



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

**5 Post Office Square, Suite 100
BOSTON, MA 02109-3912**

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAY 17 2013

Jason Seaburg
Senior Project Manager
Suffolk Construction
65 Allerton Street
Boston, MA 02119

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. "Brigham Building for the Future" located at 74 Fenwood Road, Boston,
MA, Suffolk County; Authorization # MAG910576

Dear Mr. Seaburg:

Based on the review of a Notice of Intent (NOI) submitted on behalf of Brigham and Women's Hospital by the firm Haley & Aldrich 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 volatile organics and metals parameters you have marked "Believed Present." The checklist also includes metals cadmium, and lead detected in soils which has exceeded the Massachusetts Contingency Plans reportable concentrations at the site.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to discharge limitations based on a dilution factor range (DFR). With the limited dilution of the Muddy River at the Brigham and Women's location, EPA determined that the DFR for each parameter is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities) Therefore, the limits for arsenic of 10

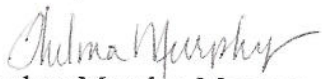
ug/L, cadmium of 0.2 ug/L, copper of 5.2 ug/L, and lead of 1.3 ug/L shall not be exceeded in the discharge.

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 general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on June 1, 2015. If for any reason the discharge terminates sooner 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, Manager
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Paul Canvan, BW&S
Maris Mann-Stadt, Haley & Aldrich, Inc.

**2010 Remediation General Permit
Summary of Monitoring Parameters^[1]**

NPDES Authorization Number:		MAG910576
Authorization Issued:	May, 2013	
Facility/Site Name:		
Facility/Site Address:	74 Fenwood Road, Boston, MA 02113, Suffolk County	
	Email address of Owner: Ikuzia@partnerszuzia@partners.	
Legal Name of Operator:	Suffolk Construction	
Operator contact name, title, and Address:	Jason Seaburg Suffolk Construction 65 Allerton Street, Boston, MA 02119	
	Email: seaburg@suffolkconstruction.com	
Estimated date of The Project Completion:	6/1/2015	
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Subcategory A. General Urban Fill Sites and Known Contaminated Sites.	
RGP Termination Date:	September 10, 2015	
Receiving Water:	Muddy River	

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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (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/ML 5ug/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/ML 5ug/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

<u>Metal parameter</u>	<u>Total Recoverable Metal Limit @ H ¹⁰ = 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) ^{11/12}</u>	<u>Minimum level=ML</u>
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		Freshwater		
	39. Antimony	5.6/ML 10		
✓	40. Arsenic **	10/ML20		
✓	41. Cadmium **	0.2/ML10		
	42. Chromium III (trivalent) **	48.8/ML15		
	43. Chromium VI (hexavalent) **	11.4/ML10		
✓	44. Copper **	5.2/ML15		
✓	45. Lead **	1.3/ML20		
	46. Mercury **	0.9/ML0.2		
	47. Nickel **	29/ML20		
	48. Selenium **	5/ML20		
	49. Silver	1.2/ML10		
	50. Zinc **	66.6/ML15		
	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 $DF \times 1,000 \text{ ug/L}$ (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit = $1,000 \times 2 = 2,000 \text{ ug/L}$, 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

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

Tel: 617.886.7400
Fax: 617.886.7600
HaleyAldrich.com



30 April 2013
File No. 35198-101

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

Attention: Remediation General Permit NOI Processing

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Brigham Building for the Future
74 Fenwood Street
Boston, Massachusetts
Release Tracking Number (RTN) 3-31177

Ladies & Gentlemen:

On behalf of our client, Brigham and Women's Hospital (BWH), and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for temporary construction site dewatering under the RGP. Temporary dewatering is planned in support of the proposed site development which includes construction of a 12-story building with two to six levels of below grade parking or imaging space located in Boston, Massachusetts as shown on Figure 1 – Project Locus.

The Site is bordered to the north by Fenwood Road beyond which is the BWH Shapiro Center, to the east by Vining Street, to the south by Vining Street beyond which is the Roxbury Tenants of Harvard Tower, and to the west by a parking lot beyond which is the Riverway. The Site is generally flat ranging in elevation from El. 22 to El. 26 (Boston City Base, BCB datum). A Subsurface Exploration Location Plan is included as Figure 2.

Site History

According to the historical resources, the Site was vacant, undeveloped land prior to construction of the Main and Powerhouse Buildings in approximately 1912. The Research Building was built in approximately 1954, and the Therapeutic building was reportedly constructed in 1962 between 1995 and 1998 the sandwich shop building was constructed.

BWH executed a ground lease agreement with the Division of Capital Asset Management (DCAM) for the Massachusetts Mental Health Center (MMHC) site in 2009, and abated and demolished the buildings between 2010 and 2011. Currently the Site is paved and used by BWH as a parking lot.

Proposed Construction

The subject site is located at 74 Fenwood Road in Boston, Massachusetts as shown on Figure 1, Project Locus. Proposed site development includes construction of 12-story building to be used as patient and laboratory space with up to six levels of below grade parking or imaging space.

Environmental Conditions and Regulatory Background

Based on the soil data collected in between February 2012 and May 2012, the concentration levels of arsenic, cadmium and lead detected in soil exceeded the Massachusetts Contingency Plan (MCP) RCS-1 Reportable Concentrations and constituted a 120 day reporting obligation pursuant to 310 CMR 40.0315. The 120-day release notification was reported to the Massachusetts Department of Environmental Protection (MassDEP) under Transmittal Form BWSC103 Release Notification Form (RNF) which was filed via eDEP on 24 October 2012. Subsequently, MassDEP assigned Release Tracking Number (RTN), 3-31177 for this release, in a letter dated 13 November 2012.

Groundwater samples were collected from six wells (listed in Table I and located as shown on Figure 2) on multiple sampling events in order to characterize the extent of the contamination, and also to support of submission of the NOI. In summary, groundwater data indicated levels of total cyanide at concentrations that exceed the MCP RCGW-2 standard for total cyanide in two of the wells tested. All other compounds tested were below the GW-2 standards.

In accordance with the MCP, soil management will be conducted under the provisions of a Release Abatement Measure (RAM) Plan. The RAM Plan will be filed with the MassDEP prior to commencement of soil management activities pursuant to 310 CMR 40.442 (3) and 310 CMR 40.0444.

It is planned to manage remedial wastewater in accordance with the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000 under a Release Abatement Measure (RAM) Plan for the subject site under RTN 3-12332.

Temporary Construction Dewatering Notice of Intent

In support of the NOI, one unfiltered groundwater sample was obtained from observation well HA-12-13 (OW), on 30 January 2013. The groundwater sample was submitted to Alpha Analytical, Inc. of Westborough, Massachusetts (Alpha Analytical) for analysis for NPDES permit parameters including VOCs, SVOCs, PAHs, metals, TPH, pesticides, PCBs, total suspended solids (TSS), chloride, total cyanide, total phenolics and total residual chlorine. The analytical results for the groundwater sample at HA-12-13 (OW) identified only cyanide in concentrations above applicable NPDES RGP Effluent Limits.

However, previous samples at the project identified concentrations of tetrachloroethene (PCE) above applicable NPDES RGP Effluent Limits but below applicable MCP RCGW-2 Reportable Concentrations. The results of groundwater quality testing conducted for this NOI are summarized in Table I. The location of the observation well, HA-12-13 (OW), is shown on Figure 2.

Dewatering will be conducted from sumps located inside the excavation support system, and possibly from smaller, local excavations outside the proposed excavation support system, including utility installations and construction of groundwater infiltration systems. Dewatering is necessary to control groundwater, seepage, precipitation, surface water runoff and construction-generated water to enable below-grade construction activities in-the-dry. Below grade construction and temporary construction dewatering is anticipated to start in June 2013.

Prior to discharge, construction dewatering effluent will be routed through a sedimentation tank and a 5 micron bag filter, at a minimum, to remove suspended solids and precipitate from chemical constituents, as shown in the Proposed Treatment System Schematic included in Figure 3 herein. Nonetheless, it is possible that post sedimentation treatment by ion-exchange (IX) or other methods may be necessary for construction dewatering discharge under the NPDES RGP. If needed, a dewatering effluent treatment system will be designed and operated by the Contractor. Construction dewatering under this RGP NOI will include piping and discharging to storm drains located within and near the Site. The storm drains travel a short distance east within the Site and discharge directly into the Muddy River. The proposed discharge route is shown on Figure 2, Subsurface Exploration and Discharge Location Plan.

Appendices

The completed “Suggested Notice of Intent” (NOI) form as provided in the RGP is enclosed in Appendix A. The site operator will be Suffolk Construction (Suffolk). Suffolk is the construction manager and will hire a subcontractor to conduct the Site work, including the dewatering activities. Haley & Aldrich, Inc. (Haley & Aldrich) will monitor the Contractor’s dewatering activities on behalf of BWH. In accordance with the requirements for this NOI submission, BWH as the owner and Suffolk, as the operator, are listed as co-permittees for this NPDES RGP, and therefore both have signed the NOI form (Partners, as an authorized signer, has signed on behalf of BWH).

Appendix B provides Material Safety Data Sheets (MSDSs) and fact sheets for possible chemical additives or treatments to be used in the treatment system. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, is included in Appendix C. Appendices D and E include Endangered Species Act Documentation and National Register of Historic Places, respectively. Please note that the National Register of Historic Places still lists the MMHC buildings, although they were demolished between 2010 and 2011 as noted in the Site History. Appendix F provides the Boston Water and Sewer Commission Dewatering Permit Application to be submitted separately to the Boston Water and Sewer Commission. A copy of the groundwater testing laboratory results are provided in Appendix G.

Dilution Factor Application for Metals

A Dilution Factor (DF) was not calculated as the detected levels of total metals were less than the applicable effluent limits.

Closing

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

Sincerely yours,
HALEY & ALDRICH, INC



Maris Mann-Stadt
Staff Engineer



Cole E. Worthy III, LSP
Senior Project Manager | Vice President

Attachments:

- Table I – Summary of Groundwater Quality Data
- Figure 1 – Site Locus
- Figure 2 – Subsurface Exploration and Discharge Location Plan
- Figure 3 – Proposed Treatment System Schematic
- Appendix A – Notice of Intent (NOI) for Remediation General Permit (RGP)
- Appendix B – Material Safety Data Sheets (MSDSs) and Fact Sheets
- Appendix C – Best Management Practices Plan (BMPP)
- Appendix D – National Register of Historic Places and Massachusetts Historical Commission Documentation
- Appendix E – Endangered Species Act Documentation
- Appendix F – Boston Water and Sewer Commission Dewatering Permit
- Appendix G – Application Laboratory Data Reports

- c: Brigham and Women's Hospital; Attn: Lani Kuzia
Suffolk Construction; Attn: Jason Seaburg
Boston Water and Sewer Commission; Attn: Francis McLaughlin

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TABLE I - SUMMARY OF GROUNDWATER QUALITY DATA
BRIGHAM BUILDING FOR THE FUTURE
BOSTON, MASSACHUSETTS
FILE NO. 35198-101

SAMPLING DESIGNATION SAMPLING DATE LAB SAMPLE ID	2008 MCP RCGW-2 Reportable Concentrations (ug/l)	HA12-4 (OW) 1/30/2013 L1301774-05	HA12-4 (OW) 2/5/2013 L1302108-02	HA12-12 10/5/2012 L1217926-01 L1217926-01 R1	HA12-13 2/19/2013 L1302811-01	HA12-13D 2/19/2013 L1302811-02	HA12-13A (OW) 12/28/2012 L1223492-01	HA12-13A (OW) 1/30/2013 L1301774-06	HA12-13A (OW) 1/31/2013 L1301976-02	HA12-13A (OW) 2/1/2013 L1301976-03	HA12-13 (OW) 1/30/2013 L1301774-04	HA12-13 (OW) 2/21/2013 L1303066-01	MRIVER 2/21/2013 L1303066-02
VOCs (ug/l)													
Tetrachloroethene	50	31	48	-	-	-	ND(0.5)	ND(0.25)	ND(0.5)	ND(0.5)	ND(0.25)	-	-
Trichlorofluoromethane	100000	ND(1.25)	ND(1)	-	-	-	ND(1)	ND(1.25)	ND(1)	ND(1)	7.4	-	-
Trichloroethene	30	2.6	4.2	-	-	-	ND(0.5)	ND(0.25)	ND(0.5)	ND(0.5)	ND(0.25)	-	-
cis-1,2-Dichloroethene	100	4.7	4.4	-	-	-	ND(0.5)	ND(0.25)	ND(0.5)	ND(0.5)	ND(0.25)	-	-
Total VOCs	NA	38.3	56.6	-	-	-	2.3	ND	ND	ND	7.4	-	-
VOCs by GC/MS-SIM (ug/l)													
1,4-Dioxane	6000	-	-	-	-	-	-	-	-	-	ND(1.5)	-	-
SVOCs (ug/l)													
Total SVOCs	NA	-	-	-	-	-	-	-	-	-	ND	-	-
SVOCs by GC/MS-SIM (ug/l)													
Total SVOCs	NA	-	-	-	-	-	-	-	-	-	ND	-	-
Total Metals (ug/l)													
Antimony, Total	8000	-	-	-	-	-	-	-	-	-	ND(2.5)	-	-
Arsenic, Total	900	-	-	-	-	-	-	-	-	-	ND(1.25)	-	-
Cadmium, Total	4	-	-	-	-	-	-	-	-	-	ND(0.5)	-	-
Calcium, Total	NA	-	-	200000	-	-	-	-	-	-	-	-	-
Chromium, Total	300	-	-	-	-	-	-	-	-	-	ND(3.75)	-	-
Chromium, Hexavalent	300	-	-	-	-	-	-	-	-	-	ND(5)	-	-
Copper, Total	100000	-	-	-	-	-	-	-	-	-	ND(2.5)	-	-
Iron, Total	-	-	-	ND(25)	-	-	-	-	-	-	-	-	-
Iron, Total	NA	-	-	ND(25)	-	-	-	-	-	-	ND(25)	-	-
Lead, Total	10	-	-	-	-	-	-	-	-	-	ND(1.25)	-	-
Magnesium, Total	NA	-	-	32000	-	-	-	-	-	-	-	-	-
Manganese, Total	NA	-	-	6570	-	-	-	-	-	-	-	-	-
Mercury, Total	20	-	-	-	-	-	-	-	-	-	ND(0.1)	-	-
Nickel, Total	200	-	-	-	-	-	-	-	-	-	ND(3.75)	-	-
Selenium, Total	100	-	-	-	-	-	-	-	-	-	ND(12.5)	-	-
Silver, Total	7	-	-	-	-	-	-	-	-	-	ND(1)	-	-
Sodium, Total	NA	-	-	370000	-	-	-	-	-	-	-	-	-
Zinc, Total	900	-	-	-	-	-	-	-	-	-	ND(25)	-	-
Dissolved Metals (ug/l)													
Antimony, Dissolved	8000	-	-	-	-	-	-	-	-	-	ND(1)	-	-
Arsenic, Dissolved	900	-	-	-	-	-	-	-	-	-	1.3	-	-
Cadmium, Dissolved	4	-	-	-	-	-	-	-	-	-	ND(0.2)	-	-
Calcium, Dissolved	NA	-	-	210000	-	-	-	-	-	-	-	-	-
Chromium, Dissolved	300	-	-	-	-	-	-	-	-	-	ND(1)	-	-
Copper, Dissolved	100000	-	-	-	-	-	-	-	-	-	2.8	-	-
Iron, Dissolved	-	-	-	ND(25)	-	-	-	-	-	-	-	-	-
Iron, Dissolved	NA	-	-	ND(25)	-	-	-	-	-	-	ND(50)	-	-
Lead, Dissolved	10	-	-	-	-	-	-	-	-	-	ND(1)	-	-
Magnesium, Dissolved	NA	-	-	31000	-	-	-	-	-	-	-	-	-
Manganese, Dissolved	NA	-	-	5580	-	-	-	-	-	-	-	-	-
Mercury, Dissolved	20	-	-	-	-	-	-	-	-	-	ND(0.1)	-	-
Nickel, Dissolved	200	-	-	-	-	-	-	-	-	-	ND(0.5)	-	-
Selenium, Dissolved	100	-	-	-	-	-	-	-	-	-	ND(5)	-	-
Silver, Dissolved	7	-	-	-	-	-	-	-	-	-	ND(0.4)	-	-
Sodium, Dissolved	NA	-	-	340000	-	-	-	-	-	-	-	-	-
Zinc, Dissolved	900	-	-	-	-	-	-	-	-	-	ND(10)	-	-

