	ug/L	4.000		67	40-140	2	20	
Dibenzo(a,h)Anthracene	2.91	0.05	ug/L	4.000		73	40-140	2	20	
Diethylphthalate	2.76	2.50	ug/L	4.000		69	40-140	0.4	20	
Dimethylphthalate	2.63	2.50	ug/L	4.000		66	40-140	0.3	20	
Di-n-butylphthalate	2.77	2.50	ug/L	4.000		69	40-140	3	20	
Di-n-octylphthalate	3.13	2.50	ug/L	4.000		78	40-140	2	20	
Fluoranthene	2.61	0.20	ug/L	4.000		65	40-140	0.7	20	
Fluorene	2.57	0.20	ug/L	4.000		64	40-140	0.7	20	
Indeno(1,2,3-cd)Pyrene	2.92	0.05	ug/L	4.000		73	40-140	0.9	20	
Naphthalene	1.93	0.20	ug/L	4.000		48	40-140	5	20	
Pentachlorophenol	2.22	0.90	ug/L	4.000		56	30-130	2	20	
Phenanthrene	2.60	0.20	ug/L	4.000		65	40-140	1	20	
Pyrene	2.62	0.20	ug/L	4.000		65	40-140	0.8	20	
Surrogate: 1,2-Dichlorobenzene-d4	***1.12***		ug/L	***2.500***		***45***	***30-130***			
Surrogate: 2,4,6-Tribromophenol	***1.89***		ug/L	***3.750***		***50***	***15-110***			
Surrogate: 2-Fluorobiphenyl	***1.52***		ug/L	***2.500***		***61***	***30-130***			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ40911 - 3510C										
Surrogate: Nitrobenzene-d5	*1.83*		ug/L	*2.500*		*73*	*30-130*			
Surrogate: p-Terphenyl-d14	*1.84*		ug/L	*2.500*		*74*	*30-130*			
Classical Chemistry										
Batch CJ40840 - General Preparation										
Blank										
Total Residual Chlorine	ND	10	ug/L							
LCS										
Total Residual Chlorine	2		mg/L	2.250		100	85-115			
Batch CJ40841 - General Preparation										
Blank										
Hexavalent Chromium	ND	10	ug/L							
LCS										
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110			
LCS Dup										
Hexavalent Chromium	0.5		mg/L	0.4998		100	90-110	0.3	20	
Batch CJ41011 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	68		mg/L	68.80		99	80-120			
Batch CJ41417 - TCN Prep										
Blank										
Total Cyanide (LL)	ND	5.0	ug/L							
LCS										
Total Cyanide (LL)	20.0	5.0	ug/L	20.06		100	90-110			
LCS										
Total Cyanide (LL)	148	5.0	ug/L	150.4		99	90-110			
LCS Dup										
Total Cyanide (LL)	149	5.0	ug/L	150.4		99	90-110	0.6	20	
Batch CJ41431 - General Preparation										
Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
LCS										
Total Petroleum Hydrocarbon	13	5	mg/L	19.38		69	66-114			
Batch CJ41514 - General Preparation										
Blank										
Phenols	ND	100	ug/L							
LCS										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CJ41514 - General Preparation										
Phenols	98	100	ug/L	100.0		98	80-120			
LCS										
Phenols	995	100	ug/L	1000		100	80-120			
Batch CJ41517 - General Preparation										
Blank										
Chloride	ND	0.5	mg/L							
LCS										
Chloride	2.6		mg/L	2.500		106	90-110			
Batch CJ41623 - General Preparation										
Blank										
Chloride	ND	0.5	mg/L							
LCS										
Chloride	2.6		mg/L	2.500		104	90-110			
8011 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane										
Batch CJ41101 - 504/8011										
Blank										
1,2-Dibromoethane	ND	0.015	ug/L							
Surrogate: Pentachloroethane	*0.198*		ug/L	*0.2000*		*99*	*30-150*			
LCS										
1,2-Dibromoethane	0.170	0.015	ug/L	0.2000		85	60-140			
Surrogate: Pentachloroethane	*0.179*		ug/L	*0.2000*		*90*	*30-150*			
LCS										
1,2-Dibromoethane	0.069	0.015	ug/L	0.08000		86	60-140			
Surrogate: Pentachloroethane	*0.0621*		ug/L	*0.08000*		*78*	*30-150*			
Batch CJ41608 - 504/8011										
Blank										
1,2-Dibromoethane	ND	0.015	ug/L							
Surrogate: Pentachloroethane	*0.187*		ug/L	*0.2000*		*94*	*30-150*			
LCS										
1,2-Dibromoethane	0.252	0.015	ug/L	0.2000		126	60-140			
Surrogate: Pentachloroethane	*0.208*		ug/L	*0.2000*		*104*	*30-150*			
LCS										
1,2-Dibromoethane	0.091	0.015	ug/L	0.08000		113	60-140			
Surrogate: Pentachloroethane	*0.0920*		ug/L	*0.08000*		*115*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application ESS Laboratory Work Order: 1410211