TABLE I - SUMMARY OF GROUNDWATER QUALITY DATA
BRIGHAM BUILDING FOR THE FUTURE
BOSTON, MASSACHUSETTS
FILE NO. 35198-101

SAMPLING DESIGNATION SAMPLING DATE LAB SAMPLE ID	2008 MCP RCGW-2 Reportable Concentrations (ug/l)	HA12-4 (OW) 1/30/2013 L1301774-05	HA12-4 (OW) 2/5/2013 L1302108-02	HA12-12 10/5/2012 L1217926-01 L1217926-01 R1	HA12-13 2/19/2013 L1302811-01	HA12-13D 2/19/2013 L1302811-02	HA12-13A (OW) 12/28/2012 L1223492-01	HA12-13A (OW) 1/30/2013 L1301774-06	HA12-13A (OW) 1/31/2013 L1301976-02	HA12-13A (OW) 2/1/2013 L1301976-03	HA12-13 (OW) 1/30/2013 L1301774-04	HA12-13 (OW) 2/21/2013 L1303066-01	MRIVER 2/21/2013 L1303066-02
TPH (ug/l)	5000	-	-	-	-	-	-	-	-	-	ND(2000)	-	-
Microextractables by GC (ug/l) 1,2-Dibromoethane	2	-	-	-	-	-	-	-	-	-	ND(0.005)	-	-
Aroclor 1260	5	-	-	-	-	-	-	-	-	-	ND(0.125)	-	-
Total PCBs	NA	-	-	-	-	-	-	-	-	-	ND	-	-
General Chemistry													
Alkalinity, Total (mg CaCO3/L)	NA	-	-	110	-	-	-	-	-	-	-	-	-
Solids, Total Dissolved (ug/l)	NA	-	-	2000000	-	-	-	-	-	-	-	-	-
Solids, Total Suspended (ug/l)	NA	-	-	-	-	-	-	-	-	-	ND(2500)	-	-
Cyanide, Total (ug/l)	30	-	-	-	33	33	-	-	-	-	19	-	-
Cyanide, Amenable (ug/l)	NA	-	-	-	33	34	-	-	-	-	-	-	-
Cyanide, Physiologically Available (ug/l)	30	-	-	-	9	ND(2.5)	-	-	-	-	-	-	-
Chlorine, Total Residual (ug/l)	NA	-	-	-	-	-	-	-	-	-	ND(10)	-	-
Chloride (ug/l)		-	-	-	-	-	-	-	-	-	783000	-	-
Nitrogen, Nitrate (ug/l)	NA	-	-	-	-	-	-	-	-	-	-	920	899
Nitrogen, Total Kjeldahl (ug/l)	NA	-	-	-	-	-	-	-	-	-	-	1450	2890
Phosphorus, Total (ug/l)	NA	-	-	-	-	-	-	-	-	-	-	57	97
Sulfate (ug/l)	NA	-	-	200000	-	-	-	-	-	-	-	-	-
Phenolics, Total (ug/l)	NA	-	-	-	-	-	-	-	-	-	ND(15)	-	-
Hardness (ug/l)	NA	-	-	640000	-	-	-	-	-	-	-	-	-

NOTES & ABBREVIATIONS:

NA: Not Applicable

-: Not Analyzed

ND: Not Detected. Number in parentheses is one-half the laboratory reporting limit.

VOCs: Volatile Organic Compounds

SVOCs: Semivolatile Organic Compounds

TPH: Total Petroleum Hydrocarbons

PCBs: Polychlorinated Biphenyls

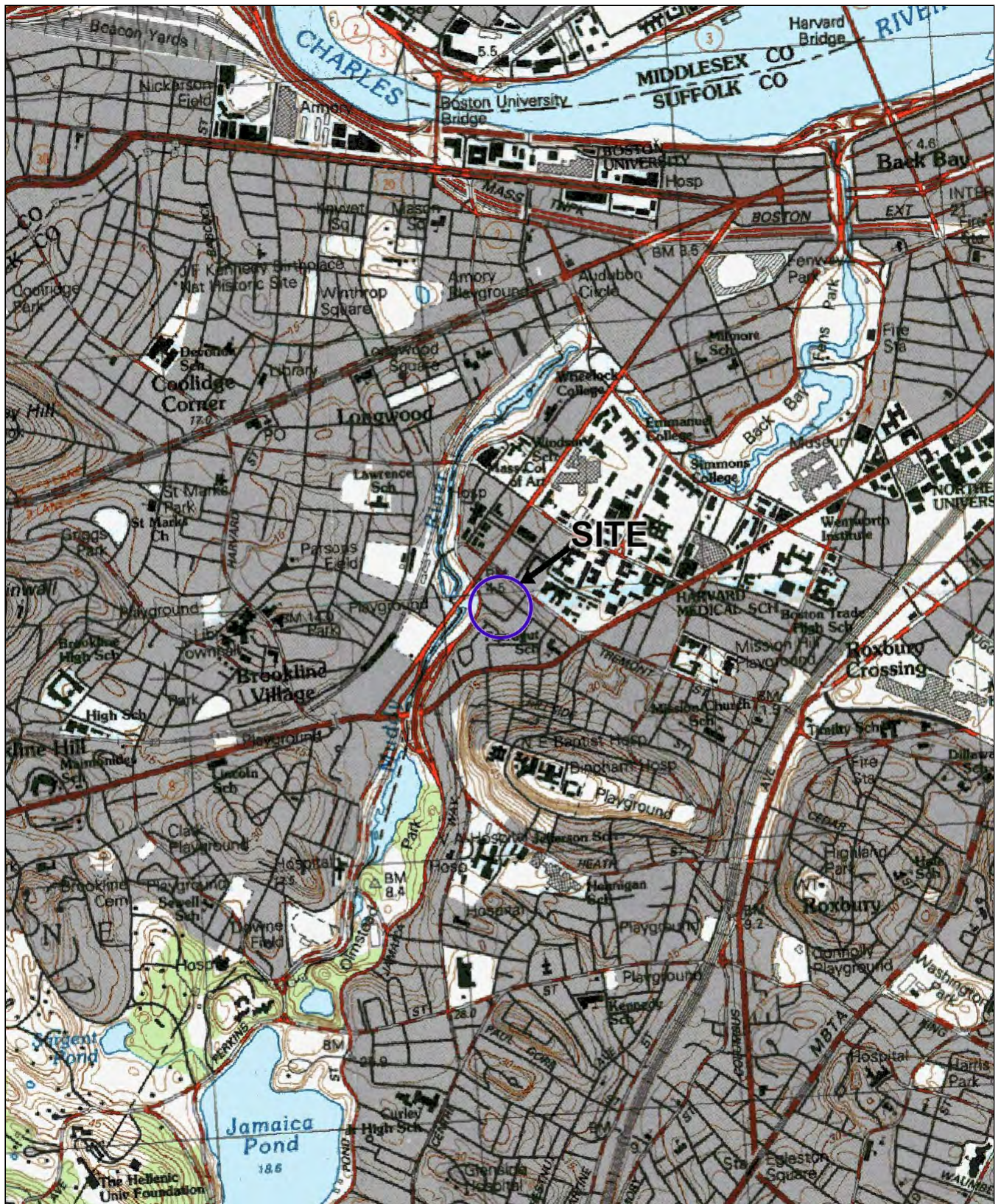
1. Only compounds detected at least once are shown.

2. Bold values indicate an exceedance of applicable RCGW-2 Reportable Concentrations.

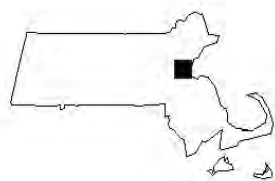
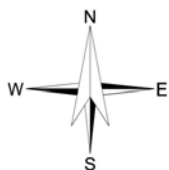
3. For samples HA12-4 (OW), HA12-13A (OW), and HA12-13(OW), the VOC analysis 1,8260C was used. All other VOC analysis was 97, 8260C (MCP-8260-10(14)).

4. The Physiologically Available Cyanide result is slightly higher than the Total Cyanide result. The difference is within % RPD limits.

5. "MRIVER" refers to surface water sample collected from Muddy River near outfall closest to the BBF site.



SITE COORDINATES: 42°20'7"N 71°6'32"W



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

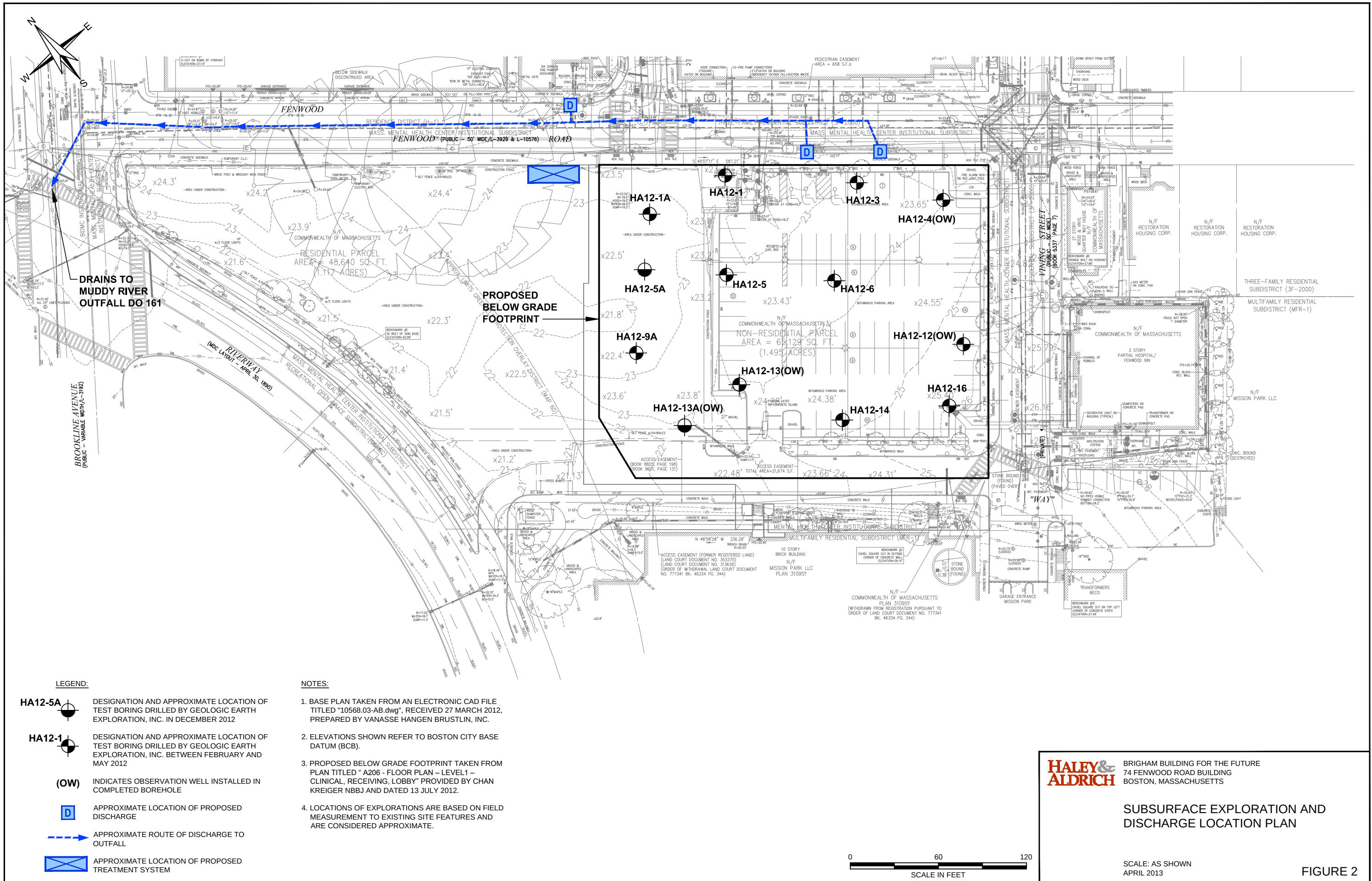
HALEY & ALDRICH

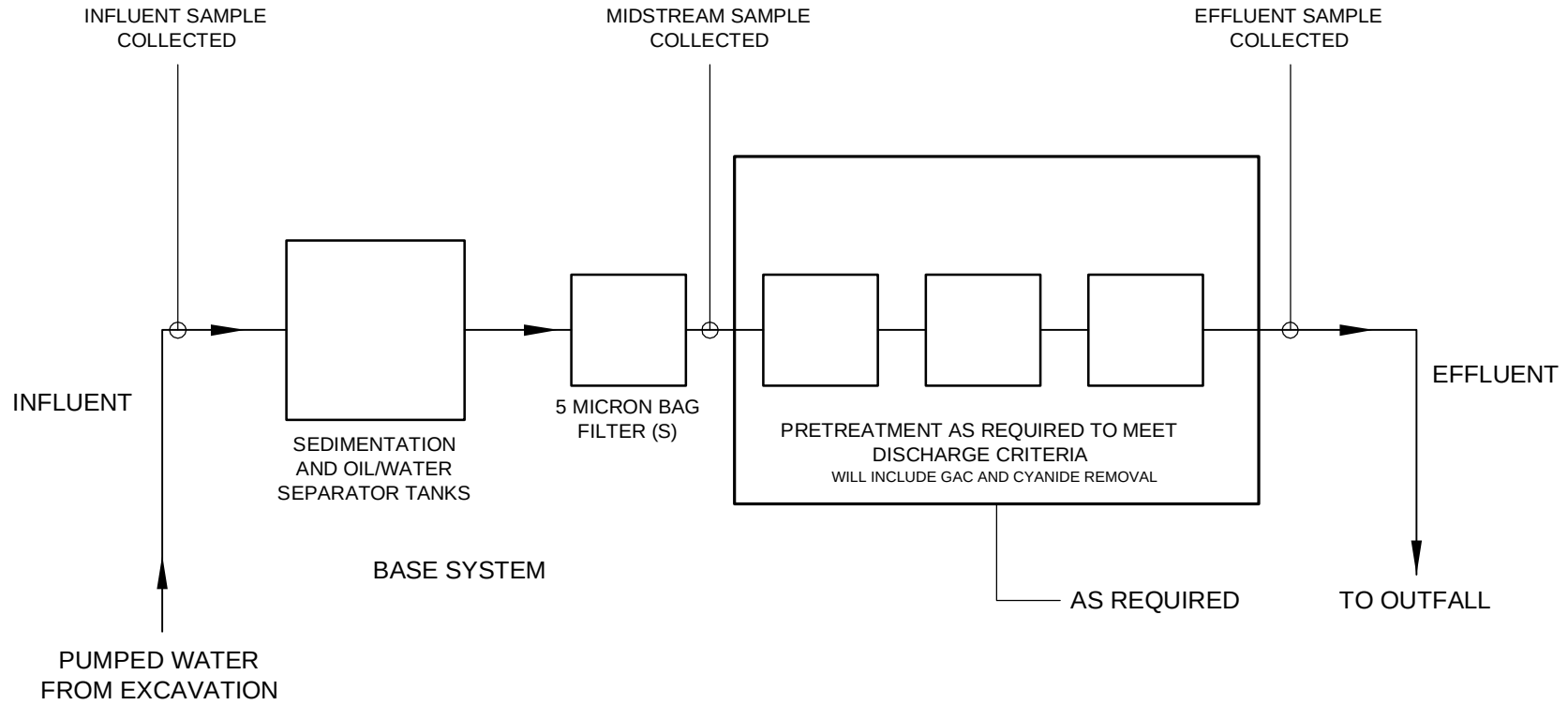
BRIGHAM BUILDING FOR THE FUTURE
BRIGHAM AND WOMEN'S HOSPITAL
75 FENWOOD ROAD
BOSTON, MASSACHUSETTS

PROJECT LOCUS

SCALE: 1:24,000
APRIL 2013

FIGURE 1





LEGEND:

—▶ DIRECTION OF FLOW

NOTE:

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

**HALEY &
ALDRICH**

BRIGHAM BUILDING FOR THE FUTURE
74 FENWOOD ROAD BUILDING
BOSTON, MASSACHUSETTS

**PROPOSED
TREATMENT SYSTEM
SCHEMATIC**

SCALE: NONE
APRIL 2013

FIGURE 3

APPENDIX A

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

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

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

a) Name of facility/site : Brigham Building for the Future		Facility/site mailing address:	
Location of facility/site :	Facility SIC code(s):	Street:	
longitude: 42 20 7.221	---	74 Fenwood Road	
latitude: 71 06 31.177			
b) Name of facility/site owner : Brigham and Women's Hospital		Town: Boston	
Email address of facility/site owner:		State:	Zip:
lkuzia@partners.org		MA	02115
Telephone no. of facility/site owner : 6177303683		County: Suffolk	
Fax no. of facility/site owner : 6177303697		Owner is (check one): 1. Federal ☐ 2. State/Tribal ☐	
Address of owner (if different from site):		3. Private ☒ 4. Other ☐ if so, describe:	
Street: 800 Boylston Street, Suite 1150			
Town: Boston	State: MA	Zip: 02199	County: Suffolk
c) Legal name of operator :		Operator telephone no: 617.807.0175	
Suffolk Construction		Operator fax no.: 6175415908	Operator email: jseaburg@suffolkconstruction.c
Operator contact name and title: Jason Seaburg			
Address of operator (if different from owner):		Street: 65 Allerton Street	
Town: Boston	State: MA	Zip: 02119	County: Suffolk

d) Check Y for “yes” or N for “no” for the following:

1. Has a prior NPDES permit exclusion been granted for the discharge? Y ☐ N ☒, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ☐ N ☒, if Y, date and tracking #:
3. Is the discharge a “new discharge” as defined by 40 CFR 122.2? Y ☒ N ☐
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ☒ N ☐

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ☐ N ☒

If Y, please list:

1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:

1. Multi-Sector General Permit? Y ☐ N ☒,
if Y, number:
2. Final Dewatering General Permit? Y ☐ N ☒,
if Y, number:
3. EPA Construction General Permit? Y ☐ N ☒,
if Y, number:
4. Individual NPDES permit? Y ☐ N ☒,
if Y, number:
5. any other water quality related individual or general permit? Y ☐ N ☒, if Y, number:

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

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

<u>Activity Category</u>	<u>Activity Sub-Category</u>
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/Formely Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐
---------------------------------------	--

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

a) Describe the discharge activities for which the owner/applicant is seeking coverage:			
Temporary construction dewatering			
b) Provide the following information about each discharge:			
1) Number of discharge points:	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft ³ /s)?		
4	Max. flow	0.22	Is maximum flow a design value ? Y ☐ N ☐
	Average flow (include units)	0.06 cfs	Is average flow a design value or estimate? EST
3) Latitude and longitude of each discharge within 100 feet:			
pt.1: lat.	422008.06	long.	710630.14
pt.2: lat.	422008.48	long.	710630.67
pt.3: lat.	422009.49	long.	710632.31
pt.4: lat.		long.	
pt.5: lat.		long.	
pt.6: lat.		long.	
pt.7: lat.		long.	
pt.8: lat.		long.	
etc.			
4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ☒ or seasonal ☐ ?		
NA	Is discharge ongoing? Y ☐ N ☒		
c) Expected dates of discharge (mm/dd/yy): start 6/1/2013 end 6/1/2015			
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)			
ATTACHED AS FIGURE 3 OF NOI SUBMITTAL			

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.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
1. Total Suspended Solids (TSS)		☐	☒	1	GRAB	2540D	5000	ND			
2. Total Residual Chlorine (TRC)		☒	☐	1	GRAB	4500CL-D	20	ND			
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	GRAB	1664A	4000	ND			
4. Cyanide (CN)	57125	☐	☒	3	GRAB	4500CN-CE	5	33			
5. Benzene (B)	71432	☒	☐	7	GRAB	8260C	.5	ND			
6. Toluene (T)	108883	☒	☐	7	GRAB	8260C	1	ND			
7. Ethylbenzene (E)	100414	☒	☐	7	GRAB	8260C	1	ND			
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	7	GRAB	8260C	2	ND			
9. Total BTEX ²	n/a	☒	☐	7	GRAB	8260C	1	ND			
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☒	☐	7	GRAB	14, 504.1	2	ND			
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	7	GRAB	8260C	2	ND			
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	3	GRAB	8260C	10	ND			

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

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

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

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	7	GRAB	8260C	2	ND			
14. Naphthalene	91203	☐	☒	7	GRAB	8260C	2	2.3			
15. Carbon Tetrachloride	56235	☒	☐	7	GRAB	8260C	.5	ND			
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	7	GRAB	8260C	1	ND			
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	7	GRAB	8260C	1	ND			
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	7	GRAB	8260C	1	ND			
18a. Total dichlorobenzene		☒	☐	7	GRAB	8260C	1	ND			
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	7	GRAB	8260C	.75	ND			
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	7	GRAB	8260C	.5	ND			
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	7	GRAB	8260C	.5	ND			
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☒	7	GRAB	8260C	.5	4.7			
23. Methylene Chloride	75092	☒	☐	7	GRAB	8260C	2	ND			
24. Tetrachloroethene (PCE)	127184	☐	☒	7	GRAB	8260C	.5	48			
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	7	GRAB	8260C	.5	ND			
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	7	GRAB	8260C	.75	ND			
27. Trichloroethene (TCE)	79016	☐	☒	7	GRAB	8260C	.5	4.2			

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	7	GRAB	8260C	1	ND			
29. Acetone	67641	☒	☐	7	GRAB	8260C	5	ND			
30. 1,4 Dioxane	123911	☒	☐	5	GRAB	8260C&1,8260C-S	3	ND			
31. Total Phenols	108952	☒	☐	1	GRAB	420.1	30	ND			
32. Pentachlorophenol (PCP)	87865	☒	☐	1	GRAB	GC/MS SIM	0.8	ND			
33. Total Phthalates (Phthalate esters) ⁴		☒	☐	1	GRAB	8270D	NA	ND			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	GRAB	8270D	3	ND			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB	8270D-SIM	0.2	ND			
a. Benzo(a) Anthracene	56553	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
b. Benzo(a) Pyrene	50328	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
c. Benzo(b)Fluoranthene	205992	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
d. Benzo(k)Fluoranthene	207089	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
e. Chrysene	21801	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB	8270D-SIM	0.2	ND			

⁴ The sum of individual phthalate compounds.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
h. Acenaphthene	83329	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
i. Acenaphthylene	208968	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
j. Anthracene	120127	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
k. Benzo(ghi) Perylene	191242	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
l. Fluoranthene	206440	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
m. Fluorene	86737	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
n. Naphthalene	91203	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
o. Phenanthrene	85018	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
p. Pyrene	129000	☒	☐	1	GRAB	8270D-SIM	0.2	ND			
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	GRAB	608	0.25	ND			
38. Chloride	16887006	☐	☒	2	GRAB	300.0	NA	860000			
39. Antimony	7440360	☒	☐	1	GRAB	1, 6020A	.002	ND			
40. Arsenic	7440382	☐	☒	1	GRAB	1, 6020A	.001	1.3			
41. Cadmium	7440439	☒	☐	1	GRAB	1, 6020A	.0004	ND			
42. Chromium III (trivalent)	16065831	☒	☐	1	GRAB	1, 6020A	NA	ND			
43. Chromium VI (hexavalent)	18540299	☒	☐	1	GRAB	1, 6020A	.002	ND			
44. Copper	7440508	☐	☒	1	GRAB	1, 6020A	.002	2.8			
45. Lead	7439921	☒	☐	1	GRAB	1, 6020A	.002	ND			
46. Mercury	7439976	☒	☐	1	GRAB	3,245.1	.0002	ND			
47. Nickel	7440020	☒	☐	1	GRAB	1, 6020A	.001	ND			
48. Selenium	7782492	☒	☐	1	GRAB	1, 6020A	.01	ND			
49. Silver	7440224	☒	☐	1	GRAB	1, 6020A	.0008	ND			
50. Zinc	7440666	☒	☐	1	GRAB	1, 6020A	.02	ND			
51. Iron	7439896	☒	☐	2	GRAB	19,200.7	0.1	ND			
Other (describe):		☒	☐								

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

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

<i>Step 1:</i> 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? NA								
<i>Step 2:</i> 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? <table border="1"> <tr> <td>Metal: NA</td> <td>DF: NA</td> </tr> <tr> <td>Metal: NA</td> <td>DF: NA</td> </tr> <tr> <td>Metal: NA</td> <td>DF: NA</td> </tr> <tr> <td>Metal: NA</td> <td>DF: NA</td> </tr> </table> Etc.	Metal: NA	DF: NA	Metal: NA	DF: NA	Metal: NA	DF: NA	Metal: NA	DF: NA	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: NA
Metal: NA	DF: NA								
Metal: NA	DF: NA								
Metal: NA	DF: NA								
Metal: NA	DF: NA								

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:

ATTACHED AS FIGURE 3 OF NOI SUBMITTAL.

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):	cyanide, pH		

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 gpm Maximum flow rate of treatment system gpm

Design flow rate of treatment system gpm

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

See attached.

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:

DEWATERING EFF. IS PLANNED TO BE DISCHARGED INTO STORM DRAINS LOCATED NEAR SITE. STORM DRAINS DISCHARGE @ OUTFALL NO. 161 INTO MUDDY RIVER

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:

1. For multiple discharges, number the discharges sequentially.

2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water

The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

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

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)?

Is there a final TMDL? Y ☒ N ☐ If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.

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

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

A ☒ B ☐ C ☐ D ☐ E ☐ F ☐

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

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

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

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

1 ☐ 2 ☒ 3 ☐

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

7. Supplemental information.

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

See attached.

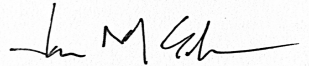
8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

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:	
Operator signature:	
Printed Name & Title:	Lani Kuzia PM-BWH
Date:	

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:	
Operator signature:	
Printed Name & Title:	Jason Seaburg, Senior Project Manager
Date:	5/1/13

APPENDIX B

Material Safety Data Sheets (MSDSs) and Fact Sheets

USFILTER WESTATES CARBON

AQUACARB® 830 AND 1240

Coal based granular activated carbon

(Formerly KG-401 and KG-502)



FOR MUNICIPAL, INDUSTRIAL AND
REMEDIAL WATER TREATMENT

Description & Applications

AquaCarb® 830 and AquaCarb® 1240 are high activity granular activated carbons manufactured from selected grades of bituminous coal. Manufactured by direct activation, they exhibit exceptional hardness and attrition resistance and have become a cost effective choice for use in municipal, industrial and remedial water treatment applications. These high surface area microporous carbons have been specifically developed for the removal of a broad range of organic contaminants from potable, waste and process waters.

- ANSI/NSF Standard 61 classified for use in potable water applications
- Fully conforms to physical, performance and leachability requirements established by the current ANSI/AWWA B604 (which includes the Food Chemical Codex requirements)

- A detailed quality assurance program guarantees consistent quality from lot to lot and shipment to shipment

Quality Control

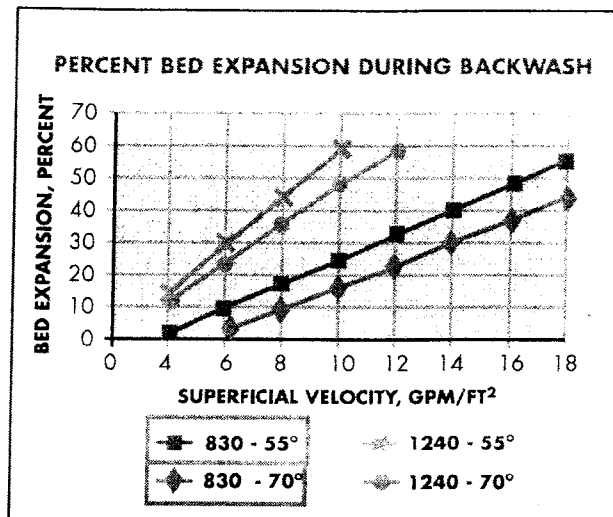
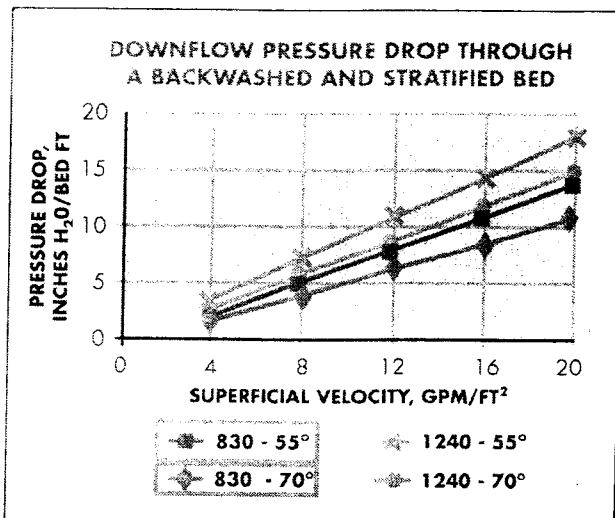
All AquaCarb® activated carbons are extensively quality checked at our State of California certified environmental and carbon testing laboratory located in Los Angeles, CA. USFilter's laboratory is fully equipped to provide complete quality control analyses using ASTM standard test methods in order to assure the consistent quality of all AquaCarb® carbons.

Our technical staff offers hands-on guidance in selecting the most appropriate system, operating conditions and carbon to meet your needs. For more information, contact your nearest USFilter representative.

USFilter

AQUACARB® 830**AQUACARB® 1240****Coal based granular activated carbon**

(Formerly KG-401 and KG-502)



Safety Note: Wet activated carbon depletes oxygen from the air and therefore dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed. Read Material Safety Data Sheet (MSDS) before using this product.

All information presented herein is believed reliable and in accordance with accepted engineering practices. USFilter makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. USFilter assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

SPECIFICATIONS/TYPICAL PROPERTIES

Specification	AquaCarb® 830	AquaCarb® 1240
Carbon Type	Bituminous Coal	Bituminous Coal
Mesh Size, U.S. Sieve	8 x 30	12 x 40
Effective Size, mm	0.8 - 1.1	0.55 - 0.75
Uniformity Coefficient (max)	2.1	1.9
Iodine No., mgI ₂ /g (min.)	900	1000
Abrasion No., Wt. % (min.)	80	80
Apparent Density, g/cc	0.46 - 0.54	0.46 - 0.54

USFilter reserves the right to change the specifications referred to in this literature at any time, without prior notice. AquaCarb is a trademark of United States Filter Corporation or its affiliates.

USFilter

Westates

Customer and

Technical Service Network:

Gulf Coast Region 800.659.1723
 (Louisiana) 225.744.3153
 Western Region 800.659.1771
 Mid-Atlantic Region 800.659.1717
 Midwest Region 708.345.7290
 Northwest Region 800.659.1718
 Southeast Region 225.744.3153
 New England Region 800.659.1717

www.usfilter.com

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APPENDIX C

Best Management Practices Plan (BMPP)

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDATION GENERAL PERMIT
TEMPORARY CONSTRUCTION DEWATERING
BRIGHAM BUILDING FOR THE FUTURE
BOSTON, MASSACHUSETTS**

Best Management Practices Plan

A Notice of Intent (NOI) for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction site dewatering planned to occur during proposed construction of a 12-story building to be used as patient and laboratory space with six levels of below grade parking/laboratory space at the Brigham and Women's Hospital in Boston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

Construction dewatering will be conducted from sumps located inside the excavation, and possibly smaller, local excavations outside the proposed excavation support system. The treatment system will be designed by the contractor. Prior to discharge, collected water will likely be routed through a sedimentation tank with an oil/water separator component or bag filters, at a minimum, to remove suspended solids and precipitate chemical constituents. Supplemental pretreatment is anticipated to be required to meet discharge criteria as shown in the Proposed Treatment System Schematic included in Figure 3. Supplemental pretreatment is anticipated to include Granulated Activated Carbon (GAC), cyanide removal, and a pH regulator. Construction dewatering under this RGP NOI will include piping and discharging to storm drains located near the site. The storm drains travel northwest and discharge at outfall no. 161 directly into the Muddy River.

Discharge Monitoring and Compliance

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

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

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

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

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDATION GENERAL PERMIT
TEMPORARY CONSTRUCTION DEWATERING
BRIGHAM BUILDING FOR THE FUTURE
BOSTON, MASSACHUSETTS**

System Maintenance

A number of methods will be used to minimize the potential for violations for the term of this permit. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. Regular maintenance will include checking the condition of the treatment system equipment such as the fractionization tanks, filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues or unscheduled maintenance requirements.

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

Miscellaneous Items

Due to the nature of the excavation, erosion control and the nature of the site and surrounding infrastructure, it is not anticipated that there will be any run off into the site from other sources, as well as no run off from the site.

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

No adverse affects of designated water uses of surrounding surface water bodies is anticipated. The Muddy River is the nearest surface water body to the site located approximately 0.1 miles from the construction activities on site. As mentioned earlier, the discharged effluent will be pumped directly to a storm drain located near the site and into existing below grade infrastructure.

Management of Treatment System Materials

Groundwater at the site has been impacted by low concentration levels of total cyanide. Groundwater, as remediation waste, will be managed under the MCP as a Release Abatement Measure (RAM) and under this NOI submittal. Dewatering effluent will be pumped directly to the treatment system from the excavation with use of hoses and sumps to minimize handling. The contractor will establish staging areas on the site for any equipment or materials storage which may be possible sources of pollution away from any dewatering activities.

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

APPENDIX D

National Register of Historic Places and Massachusetts Historical Commission Documentation

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

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[MHC Home](#)

Massachusetts Cultural Resource Information System **MACRIS**

Scanned forms and photos now available for selected towns!