Notes and Definitions

U	Analyte included in the analysis, but not detected
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
B-	Blank Spike recovery is below lower control limit (B-).
B	Present in Method Blank (B).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: UMASS - Boston NOI Application

ESS Laboratory Work Order: 1410211

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.
Client Project ID: _____
Shipped/Delivered Via: Client

ESS Project ID: 14100211
Date Project Due: ~~10/15/2014~~ 10/16/14
Days For Project: 5 Day
MB 10/8/14

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	* Yes MB 10/8/14
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **13.1** 5.9, 3, 6 MB 10/8/14		16. Are ESS labels on correct containers?	Yes No
Iced With: **Ice**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	

WC 10/8/14

18. Was there need to call project manager to discuss status? If yes, please explain Trip Blank has An bubble
Sample #1 came from cooler w/ 13.1°, Sample 2 came from cooler w/ 5.9°
Sample #3 came from cooler w/ 3.6°. Hexachrome samples split off and MB 10/8/14
Presented in lab @ 1537 MB 10/8/14

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	3	H2SO4
1	Yes	1 L Glass	6	NP
1	Yes	1 L Plastic	1	NP
1	Yes	250 ml Plastic	1	HNO3
1	Yes	250 ml Plastic	1	NaOH pH=11 @ 1530 MB 10/8/14
1	Yes	250 ml Plastic	1	NP
1	Yes	40 ml - VOA	6	HCL
1	Yes	500 ml Plastic	1	HNO3
2	Yes	1 L Glass	4	H2SO4
2	Yes	1 L Glass	5	NP
2	Yes	1 L Plastic	1	NP
2	Yes	250 ml Plastic	1	HNO3
2	Yes	250 ml Plastic	1	NaOH pH=12 @ 1530 MB 10/8/14
2	Yes	250 ml Plastic	1	NP
2	Yes	40 ml - VOA	6	HCL
2	Yes	500 ml Plastic	1	HNO3
3	Yes	1 L Glass	3	H2SO4
3	Yes	1 L Glass	6	NP
3	Yes	1 L Plastic	1	NP
3	Yes	250 ml Plastic	1	HNO3
3	Yes	250 ml Plastic	1	NaOH pH=10 @ 1530 MB 10/8/14
3	Yes	250 ml Plastic	1	NP
3	Yes	40 ml - VOA	6	HCL
3	Yes	500 ml Plastic	1	HNO3
4	Yes	40 ml - VOA	2	HCL

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

ESS Project ID: 14100211

Completed By: _____ Date/Time: 10/8/14 1545

Reviewed By: _____ Date/Time: 10/8/14 1550

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF COUSTODY

ESS LAB PROJECT ID: 1410211

Reporting Limits -

Turn Time ✓ Standard Rush ____ Approved By: ____

State where samples were collected: (MA) NH RI

Is this project for: RGP

Electonic Deliverable Yes ✓ No ____
Format: Excel ✓ Access ____ PDF ✓ Other ____

GZA Project Manager: Jason Ressler
GZA GeoEnvironmental, Inc.
Address: 530 Broadway, Providence, RI

Project # 33930.02
Project Name: U-MASS Boston
Contract Pricing ____
Special Pricing WO#: ____

ESS Lab Sample ID	Date	Collection Time	Grab -G Composite-C	Matrix	Sample Identification	# of Containers	RGP Metals	Chloride 300.0	Total Cyanide 4500 LL	TPH 1664	TSS 2540D	**TRC 4500-CL E**	Total Phenols 420.1	Tri Cr (Calc. MUST run T. Cr)	**Hex Cr 7196A**	RGP VOC Long List 8260	1,4-Dioxane 8270	EDB 8011	RGP SVOC Log List 8270-SIM	PCB 8082 LL	Comment #
1	10/8/14	8:30	G	GW	U-6	19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1,2
2	↓	9:25	G	GW	U-108	19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	↓	11:10	G	GW	U-9B	19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4					Trip Blank (10/8/14)																
						Preservation Code	4	1	5	3	1	1	3	-	1	2	1	2	1	1	
						Container Type	P	P	P	AG	P	P	AG	-	P	V	AG	V	AG	AG	

PAH SIM

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-____

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present X Yes ____ No
Seals Intact ____ Yes ____ No NA: X
Cooler Temperature: 3.6° 5.9° 13.1° ICE

Sampled by: Ryan DaPonte

Comments: 1) RGP Metals include Sb, As, Cd, Cu, Fe, Pb, Ni, Se, Ag and Zn by 6010/6020/7010 and Hg by 7470A
2) Parameters in **BOLD** have Short hold-time
PERMIT ATTACHED

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	10/8/14 1320	[signature] 10/8/14 1320			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Please E-mail all changes to Chain of Custody in writing.

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