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

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

[Click here to begin your search of the MACRIS database.](#)



[Home](#) | [Search](#) | [Index](#) | [Feedback](#) | [Contact](#)

Massachusetts Cultural Resource Information

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: Fenway - Longwood

Street Name: Fenwood

Resource Type(s): Area, Building, Burial Ground, Object, Structure

For more information about this page and how to use it, [click here](#)

Inv. No.	Property Name	Street	Town
BOS.7414	Lyons, John B. Three-Family House	7 Fenwood Rd	Boston
BOS.7410	Farragut Primary School	10 Fenwood Rd	Boston
BOS.7415	Spillane, Jeremiah C. Two-Family House	11 Fenwood Rd	Boston
BOS.7416	Spillane, Jeremiah C. Two-Family House	15 Fenwood Rd	Boston
BOS.7411	Spillane, Jeremiah C. Two-Family House	36 Fenwood Rd	Boston
BOS.7412	Spillane, Jeremiah C. Two-Family House	40 Fenwood Rd	Boston
BOS.7417	Spillane, Jeremiah C. Two-Family House	43 Fenwood Rd	Boston
BOS.7418	Spillane, Jeremiah C. Two-Family House	49 Fenwood Rd	Boston
BOS.7711	Massachusetts Mental Health Center Main Building	74 Fenwood Rd	Boston
BOS.7712	Massachusetts Mental Health Center Power House	74 Fenwood Rd	Boston
BOS.7713	Massachusetts Mental Health Center Research Bldg.	74 Fenwood Rd	Boston
BOS.7714	Massachusetts Mental Health Center Therapeutic Bldg	74 Fenwood Rd	Boston
BOS.9295	Massachusetts Mental Health Center Fence	74 Fenwood Rd	Boston

13 Properties Found

[New Search](#) [New Search — Same Town\(s\)](#) [Previous](#)
[MHC Home](#) | [MACRIS Home](#)

National Park Service U.S. Department of the Interior

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Search

CONNECT WITH US**National Register**[NR Facebook Page](#)[NR Flickr](#)**National Park Service**[NPS Facebook](#)

Q dwrqdd#hj lwu#i#K lwulf\$olfhv

The National Register of Historic Places is the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

Q hz v# #Yhqw

**Landscape Architecture Month»**

The National Register of Historic Places is pleased to promote awareness of and appreciation for historic places important in landscape architecture. This month we highlight the Robert M. Hanes House in Winston-Salem, North Carolina and Mount Airy Forest in Cincinnati, Ohio. [Read more . . .](#)

**Weekly List »****Meridian Road, Tallahassee, Florida**

The road served as one of the major local conduits to move agricultural products from the county's plantations and farms to market in the capital city of Tallahassee and to shipping points on the Gulf of Mexico. In 1824, as a new territory of the United States, a Prime Meridian Marker was placed at the southeast corner of Tallahassee, from which all land surveys in Florida derive their origin. [Read more . .](#)



Registro Nacional de Lugares Históricos

Registro Nacional de Lugares Históricos: National Register of Historic Places**"Poster" Brochure Poster** (in Spanish)

La lista oficial de los lugares históricos de la nación, dignos de conservar, se consigna en el Registro Nacional de Lugares Históricos (National Register of Historic Places). El Registro Nacional fue creado por la Ley Nacional para la Conservación Histórica de 1966 (National Historic Preservation Act) y forma parte de un programa nacional de coordinación y apoyo a esfuerzos tanto públicos como privados, en la identificación, evaluación y protección de los recursos históricos y arqueológicos del país.

Traditional Cultural Properties request for comments**The Period for Comments on Traditional Cultural Properties has been extended until April 2nd, 2013**

The National Register of Historic Places is hosting an e-mail forum to discuss the issues faced with listing TCPs on the National Register.

July 19th GIS webinar recording: Using GIS for Latitude & Longitude Coordinates for NR

This webinar covered the use of on-line mapping programs to determine latitude and longitude coordinates in lieu of UTM references for National Register nominations. The

iTunes
Twitter
YouTube



webinar will provide step-by-step guidance on the use of Google Earth, BING Maps, ArcGIS Explorer, and a true ArcGIS application.

[Draft GIS Map Guidance](#) (word document)

[Recording \(audio and visuals\) of presentation - in WMV format about 1 hour, 36 minutes. Download then play in Window Media Player or similar player. \(44 MB\)](#)



Connect with us on Flickr and Facebook

NR Flickr: See great photographs from our collection, or browse through thousands of fantastic images of historic places taken by a nation of people who love historic properties. Find out more [about Flickr](#).

NR Facebook Page: Like us on Facebook to get automatic updates and find out what's new in history.



For Travelers » »

Travel Itineraries:

As our list of travel itineraries grows, the historic destinations you can visit online or in person are virtually endless! Each itinerary is a self-guided tour to historic places most of which are listed in the National Register of Historic Places. Spotlighting different communities, geographic regions and themes across the country, the travel itineraries expose you to a huge variety of places significant in American history, architecture, archeology, engineering, and culture.



For Teachers »

Teaching with Historic Places Lesson Plans

In honor of Landscape Architecture Month, Teaching with Historic Places is featuring lesson plans that focus on topics such as landscape design, urbanization and planning, and conservation.



National Register of Historic Places [About Us](#) »

88,441 total listings

1,677,773 total contributing resources

1,176 properties listed in Fiscal Year 2012

T x l f n d g n v

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- [Weekly List](#) » Find out what we listed this past week
- [Features](#) »



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Go back to: [Title List](#) | [Revise Search](#)For advanced viewing install **DjVu browser plugin**.

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2. takes about 20 seconds
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Massachusetts Mental Health Center [Image]

URL: <http://pdfhost.focus.nps.gov/docs/NRHP/Text/93001489.pdf>[Link will open in a new browser window](#)URL: <http://pdfhost.focus.nps.gov/docs/NRHP/Photos/93001489.pdf>[Link will open in a new browser window](#)

Publisher: National Park Service

Published: 01/21/1994

Access: Public access

Restrictions: All Rights Reserved

Is Part Of: Massachusetts State Hospitals And State Schools MPS

Format/Size: Physical document with text, photos and map

Language: eng: English

Note: 74 Fenwood Rd.

Item No.: 93001489 *NRIS (National Register Information System)*Subject: **EVENT**Subject: **ARCHITECTURE/ENGINEERING**Subject: **ARCHITECTURE**Subject: **HEALTH/MEDICINE**Subject: **SOCIAL HISTORY**Subject: **LATE GOTHIC REVIVAL**

Subject: [DISTRICT](#)
Subject: [1925-1949](#)
Subject: [1900-1924](#)
Keywords: Kendall, Taylor & Co.; 1912; 1920
Place: MASSACHUSETTS -- Suffolk County -- Boston

Record Number: 420754

Record Owner: National Register of Historic Places

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Last updated: 04/04/13

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APPENDIX E

Endangered Species Act Documentation



New England Field Office

Conserving the Nature of New England

Wednesday,
March 27, 2013

Endangered Species Reviews/Consultations

ENDANGERED SPECIES

Overview
Consultation
N.E. Listed Species
Species Under Review
Recovery Activities
Habitat Conservation
Images
Biological Opinions

PARTNERS FOR FISH & WILDLIFE

Overview
Restoration Initiatives
Species & Habitats of
Special Concern
Accomplishments
How to Participate
Habitat Restoration
Links

ENVIRONMENTAL CONTAMINANTS

Overview
BTAG
NRDAR
Special Studies
Oil Spills

FEDERAL ACTIVITIES

Overview
Federal Projects &
Permits
Wetland Permits
FERC_Hydropower
Projects
River Flow Protection
Wind Energy Projects

OUTREACH

NH Envirothon
Kids Corner
Let's Go Outside

Staff Directory

Our Location

HOME



Endangered Species Consultation Project Review for Projects with Federal Involvement (authorizing, funding or carrying out the project)

The following information is designed to assist applicants or project sponsors in determining whether a federally-listed, proposed and/or candidate species may occur within the proposed project area and whether it is appropriate to contact our office for additional coordination or consultation. We encourage you to print out all materials used in the analyses of effects on listed, proposed or candidate species for your records or submission to the appropriate federal agency or our office.

Step 1. - Determine whether any listed, proposed, or candidate species (T/E species) are likely to occur within the proposed project [action area](#) based on location of the proposed project:

A. Choose your state list below and review for Towns in which federally-listed species occur:

[Connecticut](#) - 12 species (29 KB)
[Massachusetts](#) - 14 species (41 KB)
[New Hampshire](#) - 13 species (31 KB)
[Rhode Island](#) - 8 species (22 KB)
[Vermont](#) - 10 species (25 KB)

B. You should contact your state Natural Heritage Program or Endangered Species Program (see list below) for additional information on federally and state-listed species:

[Rhode Island](#) Natural Heritage Program
[Connecticut](#) Endangered Species Program
Massachusetts [Natural Heritage and Endangered Species Program](#)
Vermont [Non-Game and Natural Heritage](#)
New Hampshire [Fish and Game's Non-game and Endangered Wildlife Program](#)
New Hampshire Natural Heritage Bureau's [Home Page](#)

Please note that these agencies provide information on known occurrences; this information does not replace field surveys, especially for plants, as most project sites have not been previously surveyed specifically for listed species.

C. If the project falls within a Town where the endangered dwarf wedgemussel is known to occur, check the appropriate map to determine whether your project is in the vicinity of its known range.

Massachusetts - [Connecticut River Watershed](#) (912 KB)
New Hampshire/Vermont - [Connecticut River Watershed](#)
[Upper Connecticut River](#) (872 KB)
[Middle Connecticut River](#) (1.07 MB)
[Lower Connecticut River](#) (1.56 MB)
New Hampshire - [Ashuelot River Watershed](#) (886 KB)
Connecticut - [Connecticut River Watershed](#) (2.04 MB)

D. If the project falls within a Town where the endangered northern red-bellied cooter is known to occur, or if the project occurs in Plymouth County, Massachusetts, check the map to determine whether your project is in the vicinity of its known range or critical habitat. [NRBC_MAP](#) (59 KB)

E. If a proposed project occurs in a Town with no known listed, proposed or candidate species present, no further coordination with the Service is needed. You may download a "[no species present](#)" letter (158 KB) stating "no species are known to occur in the project area".

F. If the proposed project occurs in a Town with known occurrences of T/E species, proceed to Step 2.

Step 2. - Determine whether any listed or proposed New England Species are likely to occur within the proposed project area by comparing the habitat present within the proposed project action area with habitat that is suitable for the species.

- Review the information we have provided on the species list information from the appropriate state agency, and any other sources of information available to you to determine types of habitat the species use. A description of suitable habitat for New England's federally-listed species may be found in [New England Species'](#) profiles and fact sheets.
- Determine whether your proposed project action area has any potential for listed species habitat (e.g., are suitable roost trees present? - Indiana bats; are wetlands present? - bog turtles or Northeastern bulrush; will project affect a

waterway? – dwarf wedgemussel). After this initial coarse review, determine whether any more detailed surveys may be appropriate (e.g., survey for dwarf wedgemussels).

- C. If your state Natural Heritage Program or Endangered Species Program does not identify any listed species for the proposed project AND there is no potential habitat for any listed species within the action area, no further coordination with the Service is required. You may download a ["no species present" letter](#) (158 KB) stating "no species are known to occur in the project area".
- D. If you have identified that potential listed species habitat is present although the species has not been documented from that specific location, further coordination with our office is recommended. Please send the results of your assessment including any habitat surveys to:

Supervisor
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301

Include in your letter:

A detailed description of the proposed project, including approximate proposed project construction schedule and project activities (e.g., land clearing, utilities, stormwater management). Site plans are often helpful in our evaluation process.

- A description of the natural characteristics of the property and surrounding area (e.g., forested areas, freshwater wetlands, open waters, and soils). Photographs are often helpful in assessing the habitat. Additionally, please include a description of surrounding land use (residential, agricultural, or commercial).
- The location of the above referenced property and extent of any project related activities or discharges clearly indicated on a copy of a USGS 7.5 Minute Topographic Quadrangle (Quad) with the name of the Quad(s) and latitude/longitude clearly labeled.
- A description of conservation measures to avoid or minimize impacts to listed species.

Why does this matter?- In a case where no habitat is present, a quick and easy determination can be made that further coordination is not necessary. In a case where habitat is present, but you believe that the project activities will not impact listed species, it is important to coordinate with us to ensure that all project activities and all potential effects (direct and indirect) have been considered.

(Please allow 30 days following our receipt of your request for processing.)

Step 3. - Based on the results of the habitat survey and a description of the proposed project (including information as to whether any potential habitat may be directly or indirectly affected), the involved Federal agency may determine:

- The proposed project will result in no effect to any T/E species and no further coordination or consultation with the Service is required;
- Additional information (e.g., surveys) is required to determine whether any T/E species are likely to occur within the proposed project area; or
- The proposed project "may affect" a T/E species and consultation with the Service is required.

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Last updated: January 8, 2013

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

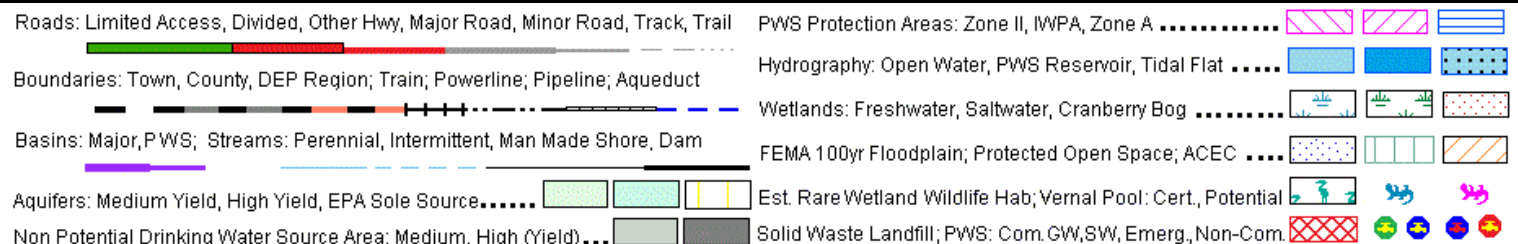
COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open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

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

Revised 10/7/2011

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

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



The Official Website of the Department of Fish and Game (DFG)

Department of Fish and Game

Commissioner Mary B. Griffin

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MassWildlife
 Massachusetts Division of Fisheries & Wildlife

Wayne F. MacCallum, Director



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Massachusetts List of Endangered, Threatened and Special Concern Species

 As published in the Code of Massachusetts Regulations
 February 27, 2012

Quick Links

- » [Index to MESA List](#)
- » [Contact Natural Heritage](#)
- » [Listing Criteria](#)
- » [Listing Proposal](#)

List of Rare Species in Massachusetts

[VERTEBRATES](#)
[INVERTEBRATES](#)
[PLANTS](#)

 Questions/Comments to
natural.heritage@state.ma.us

To access a species fact sheet click on the "Common Name".
 Please note that some species do not have a fact sheet available at this time.

Updated: 12/19/2012

For the most up to date distribution maps please use the [Species Viewer](#) and sort by the species common or scientific name.

VERTEBRATES

Common Name	Scientific Name	MA Status	Fed Status	Notes
Fish				
American Brook Lamprey	Lampetra appendix	T		
Shortnose Sturgeon	Acipenser brevirostrum	E	E	
Atlantic Sturgeon	Acipenser oxyrinchus	E	T	
Lake Chub	Couesius plumbeus	E		
Eastern Silvery Minnow	Hybognathus regius	SC		
Bridle Shiner	Notropis bifrenatus	SC		
Northern Redbelly Dace	Phoxinus eos	E		
Longnose Sucker	Catostomus catostomus	SC		
Burbot	Lota lota	SC		
Threespine Stickleback	Gasterosteus aculeatus	T		1
Amphibians				
Jefferson Salamander	Ambystoma jeffersonianum	SC		2
Blue-Spotted Salamander	Ambystoma laterale	SC		3

Marbled Salamander	Ambystoma opacum	T		
Eastern Spadefoot	Scaphiopus holbrookii	T		
Reptiles				
Loggerhead Seaturtle	Caretta caretta	T	T	
Green Seaturtle	Chelonia mydas	T	T	
Hawksbill Seaturtle	Eretmochelys imbricata	E	E	
Kemp's Ridley Seaturtle	Lepidochelys kempii	E	E	
Leatherback Seaturtle	Dermochelys coriacea	E	E	
Wood Turtle	Glyptemys insculpta	SC		
Bog Turtle	Glyptemys muhlenbergii	E	T	
Blanding's Turtle	Emydoidea blandingii	T		
Diamond-backed Terrapin	Malaclemys terrapin	T		
Northern Red-bellied Cooter	Pseudemys rubriventris	E	E	4
Eastern Box Turtle	Terrapene carolina	SC		
Eastern Wormsnake	Carphophis amoenus	T		
Eastern Ratsnake	Pantherophis alleghaniensis	E		
Copperhead	Agkistrodon contortrix	E		
Timber Rattlesnake	Crotalus horridus	E		
Birds				
Common Loon	Gavia immer	SC		
Pied-Billed Grebe	Podilymbus podiceps	E		
Leach's Storm-Petrel	Oceanodroma leucorhoa	E		
American Bittern	Botaurus lentiginosus	E		
Least Bittern	Ixobrychus exilis	E		
Bald Eagle	Haliaeetus leucocephalus	T		
Northern Harrier	Circus cyaneus	T		
Sharp-Shinned Hawk	Accipiter striatus	SC		
Peregrine Falcon	Falco peregrinus	E		
King Rail	Rallus elegans	T		
Common Moorhen	Gallinula chloropus	SC		
Piping Plover	Charadrius melodus	T	T	
Upland Sandpiper	Bartramia longicauda	E		
Roseate Tern	Sterna dougallii	E	E	
Common Tern	Sterna hirundo	SC		
Arctic Tern	Sterna paradisaea	SC		
Least Tern	Sternula antillarum	SC		
Barn Owl	Tyto alba	SC		
Long-Eared Owl	Asio otus	SC		
Short-Eared Owl	Asio flammeus	E		
Sedge Wren	Cistothorus platensis	E		

Golden-Winged Warbler	Vermivora chrysoptera	E	
Northern Parula	Parula americana	T	
Blackpoll Warbler	Dendroica striata	SC	
Mourning Warbler	Oporornis philadelphia	SC	
Vesper Sparrow	Poocetes gramineus	T	
Grasshopper Sparrow	Ammodramus savannarum	T	
Henslow's Sparrow	Ammodramus henslowii	E	
Eastern Whip-poor-will	Caprimulgus vociferus	SC	
Mammals			
Water Shrew	Sorex palustris	SC	
Rock Shrew	Sorex dispar	SC	
Indiana Myotis	Myotis sodalis	E	E
Small-Footed Myotis	Myotis leibii	E	
Little Brown Myotis	Myotis lucifugus	E	
Tricolored Bat	Perimyotis subflavus	E	
Northern Long-eared Bat	Myotis septentrionalis	E	
Southern Bog Lemming	Synaptomys cooperi	SC	
Sperm Whale	Physeter macrocephalus	E	E
Fin Whale	Balaenoptera physalus	E	E
Sei Whale	Balaenoptera borealis	E	E
Blue Whale	Balaenoptera musculus	E	E
Humpback Whale	Megaptera novaeangliae	E	E
Northern Right Whale	Eubalaena glacialis	E	E

INVERTEBRATES

Common Name	Scientific Name	MA Status	Fed Status	Notes
Sponges				
Smooth Branched Sponge	Spongilla aspinosa	SC		
Flatworms				
Sunderland Spring Planarian	Polycelis remota	E		
Segmented Worms				
New England Medicinal Leech	Macrobdella sestetia	SC		
Snails				
New England Siltsnail	Floridobia winkleyi	SC		
Walker's Limpet	Ferrissia walkeri	SC		
Coastal Marsh Snail	Littoridinops tenuipes	SC		
Slender Walker	Pomatiopsis lapidaria	E		
Boreal Marstonia	Marstonia lustrica	E		
Boreal Turret Snail	Valvata sincera	E		

Mussels

Dwarf Wedgemussel	<i>Alasmidonta heterodon</i>	E	E
Brook Floater (Swollen Wedgemussel)	<i>Alasmidonta varicosa</i>	E	
Yellow Lampmussel	<i>Lampsilis cariosa</i>	E	
Tidewater Mucket	<i>Leptodea ochracea</i>	SC	
Eastern Pondmussel	<i>Ligumia nasuta</i>	SC	
Creeper	<i>Strophitus undulatus</i>	SC	

Crustaceans

Intricate Fairy Shrimp	<i>Eubbranchipus intricatus</i>	SC	
Agassiz's Clam Shrimp	<i>Eulimnadia agassizii</i>	E	
Northern Spring Amphipod	<i>Gammarus pseudolimnaeus</i>	SC	
American Clam Shrimp	<i>Limnadia lenticularis</i>	SC	
Taconic Cave Amphipod	<i>Stygobromus borealis</i>	E	
Piedmont Groundwater Amphipod	<i>Stygobromus tenuis</i>	SC	
Coastal Swamp Amphipod	<i>Synurella chamberlaini</i>	SC	

Dragonflies

Spatterdock Darner	<i>Rhionaeschna mutata</i>	SC	
Subarctic Darner	<i>Aeshna subarctica</i>	E	
Comet Darner	<i>Anax longipes</i>	SC	
Ocellated Darner	<i>Boyeria grafiana</i>	SC	
Spine-Crowned Clubtail	<i>Gomphus abbreviatus</i>	SC	
Harpoon Clubtail	<i>Gomphus descriptus</i>	E	
Midland Clubtail	<i>Gomphus fraternus</i>	E	
Rapids Clubtail	<i>Gomphus quadricolor</i>	E	
Cobra Clubtail	<i>Gomphus vastus</i>	SC	
Skillet Clubtail	<i>Gomphus ventricosus</i>	T	
Umber Shadowdragon	<i>Neurocordulia obsoleta</i>	SC	
Stygian Shadowdragon	<i>Neurocordulia yamaskanensis</i>	SC	
Brook Snaketail	<i>Ophiogomphus aspersus</i>	SC	
Riffle Snaketail	<i>Ophiogomphus carolus</i>	T	
Ski-tipped Emerald	<i>Somatochlora elongata</i>	SC	
Forcipate Emerald	<i>Somatochlora forcipata</i>	E	
Coppery Emerald	<i>Somatochlora georgiana</i>	E	
Incurvate Emerald	<i>Somatochlora incurvata</i>	E	
Kennedy's Emerald	<i>Somatochlora kennedyi</i>	E	
Mocha Emerald	<i>Somatochlora linearis</i>	SC	
Riverine Clubtail	<i>Stylurus amnicola</i>	E	
Ebony Boghaunter	<i>Williamsonia fletcheri</i>	E	
Ringed Boghaunter	<i>Williamsonia lintneri</i>	T	

Damselflies

Tule Bluet	Enallagma carunculatum	SC	
Attenuated Bluet	Enallagma daeckii	T	
Scarlet Bluet	Enallagma pictum	T	
Pine Barrens Bluet	Enallagma recurvatum	T	

Beetles

Twelve-Spotted Tiger Beetle	Cicindela duodecimguttata	SC	
Hentz's Redbelly Tiger Beetle	Cicindela rufiventris hentzii	T	
Northeastern Beach Tiger Beetle	Cicindela dorsalis dorsalis	E	T
Bank Tiger Beetle	Cicindela limbalis	SC	
Cobblestone Tiger Beetle	Cicindela marginipennis	E	
Barrens Tiger Beetle	Cicindela patruela	E	
Puritan Tiger Beetle	Cicindela puritana	E	T
Purple Tiger Beetle	Cicindela purpurea	SC	
American Burying Beetle	Nicrophorus americanus	E	E

Butterflies and Moths

Coastal Heathland Cutworm	Abagrotis nefascia	SC	
Barrens Daggermoth	Acronicta albarufa	T	
Drunk Apamea Moth	Apamea inebriata	SC	
New Jersey Tea Inchworm	Apodrepanulatrix liberaria	E	
Hessel's Hairstreak	Callophrys hesseli	SC	
Frosted Elfin	Callophrys irus	SC	
Bog Elfin	Callophrys lanoraieensis	T	
Gerhard's Underwing	Catocala herodias gerhardi	SC	
Precious Underwing Moth	Catocala pretiosa pretiosa	E	
Waxed Sallow Moth	Chaetagnalea cerata	SC	
Melsheimer's Sack Bearer	Cicinnus melsheimeri	T	
Chain Dot Geometer	Cingilia catenaria	SC	
Unexpected Cycnia	Cycnia inopinatus	T	
Three-Lined Angle Moth	Digrammia eremiata	T	
Imperial Moth	Eacles imperialis	T	
Early Hairstreak	Erora laeta	T	
Persius Duskywing	Erynnis persius persius	E	
Sandplain Euchlaena	Euchlaena madusaria	SC	
Dion Skipper	Euphyes dion	T	
The Pink Streak	Dargida rubripennis	T	
Phyllira Tiger Moth	Grammia phyllira	E	

Slender Clearwing Sphinx Moth	Hemaris gracilis	SC	
Barrens Buckmoth	Hemileuca maia	SC	
Buchholz's Gray	Hypomecis buchholzaria	E	
Pine Barrens Speranza	Speranza exonerata	SC	
Pale Green Pinion Moth	Lithophane viridipallens	SC	
Twilight Moth	Lycia rachelae	E	
Pine Barrens Lycia	Lycia ypsilon	T	
Barrens Metarranthus	Metarranthus apiciaria	E	
Coastal Swamp Metarranthus	Metarranthus pilosaria	SC	
Northern Brocade Moth	Neoligia semicana	SC	
Dune Noctuid Moth	Sympistis riparia	SC	
Pitcher Plant Borer	Papaipema appassionata	T	
Ostrich Fern Borer	Papaipema sp. 2	.SC	5
Chain Fern Borer	Papaipema stenocelis	T	
Water-willow Stem Borer	Papaipema sulphurata	T	
Mustard White	Pieris oleracea	T	
Pink Sallow Moth	Psectraglaea carnosa	SC	
Southern Ptichodis	Ptichodis bistrigata	T	
Orange Sallow Moth	Pyrrhia aurantiago	SC	
Oak Hairstreak	Satyrium favonius	SC	
Spartina Borer	Photedes inops	SC	
Faded Gray Geometer	Stenoporpia polygrammaria	T	
Pine Barrens Zale	Zale lunifera	SC	6
Sandplain Heterocampa	Heterocampa varia	T	
Pine Barrens Zanclognatha	Zanclognatha martha	T	

PLANTS

Common Name	Scientific Name	MA Status	Fed Status	Notes
Adiantaceae (Cliff Ferns)				
Fragile Rock-Brake	Cryptogramma stelleri	E		
Alismataceae (Arrowheads)				
Estuary Arrowhead	Sagittaria montevidensis ssp. spongiosa	E		
Wapato	Sagittaria cuneata	T		
Terete Arrowhead	Sagittaria teres	SC		
Apiaceae (Parsleys, Angelicas)				
Hemlock Parsley	Conioselinum chinense	SC		
Saltpond Pennywort	Hydrocotyle verticillata	T		
Canadian Sanicle	Sanicula canadensis	T		

Long-Styled Sanicle	Sanicula odorata	T
Aquifoliaceae (Hollies)		
Mountain Winterberry	Ilex montana	E
Araceae (Arums)		
Green Dragon	Arisaema dracontium	T
Golden Club	Orontium aquaticum	E
Araliaceae (Ginsengs)		
Ginseng	Panax quinquefolius	SC
Asclepiadaceae (Milkweeds)		
Purple Milkweed	Asclepias purpurascens	E
Linear-Leaved Milkweed	Asclepias verticillata	T
Aspleniaceae (Spleenworts)		
Mountain Spleenwort	Asplenium montanum	E
Wall-Rue Spleenwort	Asplenium ruta-muraria	T
Asteraceae (Asters, Composites)		
Lesser Snakeroot	Ageratina aromatica	E
Eaton's Beggar-ticks	Bidens eatonii	E
Estuary Beggar-ticks	Bidens hyperborea	E
Cornel-leaved Aster	Doellingeria infirma	E
New England Boneset	Eupatorium novae-angliae	E
Purple Cudweed	Gamochaeta purpurea	E
New England Blazing Star	Liatris scariosa var. novae-angliae	SC
Lion's Foot	Nabalus serpentarius	E
Sweet Coltsfoot	Petasites frigidus var. palmatus	E
Sclerolepis	Sclerolepis uniflora	E
Large-Leaved Goldenrod	Solidago macrophylla	T
Upland White Aster	Oligoneuron album	E
Rand's Goldenrod	Solidago simplex ssp. randii var. monticola	E
Eastern Silvery Aster	Symphyotrichum concolor	E
Crooked-Stem Aster	Symphyotrichum prenanthoides	SC
Tradescant's Aster	Symphyotrichum tradescantii	T
Betulaceae (Birches, Alders)		
Mountain Alder	Alnus viridis ssp. crispa	T
Swamp Birch	Betula pumila	E

Boraginaceae (Borages)

Northern Wild Comfrey	Cynoglossum virginianum var. boreale	E
Oysterleaf	Mertensia maritima	E

Brassicaceae (Mustards)

Lyre-Leaved Rock-cress	Arabidopsis lyrata	E
Smooth Rock-cress	Boechera laevigata	SC
Green Rock-cress	Boechera missouriensis	T
Purple Cress	Cardamine douglassii	E
Long's Bitter-cress	Cardamine longii	E
Fen Cuckoo Flower	Cardamine dentata	T

Cactaceae (Cacti)

Prickly Pear	Opuntia humifusa	E
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Campanulaceae (Bluebells, Lobelias)

Great Blue Lobelia	Lobelia siphilitica	E
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Caprifoliaceae (Honeysuckles)

Hairy Honeysuckle	Lonicera hirsuta	E
Snowberry	Symphoricarpos albus var. albus	E
Broad Tinker's-weed	Triosteum perfoliatum	E
Downy Arrowwood	Viburnum rafinesquianum	E

Caryophyllaceae (Pinks, Sandworts)

Nodding Chickweed	Cerastium nutans	E
Michaux's Sandwort	Minuartia michauxii	T
Large-leaved Sandwort	Moehringia macrophylla	E
Silverling	Paronychia argyrocoma	E

Celastraceae (Staff Tree Family)

American Bittersweet	Celastrus scandens	T
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Chenopodiaceae (Saltworts)

Fogg's Goosefoot	Chenopodium foggii	E
American Sea-blite	Suaeda calceoliformis	SC

Cistaceae (Rockroses, Pinweeds)

Bushy Rockrose	Crocanthemum dumosum	SC
Beaded Pinweed	Lechea pulchella var. moniliformis	E

Clusiaceae (St. John's-worts)

Creeping St. John's-wort	Hypericum adpressum	T
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Creeping Scaevola	Hypericum ascyron	E
Giant St. John's-wort	Hypericum ascyron	E
St. Andrew's Cross	Hypericum stragulum	E
Convolvulaceae (Morning Glories)		
Low Bindweed	Calystegia spithamea	E
Crassulaceae (Sedums)		
Pygmyweed	Crassula aquatica	T
Cupressaceae (Cedars, Junipers)		
Arborvitae	Thuja occidentalis	E
Cyperaceae (Sedges)		
Foxtail Sedge	Carex alopecoidea	T
Back's Sedge	Carex backii	E
Bailey's Sedge	Carex baileyi	T
Bush's Sedge	Carex bushii	E
Chestnut-colored Sedge	Carex castanea	E
Creeping Sedge	Carex chordorrhiza	E
Davis' Sedge	Carex davisii	E
Glaucous Sedge	Carex glaucodea	E
Handsome Sedge	Carex formosa	T
Slender Woodland Sedge	Carex gracilescens	E
Gray's Sedge	Carex grayi	T
Hitchcock's Sedge	Carex hitchcockiana	SC
Shore Sedge	Carex lenticularis	T
Glaucous Sedge	Carex livida	E
False Hop-sedge	Carex lupuliformis	E
Midland Sedge	Carex mesochorea	E
Michaux's Sedge	Carex michauxiana	E
Mitchell's Sedge	Carex mitchelliana	T
Rich Woods Sedge	Carex oligocarpa	T
Few-seeded Sedge	Carex oligosperma	E
Few-flowered Sedge	Carex pauciflora	E
Variable Sedge	Carex polymorpha	E
Schweinitz's Sedge	Carex schweinitzii	E
Dioecious Sedge	Carex sterilis	T
Walter's Sedge	Carex striata	E
Fen Sedge	Carex tetanica	SC
Hairy-fruited Sedge	Carex trichocarpa	SC
Tuckerman's Sedge	Carex tuckermanii	E
Cat-tail Sedge	Carex typhina	T
Engelmann's Umbrella-sedge	Cyperus engelmannii	T

Houghton's Flatsedge	<i>Cyperus houghtonii</i>	E	
Wright's Spike-rush	<i>Eleocharis diandra</i>	E	
Intermediate Spike-sedge	<i>Eleocharis intermedia</i>	T	
Tiny-fruited Spike-rush or Spike-sedge	<i>Eleocharis microcarpa</i> var. <i>filiculmis</i>	E	
Ovate Spike-rush or Spike-sedge	<i>Eleocharis ovata</i>	E	
Few-flowered Spike-sedge	<i>Eleocharis quinqueflora</i>	E	
Three-angled Spike-sedge	<i>Eleocharis tricostata</i>	E	
Slender Cottongrass	<i>Eriophorum gracile</i>	T	
Dwarf Bulrush	<i>Lipocarpa micrantha</i>	T	
Capillary Beak-sedge	<i>Rhynchospora capillacea</i>	E	
Inundated Horned-sedge	<i>Rhynchospora inundata</i>	T	
Short-beaked Bald-sedge	<i>Rhynchospora nitens</i>	T	
Long-beaked Bald-sedge	<i>Rhynchospora scirpoides</i>	SC	
Torrey's Beak-sedge	<i>Rhynchospora torreyana</i>	E	
Northeastern Bulrush	<i>Scirpus ancistrochaetus</i>	E	E
Long's Bulrush	<i>Scirpus longii</i>	T	
Papillose Nut-sedge	<i>Scleria pauciflora</i>	E	7
Tall Nut-sedge	<i>Scleria triglomerata</i>	E	
Dryopteridaceae (Wood Ferns)			
Braun's Holly-fern	<i>Polystichum braunii</i>	E	
Smooth Woodsia	<i>Woodsia glabella</i>	E	
Elatinaceae (Waterworts)			
American Waterwort	<i>Elatine americana</i>	E	
Equisetaceae (Horsetails)			
Dwarf Scouring-rush	<i>Equisetum scirpoides</i>	SC	
Ericaceae (Laurels, Blueberries)			
Great Laurel	<i>Rhododendron maximum</i>	T	
Mountain Cranberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	E	
Eriocaulaceae (Pipeworts)			
Parker's Pipewort	<i>Eriocaulon parkeri</i>	E	
Fabaceae (Beans, Peas, Clovers)			
Large-bracted Tick-trefoil	<i>Desmodium cuspidatum</i>	T	
Wild Senna	<i>Senna hebecarpa</i>	E	
Fagaceae (Oaks, Beeches)			
Bur Oak	<i>Quercus macrocarpa</i>	SC	

Yellow Oak	<i>Quercus muehlenbergii</i>	T
Fumariaceae (Fumitories)		
Climbing Fumitory	<i>Adlumia fungosa</i>	SC
Gentianaceae (Gentians)		
Andrew's Bottle Gentian	<i>Gentiana andrewsii</i>	E
Spurred Gentian	<i>Halenia deflexa</i>	E
Slender Marsh Pink	<i>Sabatia campanulata</i>	E
Plymouth Gentian	<i>Sabatia kennedyana</i>	SC
Sea Pink	<i>Sabatia stellaris</i>	E
Grossulariaceae (Currants)		
Bristly Black Currant	<i>Ribes lacustre</i>	SC
Haemodoraceae (Redroots)		
Redroot	<i>Lachnanthes carolina</i>	SC
Haloragaceae (Water-milfoils)		
Alternate-flowered Water-milfoil	<i>Myriophyllum alterniflorum</i>	E
Farwell's Water-milfoil	<i>Myriophyllum farwellii</i>	E
Pinnate Water-milfoil	<i>Myriophyllum pinnatum</i>	SC
Comb Water-milfoil	<i>Myriophyllum verticillatum</i>	E
Hydrophyllaceae (Waterleaves)		
Broad Waterleaf	<i>Hydrophyllum canadense</i>	E
Hymenophyllaceae (Filmy-ferns)		
Appalachian Bristle-fern	<i>Trichomanes intricatum</i>	E
Iridaceae (Irises)		
Sandplain Blue-eyed Grass	<i>Sisyrinchium fuscum</i>	SC
Slender Blue-eyed Grass	<i>Sisyrinchium mucronatum</i>	E
Isoetaceae (Quillworts)		
Acadian Quillwort	<i>Isoetes acadiensis</i>	E
Lake Quillwort	<i>Isoetes lacustris</i>	E
Juncaceae (Rushes)		
Weak Rush	<i>Juncus debilis</i>	E
Thread Rush	<i>Juncus filiformis</i>	E
Black-fruited Woodrush	<i>Luzula parviflora</i> ssp. <i>melanocarpa</i>	E
Lamiaceae (Mints)		
Purple Giant-hyssop	<i>Agastache scrophulariifolia</i>	E
Downy Wood-mint	<i>Blephilia ciliata</i>	E
Hair Wood-mint	<i>Blephilia hirsuta</i>	E

Many wood-runt	<i>Dieffenbachia purpurea</i>	E
Gypsywort	<i>Lycopus rubellus</i>	E
False Pennyroyal	<i>Trichostema brachiatum</i>	E
Lentibulariaceae (Bladderworts)		
Resupinate Bladderwort	<i>Utricularia resupinata</i>	T
Subulate Bladderwort	<i>Utricularia subulata</i>	SC
Liliaceae (Lilies)		
Devil's-bit	<i>Chamaelirium luteum</i>	E
Linaceae (Flaxes)		
Sandplain Flax	<i>Linum intercursum</i>	SC
Rigid Flax	<i>Linum medium</i> var. <i>texanum</i>	T
Lycopodiaceae (Clubmosses)		
Foxtail Clubmoss	<i>Lycopodiella alopecuroides</i>	E
Appalachian Firmoss	<i>Huperzia appressa</i>	E
Mountain Firmoss	<i>Huperzia selago</i>	E
Lythraceae (Loosestrifes)		
Toothcup	<i>Rotala ramosior</i>	E
Magnoliaceae (Magnolias)		
Sweetbay Magnolia	<i>Magnolia virginiana</i>	E
Melastomataceae (Meadow Beauties)		
Maryland Meadow Beauty	<i>Rhexia mariana</i>	E
Moraceae (Mulberries)		
Red Mulberry	<i>Morus rubra</i>	E
Nymphaeaceae (Water Lilies)		
Tiny Cow-lily	<i>Nuphar microphylla</i>	E
Onagraceae (Evening Primroses)		
Many-fruited False-loosestrife	<i>Ludwigia polycarpa</i>	E
Round-fruited False-loosestrife	<i>Ludwigia sphaerocarpa</i>	E
Ophioglossaceae (Grape Ferns)		
Adder's-tongue Fern	<i>Ophioglossum pusillum</i>	T
Orchidaceae (Orchids)		
Putty-root	<i>Aplectrum hyemale</i>	E
Arethusa	<i>Arethusa bulbosa</i>	T
Autumn Coralroot	<i>Corallorhiza odontorhiza</i>	SC
Ram's-head Lady's-slipper	<i>Cypripedium arietinum</i>	E

Small Yellow Lady's-slipper	Cypripedium parviflorum var. makasin	E	
Showy Lady's-slipper	Cypripedium reginae	E	
Dwarf Rattlesnake-plantain	Goodyera repens	E	
Small Whorled Pogonia	Isotria medeoloides	E	T
Lily-leaf Twayblade	Liparis liliifolia	T	
Heartleaf Twayblade	Listera cordata	E	
Bayard's Green Adder's-mouth	Malaxis bayardii	E	
White Adder's-mouth	Malaxis monophyllos var. brachypoda	E	
Crested Fringed Orchis	Platanthera cristata	E	
Leafy White Orchis	Platanthera dilatata	T	
Pale Green Orchis	Platanthera flava var. herbiola	T	
Hooded Ladies'-tresses	Spiranthes romanzoffiana	E	
Grass-leaved Ladies'-tresses	Spiranthes vernalis	T	
Crane-fly Orchid	Tipularia discolor	E	
Nodding Pogonia	Triphora trianthophora	E	
Oxalidaceae (Wood-sorrels)			
Violet Wood-sorrel	Oxalis violacea	E	
Poaceae (Grasses)			
Annual Peanutgrass	Amphicarpum amphicarpon	E	
Purple Needlegrass	Aristida purpurascens	T	
Seabeach Needlegrass	Aristida tuberculosa	T	
Reed Bentgrass	Calamagrostis pickeringii	E	
New England Northern Reedgrass	Calamagrostis stricta ssp. inexpansa	E	
Tufted Hairgrass	Deschampsia cespitosa ssp. glauca	E	
Commons's Panic-grass	Dichanthelium ovale ssp. pseudopubescens	SC	
Mattamuskeet Panic-grass	Dichanthelium dichotomum ssp. mattamuskeetense	E	
Rough Panic-grass	Dichanthelium scabriusculum	T	
Wright's Panic-grass	Dichanthelium wrightianum	SC	
Hairy Wild Rye	Elymus villosus	E	
Frank's Lovegrass	Eragrostis frankii	SC	
Saltpond Grass	Leptochloa fusca ssp. fascicularis	T	
Sea Lyme-grass	Leymus mollis	E	
Woodland Millet	Milium effusum	T	
Gattinger's Panic-grass	Panicum philadelphicum ssp. gattingeri	SC	
Long-Leaved Panic-grass	Panicum rigidulum ssp. pubescens	T	

Philadelphia Panic-grass	<i>Panicum philadelphicum</i> ssp. <i>philadelphicum</i>	SC
Drooping Speargrass	<i>Poa saltuensis</i> ssp. <i>languida</i>	E
Bristly Foxtail	<i>Setaria parviflora</i>	SC
Salt Reedgrass	<i>Spartina cynosuroides</i>	T
Shining Wedgegrass	<i>Sphenopholis nitida</i>	T
Swamp Oats	<i>Sphenopholis pensylvanica</i>	T
Small Dropseed	<i>Sporobolus neglectus</i>	E
Northern Gama-grass	<i>Tripsacum dactyloides</i>	E
Spiked False-oats	<i>Trisetum spicatum</i>	E
Polygonaceae (Docks, Knotweeds)		
Strigose Knotweed	<i>Persicaria setacea</i>	T
Sea-beach Knotweed	<i>Polygonum glaucum</i>	SC
Pondshore Knotweed	<i>Persicaria puritanorum</i>	SC
Seabeach Dock	<i>Rumex pallidus</i>	T
Swamp Dock	<i>Rumex verticillatus</i>	T
Portulacaceae (Spring Beauties)		
Narrow-leaved Spring Beauty	<i>Claytonia virginica</i>	E
Potamogetonaceae (Pondweeds)		
Algae-like Pondweed	<i>Potamogeton confervoides</i>	T
Fries' Pondweed	<i>Potamogeton friesii</i>	E
Hill's Pondweed	<i>Potamogeton hillii</i>	SC
Ogden's Pondweed	<i>Potamogeton ogdenii</i>	E
Straight-leaved Pondweed	<i>Potamogeton strictifolius</i>	E
Vasey's Pondweed	<i>Potamogeton vaseyi</i>	E
Pyrolaceae (Shinleaf)		
Pink Pyrola	<i>Pyrola asarifolia</i> ssp. <i>asarifolia</i>	E
Ranunculaceae (Buttercups)		
Black Cohosh	<i>Actaea racemosa</i>	E
Purple Clematis	<i>Clematis occidentalis</i>	SC
Golden Seal	<i>Hydrastis canadensis</i>	E
Tiny-flowered Buttercup	<i>Ranunculus micranthus</i>	E
Bristly Buttercup	<i>Ranunculus pensylvanicus</i>	SC
Rosaceae (Roses, Shadbushes)		
Small-flowered Agrimony	<i>Agrimonia parviflora</i>	E
Hairy Agrimony	<i>Agrimonia pubescens</i>	T
Bartram's Shadbush	<i>Amelanchier bartramiana</i>	T

Roundleaf Shadbush	<i>Amelanchier sanguinea</i>	SC	
Bicknell's Hawthorn	<i>Crataegus bicknellii</i>	E	
Sandbar Cherry	<i>Prunus pumila</i> var. <i>depressa</i>	T	
Northern Prickly Rose	<i>Rosa acicularis</i> ssp. <i>sayi</i>	E	
Northern Mountain-ash	<i>Sorbus decora</i>	E	
Barren Strawberry	<i>Geum fragarioides</i>	SC	
Rubiaceae (Bedstraws, Bluets)			
Northern Bedstraw	<i>Galium boreale</i>	E	
Labrador Bedstraw	<i>Galium labradoricum</i>	T	
Long-leaved Bluet	<i>Houstonia longifolia</i>	E	
Salicaceae (Willows)			
Swamp Cottonwood	<i>Populus heterophylla</i>	E	
Sandbar Willow	<i>Salix exigua</i> ssp. <i>interior</i>	T	
Scheuchzeriaceae (Pod-grasses)			
Pod-grass	<i>Scheuchzeria palustris</i>	E	
Schizaeaceae (Climbing Ferns)			
Climbing Fern	<i>Lygodium palmatum</i>	SC	
Scrophulariaceae (Figworts)			
Sandplain Gerardia	<i>Agalinis acuta</i>	E	E
Winged Monkey-flower	<i>Mimulus alatus</i>	E	
Muskflower	<i>Mimulus moschatus</i>	E	
Swamp Lousewort	<i>Pedicularis lanceolata</i>	E	
Hairy Beardtongue	<i>Penstemon hirsutus</i>	E	
Sessile Water-speedwell	<i>Veronica catenata</i>	E	
Culver's-root	<i>Veronicastrum virginicum</i>	T	
Sparganiaceae (Bur-reeds)			
Small Bur-reed	<i>Sparganium natans</i>	E	
Verbenaceae (Vervains)			
Narrow-leaved Vervain	<i>Verbena simplex</i>	E	
Violaceae (Violets)			
Sand Violet	<i>Viola adunca</i>	SC	
Britton's Violet	<i>Viola brittoniana</i>	T	
Viscaceae (Christmas-mistletoes)			
Dwarf Mistletoe	<i>Arceuthobium pusillum</i>	SC	

1. Trimorphic freshwater population only.

2. Including triploid and other polyploid forms within the *Ambystoma jeffersonianum*/*Ambystoma laterale* complex.

3. Ditto

4. This species is listed by the U. S. Fish and Wildlife Service as *P. r. bangsi* (Plymouth Redbelly Turtle) in 50 CFR 17.11.

5. Undescribed species near *P. pterisii*

6. True *Z. lunifera*, sensu Schmidt (2010)

7. Includes the two varieties of this species that occur in Massachusetts: s.p. var. *pauciflora* and s.p. var. *caroliniana*.

Definitions

"Endangered" (E) species are native species which are in danger of extinction throughout all or part of their range, or which are in danger of extirpation from Massachusetts, as documented by biological research and inventory.

"Threatened" (T) species are native species which are likely to become endangered in the foreseeable future, or which are declining or rare as determined by biological research and inventory.

"Special concern" (SC) species are native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened within Massachusetts.

Any native species listed as endangered or threatened by the U.S. Fish and Wildlife Service is also included on the state list. The rules and regulations and precise definitions relative to the establishment of the Commonwealth's list of endangered, threatened, and special concern species are set forth in 321 CMR 10.00 et seq. [View a key to the Federal Status abbreviations appearing on the list.](#)

1. Introduction - The list in 321 CMR 10.90 contains the names of all species of plants and animals which have been determined to be Endangered, Threatened, or of Special Concern pursuant to M.G.L. c. 131A and 321 CMR 10.03.

2. List Format - The columns entitled "Common Name" and "Scientific Name" define the species listed. In the "Status" columns the following symbols are used: "E" for Endangered, "T" for Threatened, and "SC" for Special Concern. The status defined under the "MA" column denotes the official status of the species in Massachusetts pursuant to M.G.L. c. 131A and 321 CMR 10.00. The status under the "US" column is the status of the species under the federal Endangered Species Act at the time of the latest revision of 321 CMR 10.00 and is given for informational purposes only. Recent changes in the federal list might not be reflected on this list. The U.S. Fish and Wildlife Service should be consulted for official and up to date information on the federal status of any species. Inquiries may be made by writing to U.S. Fish and Wildlife Service, 70 Commercial Street, Suite 300, Concord, NH 03301-5087. The "Taxonomic Family/Taxonomic Group" column of the list is included for the purpose of organization. The "Notes" column directs the reader to footnotes which further define or clarify the status of a species or alternative names of species.

3. Organization of the List - The list is generally organized according to the relationship of the listed species as determined by the science of taxonomy, which groups and categorizes species that are similar on the basis of shared evolutionary descent. The most basic division in the list is between animals and plants. Within animals the list is divided between vertebrates, (animals with backbones) and invertebrates (animals without backbones). Within vertebrates, invertebrates, and plants, the list is further divided into categories which are generally recognized, such as fish, mammals, dragonflies, and violets. All such information has no regulatory effect and is provided only for the purpose of organizing the list.

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Massachusetts Division of Fisheries and Wildlife, 100 Hartwell Street, Suite 230, West Boylston MA 01583

Tel: (508) 389-6300; Fax: (508) 389-7890



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 7, 2013

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Brett Hillman of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN

November 2010

Total Approximate Acreage: 268,000 acres

Approximate acreage and designation date follow ACEC names below.

Bourne Back River

(1,850 acres, 1989) Bourne

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

Cedar Swamp

(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley

(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed

(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor

(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog

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

Golden Hills

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

Great Marsh (originally designated as Parker River/Essex Bay)

(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed

(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed

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

Hockomock Swamp

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

Inner Cape Cod Bay

(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin

(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed

(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds

(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary

(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag

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

Pleasant Bay

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

Pocasset River

(160 acres, 1980) Bourne

Rumney Marshes

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

Sandy Neck Barrier Beach System

(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin

(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit

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

Three Mile River Watershed

(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River

(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay

(2,580 acres, 1979) Falmouth and Mashpee

Weir River

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

Wellfleet Harbor

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

Weymouth Back River

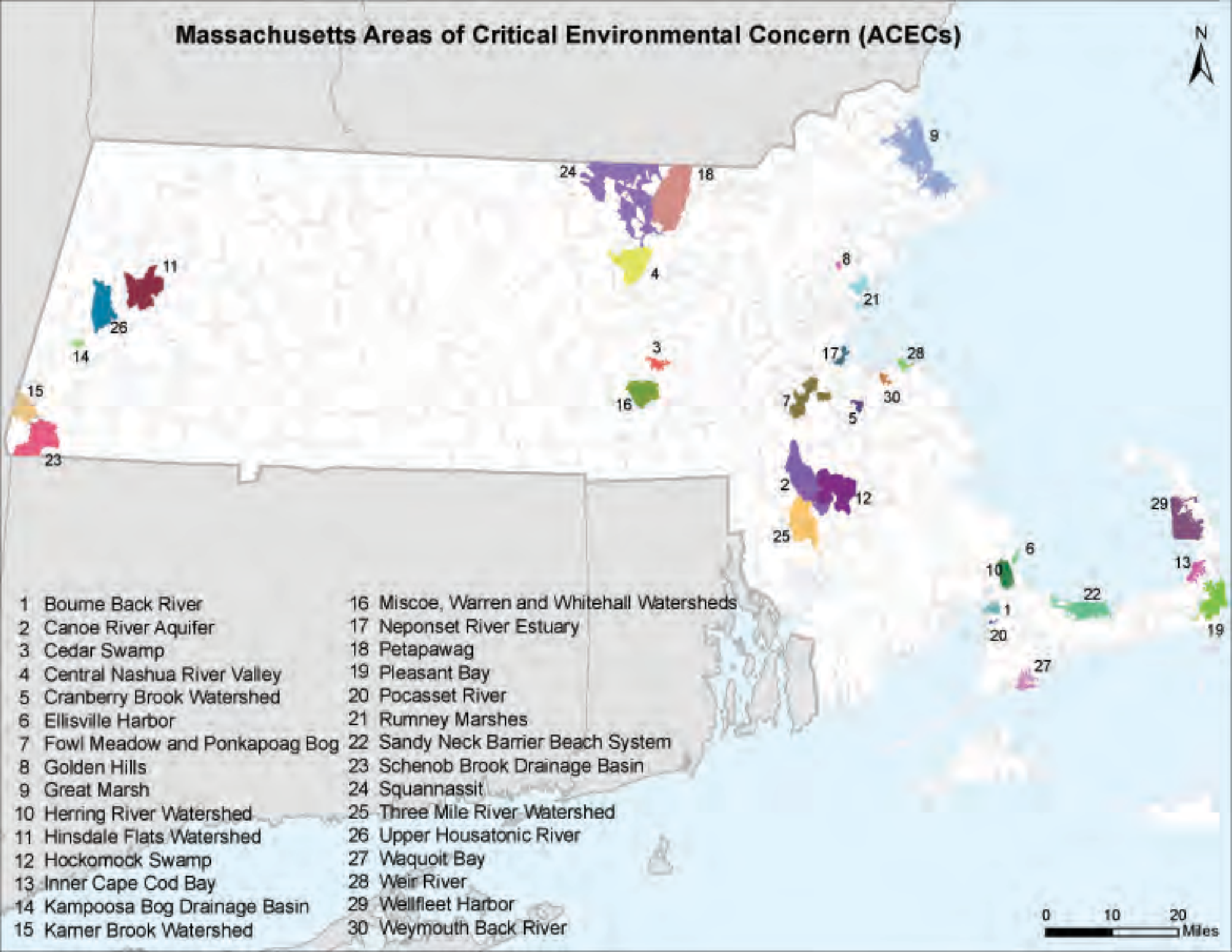
(800 acres, 1982) Hingham and Weymouth

Towns with ACECs within their Boundaries

November 2010

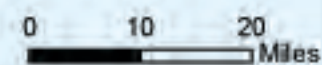
TOWN	ACEC	TOWN	ACEC
Ashby	Squannassit	Mt. Washington	Karner Brook Watershed
Ayer	Petapawag		Schenob Brook
	Squannassit	Newbury	Great Marsh
Barnstable	Sandy Neck Barrier Beach System	Norton	Hockomock Swamp
Bolton	Central Nashua River Valley		Canoe River Aquifer
Boston	Rumney Marshes		Three Mile River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

Massachusetts Areas of Critical Environmental Concern (ACECs)



- 1 Bourns Back River
- 2 Canoe River Aquifer
- 3 Cedar Swamp
- 4 Central Nashua River Valley
- 5 Cranberry Brook Watershed
- 6 Ellisville Harbor
- 7 Fowl Meadow and Ponkapoag Bog
- 8 Golden Hills
- 9 Great Marsh
- 10 Herring River Watershed
- 11 Hinsdale Flats Watershed
- 12 Hockomock Swamp
- 13 Inner Cape Cod Bay
- 14 Kampoosa Bog Drainage Basin
- 15 Kame Brook Watershed

- 16 Miscoe, Warren and Whitehall Watersheds
- 17 Neponset River Estuary
- 18 Petapawag
- 19 Pleasant Bay
- 20 Pocasset River
- 21 Rumney Marshes
- 22 Sandy Neck Barrier Beach System
- 23 Schenob Brook Drainage Basin
- 24 Squannassit
- 25 Three Mile River Watershed
- 26 Upper Housatonic River
- 27 Waquoit Bay
- 28 Weir River
- 29 Wellfleet Harbor
- 30 Weymouth Back River



APPENDIX F

Boston Water and Sewer Commission Dewatering Permit



**Boston Water and
Sewer Commission**
980 Harrison Avenue
Boston, MA 02119-2540

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Brigham and Women's Hospital Address: 20 KENT STREET

Phone number: 6177603683 Fax number: 6177303697

Contact person name: LANI KUZIA Title: PROJECT MANAGER

Cell number: 6175436639 Email address: LKUZIA@PARTNERS.ORG

Permit Request (check one): ☒ New Application ☐ Permit Extension ☐ Other (Specify): _____

Owner's Information (if different from above):

Owner of property being dewatered: _____

Owner's mailing address: _____ Phone number: _____

Location of Discharge & Proposed Treatment System(s):

Street number and name: 74 FENWOOD Neighborhood BOSTON/LONGWOOD MEDICAL AREA

Discharge is to a: ☐ Sanitary Sewer ☐ Combined Sewer ☒ Storm Drain ☐ Other (specify): _____

SEDIMENTATION TANK, BAG FILTERS (IF NECESSARY), GRANULATED ACTIVATED CARBON,

Describe Proposed Pre-Treatment System(s): pH REGULATOR, CYANIDE TREATMENT

BWSC Outfall No. MUDDY RIVER OUTFALL DO 161 Receiving Waters MUDDY RIVER

Temporary Discharges (Provide Anticipated Dates of Discharge): From 6/1/2013 To 6/1/2015

☐ Groundwater Remediation	☐ Tank Removal/Installation	☒ Foundation Excavation
☐ Utility/Manhole Pumping	☐ Test Pipe	☒ Trench Excavation
☒ Accumulated Surface Water	☐ Hydrogeologic Testing	☐ Other _____

Permanent Discharges

☐ Foundation Drainage	☐ Crawl Space/Footing Drain
☐ Accumulated Surface Water	☐ Non-contact/Uncontaminated Cooling
☐ Non-contact/Uncontaminated Process	☐ Other; _____

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). Include meter type, meter number, size, make and start reading. Note. All discharges to the Commission's sewer system will be assessed current sewer charges.
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information.
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Francis M. McLaughlin, Manager Engineering Customer Services
E-mail: MclaughlinF@bwsc.org
Phone: 617-989-7208 Fax: 617-989-7716

BWSC Use Only: Date Received _____ Comments: _____

APPENDIX G

Application Laboratory Data Reports



ANALYTICAL REPORT

Lab Number:	L1217926
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM AND WOMENS
Project Number:	35198-101
Report Date:	10/11/12

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1217926-01	HA12-12	Not Specified	10/05/12 11:50

Project Name: BRIGHAM AND WOMENS

Lab Number: L1217926

Project Number: 35198-101

Report Date: 10/11/12

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

The sample was field filtered for Dissolved Metals.

Metals

In reference to question I:

The sample was analyzed for a subset of MCP elements per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 10/11/12

METALS

Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

SAMPLE RESULTS

Lab ID: L1217926-01
Client ID: HA12-12
Sample Location: Not Specified
Matrix: Water

Date Collected: 10/05/12 11:50
Date Received: 10/05/12
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Westborough Lab											
Hardness	640		mg/l	0.66	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	30,2340B	MG
MCP Total Metals - Westborough Lab											
Calcium, Total	200		mg/l	0.10	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	97,6010C	MG
Iron, Total	ND		mg/l	0.05	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	97,6010C	MG
Magnesium, Total	32		mg/l	0.10	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	97,6010C	MG
Manganese, Total	6.57		mg/l	0.010	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	97,6010C	MG
Sodium, Total	370		mg/l	2.0	--	1	10/08/12 09:18	10/08/12 14:03	EPA 3005A	97,6010C	MG
MCP Dissolved Metals - Westborough Lab											
Calcium, Dissolved	210		mg/l	0.10	--	1	10/08/12 08:34	10/08/12 17:49	NA	97,6010C	MG
Iron, Dissolved	ND		mg/l	0.05	--	1	10/08/12 08:34	10/08/12 17:49	NA	97,6010C	MG
Magnesium, Dissolved	31		mg/l	0.10	--	1	10/08/12 08:34	10/08/12 17:49	NA	97,6010C	MG
Manganese, Dissolved	5.58		mg/l	0.010	--	1	10/08/12 08:34	10/08/12 17:49	NA	97,6010C	MG
Sodium, Dissolved	340		mg/l	2.0	--	1	10/08/12 08:34	10/08/12 17:49	NA	97,6010C	MG



Project Name: BRIGHAM AND WOMENS

Lab Number: L1217926

Project Number: 35198-101

Report Date: 10/11/12

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG565522-1									
Calcium, Dissolved	ND	mg/l	0.10	--	1	10/08/12 08:34	10/08/12 17:33	97,6010C	MG
Iron, Dissolved	ND	mg/l	0.05	--	1	10/08/12 08:34	10/08/12 17:33	97,6010C	MG
Magnesium, Dissolved	ND	mg/l	0.10	--	1	10/08/12 08:34	10/08/12 17:33	97,6010C	MG
Manganese, Dissolved	ND	mg/l	0.010	--	1	10/08/12 08:34	10/08/12 17:33	97,6010C	MG
Sodium, Dissolved	ND	mg/l	2.0	--	1	10/08/12 08:34	10/08/12 17:33	97,6010C	MG

Prep Information

Digestion Method: NA

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG565537-1									
Calcium, Total	ND	mg/l	0.10	--	1	10/08/12 09:18	10/08/12 13:43	97,6010C	MG
Iron, Total	ND	mg/l	0.05	--	1	10/08/12 09:18	10/08/12 13:43	97,6010C	MG
Magnesium, Total	ND	mg/l	0.10	--	1	10/08/12 09:18	10/08/12 13:43	97,6010C	MG
Manganese, Total	ND	mg/l	0.010	--	1	10/08/12 09:18	10/08/12 13:43	97,6010C	MG
Sodium, Total	ND	mg/l	2.0	--	1	10/08/12 09:18	10/08/12 13:43	97,6010C	MG

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Westborough Lab for sample(s): 01 Batch: WG566431-1									
Hardness	ND	mg/l	0.66	--	1	10/08/12 09:18	10/08/12 13:43	30,2340B	MG

Prep Information

Digestion Method: EPA 3005A



Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM AND WOMENS

Project Number: 35198-101

Lab Number: L1217926

Report Date: 10/11/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG565522-2 WG565522-3								
Calcium, Dissolved	99		98		80-120	1		20
Iron, Dissolved	92		93		80-120	1		20
Magnesium, Dissolved	98		97		80-120	1		20
Manganese, Dissolved	96		94		80-120	2		20
Sodium, Dissolved	96		95		80-120	1		20
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG565537-2 WG565537-3								
Calcium, Total	97		99		80-120	2		20
Iron, Total	97		96		80-120	1		20
Magnesium, Total	100		100		80-120	0		20
Manganese, Total	101		102		80-120	1		20
Sodium, Total	110		120		80-120	9		20
Total Hardness by SM 2340B - Westborough Lab Associated sample(s): 01 Batch: WG566431-2 WG566431-3								
Hardness	101		103		80-120	2		

INORGANICS & MISCELLANEOUS

Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

SAMPLE RESULTS

Lab ID: L1217926-01
Client ID: HA12-12
Sample Location: Not Specified
Matrix: Water

Date Collected: 10/05/12 11:50
Date Received: 10/05/12
Field Prep: See Narrative

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	110		mg CaCO3/L	2.0	NA	1	-	10/07/12 20:09	30,2320B	JT
Solids, Total Dissolved	2000		mg/l	10	--	1	-	10/09/12 13:40	30,2540C	DW
Chloride	860		mg/l	10	--	10	-	10/09/12 12:01	1,9251	LA
Sulfate	200		mg/l	50	--	5	10/08/12 15:00	10/08/12 15:00	1,9038	MP



Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG565505-1										
Alkalinity, Total	ND		mg CaCO3/L	2.0	NA	1	-	10/07/12 20:09	30,2320B	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG565582-1										
Sulfate	ND		mg/l	10	--	1	10/08/12 15:00	10/08/12 15:00	1,9038	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG565807-1										
Chloride	ND		mg/l	1.0	--	1	-	10/09/12 10:44	1,9251	LA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG565870-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	10/09/12 13:40	30,2540C	DW

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM AND WOMENS

Project Number: 35198-101

Lab Number: L1217926

Report Date: 10/11/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG565505-2								
Alkalinity, Total	102		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG565582-2								
Sulfate	95		-		84-119	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG565807-2								
Chloride	90		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG565870-2								
Solids, Total Dissolved	94		-		80-120	-		

Matrix Spike Analysis Batch Quality Control

Project Name: BRIGHAM AND WOMENS

Project Number: 35198-101

Lab Number: L1217926

Report Date: 10/11/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565505-4 QC Sample: L1217795-04 Client ID: MS Sample												
Alkalinity, Total	156	100	244	88		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565582-4 QC Sample: L1217927-01 Client ID: MS Sample												
Sulfate	ND	20	27	135		-	-		55-147	-		14
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565807-4 QC Sample: L1217927-07 Client ID: MS Sample												
Chloride	7.7	20	26	92		-	-		58-140	-		7

Lab Duplicate Analysis Batch Quality Control

Project Name: BRIGHAM AND WOMENS

Project Number: 35198-101

Lab Number: L1217926

Report Date: 10/11/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565505-3 QC Sample: L1217795-02 Client ID: DUP Sample						
Alkalinity, Total	360	360	mg CaCO3/L	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565582-3 QC Sample: L1217908-01 Client ID: DUP Sample						
Sulfate	1300	1400	mg/l	7		14
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565807-3 QC Sample: L1217927-07 Client ID: DUP Sample						
Chloride	7.7	6.8	mg/l	12	Q	7
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG565870-3 QC Sample: L1217696-01 Client ID: DUP Sample						
Solids, Total Dissolved	1200	1200	mg/l	0		20

Project Name: BRIGHAM AND WOMENS**Project Number:** 35198-101**Lab Number:** L1217926**Report Date:** 10/11/12**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1217926-01A	Plastic 250ml HNO3 preserved	A	<2	2.8	Y	Absent	MCP-FE-6010T-10(180),MCP-MN-6010T-10(180),MCP-CA-6010T-10(180),MCP-MG-6010T-10(180),MCP-NA-6010T-10(180),HARDT(180)
L1217926-01B	Plastic 250ml HNO3 preserved	A	<2	2.8	Y	Absent	MCP-FE-6010S-10(180),MCP-NA-6010S-10(180),MCP-MG-6010S-10(180),MCP-MN-6010S-10(180),MCP-CA-6010S-10(180)
L1217926-01C	Plastic 250ml unpreserved	A	N/A	2.8	Y	Absent	ALK-T-2320(14)
L1217926-01D	Plastic 1000ml unpreserved	A	7	2.8	Y	Absent	CL-9251(28),SO4-9038(28),TDS-2540(7)

*Values in parentheses indicate holding time in days

Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

GLOSSARY

Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

Report Format: Data Usability Report



Project Name: BRIGHAM AND WOMENS**Lab Number:** L1217926**Project Number:** 35198-101**Report Date:** 10/11/12**Data Qualifiers**

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: BRIGHAM AND WOMENS
Project Number: 35198-101

Lab Number: L1217926
Report Date: 10/11/12

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised August 16, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8082, 8330, 8151A, 8260B, 8270C, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014A, 9030B, 9040B, 9045C, 6010B, 7471A, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8330, 8151A, 8081A, 8082, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters: (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7

for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, 2540G, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3630C, 5030B, 5035L, 5035H, NJ OQA-QAM-025 Rev.7, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012A, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010B, 9040C, 9045D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C, 3546, 3580, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**
Drinking Water (Inorganic Parameters: 200.7, 200.8, 245.2, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A, 3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P, BE, 245.1, 300.0, 3501., 350.2, 353.2, 420.1, 6010B, 6010C, 6020, 6020A, 7196A, 7470A, 9010B, 9030B, 9040B, Lachat 10-107-06-2-D, NJ-EPH, 2120B, 2310B, 2320B, 2340B, 2510C, 2540B, 2540C, 3500Cr-D, 436C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NO₂-B, 4500NO₃-F, 4500S-D, 4500SO₃-B, 5310BCD, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8330, 8015B,)

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476-09-1. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500F-C, 4500NO₃-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

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

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO₃-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnaphthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix, SO₄ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

HALEY & ALDRICHHaley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1400**CHAIN OF CUSTODY RECORD**Phone (617) 886-7400
Fax (617) 886-7600H&A FILE NO. 35198-101PROJECT NAME Brigham and Women'sH&A CONTACT M. BalfeLABORATORY AlphaADDRESS Westborough MACONTACT K. O'BrienDELIVERY DATE 10/04/12TURNAROUND TIME 5715 S DayPROJECT MANAGER M. Balfe

Page 1 of 1

Sample No.	Date	Time	Depth	Type	Analysis Requested										Number of Containers	Comments			
					① VOA	② ANNs PAH only	③ MCP Metals	④ Pesticides PCBs	⑤ NPFL Full Suite C-ranges only	⑥ NPFL Full Suite C-ranges only	⑦ TPH (specify)	⑧ TCLP (specify)	⑨ Reactivity	⑩ Ignitability	⑪ Corrosivity		(special instructions, precautions, additional method numbers, etc.)		
H&A-12	10/5/12	1150	-	AA	X	X	X	X	X	X	X					4		Laboratory to use applicable DEP CAM methods, unless otherwise directed. ① Total metals, Fe, Mn, Ni, Cu, Na ② Dissolved metals Fe, Mn, Ni, Cu, Na (AP) ③ Chloride ④ Hardness Ca CO ₃ ⑤ Sulfate ⑥ Alkalinity ⑦ TDS	
Sampled and Relinquished by					Received by					LIQUID					Sampling Comments				
Sign <u>Cody Smith</u>	Sign <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>												VOA Vial			
Print <u>Cody Smith</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>												Amber Glass			
Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>												Plastic Bottle			
Date <u>10/05/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>												Preservative			
Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>												Volume			
Relinquished by					Received by					SOLID									
Sign <u>M. Balfe</u>	Sign <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>												VOA Vial			
Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>												Amber Glass			
Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>												Clear Glass			
Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>												Preservative			
Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>												Volume			
Relinquished by					Received by					PRESERVATION KEY									
Sign <u>M. Balfe</u>	Sign <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>															
Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>	Print <u>M. Balfe</u>															
Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>	Firm <u>H&A</u>															
Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>	Date <u>10/5/12</u>															
Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>	Time <u>1838</u>															



ANALYTICAL REPORT

Lab Number:	L1223492
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	B.B.F
Project Number:	35198-101
Report Date:	01/04/13

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Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1223492-01	HA-12-13A OW	Not Specified	12/28/12 10:49

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1223492-01, did not meet the method required minimum response factors on one of the calibration standards for 2-Butanone (0.08948), 4-Methyl-2-pentanone (0.06469), and 1,4-Dioxane (0.00119), as well as the average response factor for 2-Butanone, 4-Methyl-2-pentanone, and 1,4-Dioxane.

The continuing calibration standard, associated with L1223492-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cynthia McQueen

Title: Technical Director/Representative

Date: 01/04/13

ORGANICS

VOLATILES

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

SAMPLE RESULTS

Lab ID: L1223492-01
 Client ID: HA-12-13A OW
 Sample Location: Not Specified
 Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 01/03/13 12:39
 Analyst: MM

Date Collected: 12/28/12 10:49
 Date Received: 12/28/12
 Field Prep: Not Specified

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

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

SAMPLE RESULTS

Lab ID: L1223492-01
Client ID: HA-12-13A OW
Sample Location: Not Specified

Date Collected: 12/28/12 10:49
Date Received: 12/28/12
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	2.3		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

SAMPLE RESULTS

Lab ID: L1223492-01
 Client ID: HA-12-13A OW
 Sample Location: Not Specified

Date Collected: 12/28/12 10:49
 Date Received: 12/28/12
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/03/13 10:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG582544-3					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--



Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/03/13 10:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG582544-3					
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--



Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 01/03/13 10:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG582544-3					
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG582544-1 WG582544-2								
Methylene chloride	102		104		70-130	2		20
1,1-Dichloroethane	108		106		70-130	2		20
Chloroform	112		112		70-130	0		20
Carbon tetrachloride	107		106		70-130	1		20
1,2-Dichloropropane	106		109		70-130	3		20
Dibromochloromethane	94		93		70-130	1		20
1,1,2-Trichloroethane	104		102		70-130	2		20
Tetrachloroethene	112		111		70-130	1		20
Chlorobenzene	112		111		70-130	1		20
Trichlorofluoromethane	115		119		70-130	3		20
1,2-Dichloroethane	113		116		70-130	3		20
1,1,1-Trichloroethane	111		111		70-130	0		20
Bromodichloromethane	108		108		70-130	0		20
trans-1,3-Dichloropropene	98		98		70-130	0		20
cis-1,3-Dichloropropene	109		108		70-130	1		20
1,1-Dichloropropene	108		109		70-130	1		20
Bromoform	80		81		70-130	1		20
1,1,2,2-Tetrachloroethane	93		94		70-130	1		20
Benzene	104		105		70-130	1		20
Toluene	103		105		70-130	2		20
Ethylbenzene	106		105		70-130	1		20

Lab Control Sample Analysis Batch Quality Control

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG582544-1 WG582544-2								
Chloromethane	78		82		70-130	5		20
Bromomethane	77		71		70-130	8		20
Vinyl chloride	101		103		70-130	2		20
Chloroethane	98		100		70-130	2		20
1,1-Dichloroethene	105		107		70-130	2		20
trans-1,2-Dichloroethene	108		111		70-130	3		20
Trichloroethene	114		114		70-130	0		20
1,2-Dichlorobenzene	109		110		70-130	1		20
1,3-Dichlorobenzene	111		111		70-130	0		20
1,4-Dichlorobenzene	109		111		70-130	2		20
Methyl tert butyl ether	104		107		70-130	3		20
p/m-Xylene	108		109		70-130	1		20
o-Xylene	109		110		70-130	1		20
cis-1,2-Dichloroethene	110		108		70-130	2		20
Dibromomethane	116		120		70-130	3		20
1,2,3-Trichloropropane	98		99		70-130	1		20
Styrene	107		107		70-130	0		20
Dichlorodifluoromethane	101		109		70-130	8		20
Acetone	125		133	Q	70-130	6		20
Carbon disulfide	100		102		70-130	2		20
2-Butanone	114		122		70-130	7		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG582544-1 WG582544-2								
4-Methyl-2-pentanone	96		103		70-130	7		20
2-Hexanone	105		114		70-130	8		20
Bromochloromethane	118		121		70-130	3		20
Tetrahydrofuran	71		79		70-130	11		20
2,2-Dichloropropane	112		114		70-130	2		20
1,2-Dibromoethane	104		104		70-130	0		20
1,3-Dichloropropane	104		104		70-130	0		20
1,1,1,2-Tetrachloroethane	107		104		70-130	3		20
Bromobenzene	109		111		70-130	2		20
n-Butylbenzene	100		101		70-130	1		20
sec-Butylbenzene	101		102		70-130	1		20
tert-Butylbenzene	106		109		70-130	3		20
o-Chlorotoluene	102		102		70-130	0		20
p-Chlorotoluene	102		104		70-130	2		20
1,2-Dibromo-3-chloropropane	87		91		70-130	4		20
Hexachlorobutadiene	124		132	Q	70-130	6		20
Isopropylbenzene	109		109		70-130	0		20
p-Isopropyltoluene	105		107		70-130	2		20
Naphthalene	100		102		70-130	2		20
n-Propylbenzene	100		102		70-130	2		20
1,2,3-Trichlorobenzene	116		117		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG582544-1 WG582544-2								
1,2,4-Trichlorobenzene	116		115		70-130	1		20
1,3,5-Trimethylbenzene	103		105		70-130	2		20
1,2,4-Trimethylbenzene	103		103		70-130	0		20
Ethyl ether	100		104		70-130	4		20
Isopropyl Ether	96		97		70-130	1		20
Ethyl-Tert-Butyl-Ether	103		106		70-130	3		20
Tertiary-Amyl Methyl Ether	104		106		70-130	2		20
1,4-Dioxane	110		115		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		100		70-130
Toluene-d8	93		96		70-130
4-Bromofluorobenzene	92		93		70-130
Dibromofluoromethane	102		103		70-130

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1223492-01A	Vial HCl preserved	A	N/A	4.0	Y	Absent	MCP-8260-10(14)
L1223492-01B	Vial HCl preserved	A	N/A	4.0	Y	Absent	MCP-8260-10(14)
L1223492-01C	Vial HCl preserved	A	N/A	4.0	Y	Absent	MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
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GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



Project Name: B.B.F
Project Number: 35198-101

Lab Number: L1223492
Report Date: 01/04/13

Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

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REFERENCES

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

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commissoon on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO₃-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO₃-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Page 24 of 28 *Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

7A
Volatile CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1223492

Instrument ID: Quimby.i Calibration Date: 03-JAN-2013 Time: 09:31

Lab File ID: 0103B02 Init. Calib. Date(s): 19-DEC-2 19-DEC-2

Sample No: 8260 CCAL Init. Calib. Times : 06:58 10:07

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.21726	.22036	.1	-1	20	
chloromethane	.3552	.27585	.1	22	20	F
vinyl chloride	.33809	.34223	.1	-1	20	
bromomethane	.20911	.16071	.1	23	20	F
chloroethane	.20616	.20161	.1	2	20	
trichlorofluoromethane	.33509	.38538	.1	-15	20	
ethyl ether	.11621	.11616	.05	0	20	
acetone	100	125	.1	-25	20	F
1,1,-dichloroethene	.21726	.22864	.1	-5	20	
methylene chloride	.26432	.27051	.1	-2	20	
carbon disulfide	.64303	.6396	.1	1	20	
methyl tert butyl ether	.52414	.54274	.1	-4	20	
trans-1,2-dichloroethene	.24527	.26568	.1	-8	20	
Diisopropyl Ether	.84832	.81059	.05	4	20	
1,1-dichloroethane	.47487	.51176	.2	-8	20	
Ethyl-Tert-Butyl-Ether	.73675	.76091	.05	-3	20	
2-butanone	.07497	.0854	.1	-14	20	F
2,2-dichloropropane	.38603	.43196	.05	-12	20	
cis-1,2-dichloroethene	.2725	.30064	.1	-10	20	
chloroform	.44988	.50559	.2	-12	20	
bromochloromethane	.09699	.11416	.05	-18	20	
tetrahydrofuran	100	70.584	.05	29	20	F
1,1,1-trichloroethane	.40093	.4444	.1	-11	20	
1,1-dichloropropene	.35667	.38535	.05	-8	20	
carbontetrachloride	.32382	.34554	.1	-7	20	
Tertiary-Amyl Methyl Ether	.60811	.63113	.05	-4	20	
1,2-dichloroethane	.29807	.33803	.1	-13	20	
benzene	1.1083	1.1549	.5	-4	20	
trichloroethene	.26677	.30324	.2	-14	20	
1,2-dichloropropane	.27029	.28608	.1	-6	20	
bromodichloromethane	.34076	.36871	.2	-8	20	
1,4-dioxane	.0012	.00132	.05	-10	20	F
dibromomethane	.11846	.13743	.05	-16	20	
4-methyl-2-pentanone	.05861	.05615	.1	4	20	F
cis-1,3-dichloropropene	.41202	.44917	.2	-9	20	
toluene	.89044	.91618	.4	-3	20	
trans-1,3-dichloropropene	.42927	.42208	.1	2	20	
1,1,2-trichloroethane	.19061	.19796	.1	-4	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1223492

Instrument ID: Quimby.i Calibration Date: 03-JAN-2013 Time: 09:31

Lab File ID: 0103B02 Init. Calib. Date(s): 19-DEC-2 19-DEC-2

Sample No: 8260 CCAL Init. Calib. Times : 06:58 10:07

Compound	RRF	RRF	MIN RRF	%D	MAX %D
2-hexanone	.14965	.15674	.1	-5	20
1,3-dichloropropane	.40941	.42443	.05	-4	20
tetrachloroethene	.31826	.35506	.2	-12	20
chlorodibromomethane	.25238	.23605	.1	6	20
1,2-dibromoethane	.22158	.23003	.1	-4	20
chlorobenzene	.94913	1.0665	.5	-12	20
1,1,1,2-tetrachloroethane	.30766	.32926	.05	-7	20
ethyl benzene	1.8350	1.9530	.1	-6	20
p/m xylene	.71551	.77628	.1	-8	20
o xylene	.69398	.75441	.3	-9	20
styrene	1.1667	1.2467	.31	-7	20
isopropylbenzene	1.8784	2.0454	.1	-9	20
bromoform	.24399	.19446	.1	20	20
1,1,2,2,-tetrachloroethane	.51238	.47484	.3	7	20
1,2,3-trichloropropane	.35387	.34745	.05	2	20
n-propylbenzene	4.0116	4.011	.05	0	20
bromobenzene	.65671	.71677	.05	-9	20
1,3,5-trimethylbenzene	2.9311	3.0237	.05	-3	20
2-chlorotoluene	2.7400	2.7907	.05	-2	20
4-chlorotoluene	2.5255	2.5884	.05	-2	20
tert-butylbenzene	2.3762	2.5290	.05	-6	20
1,2,4-trimethylbenzene	2.9252	3.0222	.05	-3	20
sec-butylbenzene	3.7874	3.8134	.05	-1	20
p-isopropyltoluene	3.0331	3.1737	.05	-5	20
1,3-dichlorobenzene	1.4241	1.5848	.6	-11	20
1,4-dichlorobenzene	1.4365	1.5679	.5	-9	20
n-butylbenzene	3.7675	3.7473	.05	1	20
1,2-dichlorobenzene	1.2833	1.3968	.4	-9	20
1,2-dibromo-3-chloropropane	.08106	.07042	.05	13	20
1,2,4-trichlorobenzene	.72494	.84295	.2	-16	20
hexachlorobutadiene	.35796	.44563	.05	-24	20
naphthalene	1.4685	1.4693	.05	0	20
1,2,3-trichlorobenzene	.59155	.68846	.05	-16	20
dibromofluoromethane	.2251	.22853	.05	-2	20
1,2-dichloroethane-d4	.25743	.25381	.05	1	20
toluene-d8	1.2795	1.1939	.05	7	20
4-bromofluorobenzene	.95615	.88417	.05	8	20

F

F

FORM VII MCP-8260-10



ANALYTICAL REPORT

Lab Number:	L1301774
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM BLDG. FOR THE FUTURE
Project Number:	35198-101
Report Date:	02/05/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1301774-01	TRIP BLANK-1	Not Specified	01/30/13 08:00
L1301774-02	TRIP BLANK-2	Not Specified	01/30/13 08:05
L1301774-03	TRIP BLANK-3	Not Specified	01/30/13 08:10
L1301774-04	HA12-13 (OW)	Not Specified	01/30/13 09:40
L1301774-05	HA12-4 (OW)	Not Specified	01/30/13 11:40
L1301774-06	HA12-13A (OW)	Not Specified	01/30/13 14:25

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Case Narrative (continued)

Sample Receipt

The Dissolved Metals container was received preserved; however, the container and chain of custody indicated that the sample was to be filtered at the laboratory. Sample volume was taken from an unpreserved container and filtered and preserved appropriately.

Dissolved Metals

L1301774-04 has elevated detection limits for all elements, except Mercury, due to the prep dilution required by limited sample volume available for analysis.

The WG588287-4 MS recovery, performed on L1301774-04, is above the acceptance criteria for Mercury (138%). A post digestion spike was performed with an acceptable recovery of 115%.

Total Metals

L1301774-04 has elevated detection limits due to the dilution required by matrix interferences encountered during the 6020 analysis.

The WG588705-2 LCS recovery, associated with L1301774-04, was above the acceptance criteria for Iron (120%); however, the associated sample was non-detect for this target element. The results of the original analysis are reported.

Cyanide, Total

The WG587985-4 MS recovery (118%), performed on L1301774-04, is above the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cynthia McQueen

Title: Technical Director/Representative

Date: 02/05/13

ORGANICS

VOLATILES

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-01
Client ID: TRIP BLANK-1
Sample Location: Not Specified
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 02/04/13 20:29
Analyst: SH

Date Collected: 01/30/13 08:00
Date Received: 01/30/13
Field Prep: Not Specified
Extraction Date: 02/04/13 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Microextractables by GC - Westborough Lab						
1,2-Dibromoethane	ND		ug/l	0.010	--	1

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-02
Client ID: TRIP BLANK-2
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 02/01/13 15:23
Analyst: TR

Date Collected: 01/30/13 08:05
Date Received: 01/30/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-03
Client ID: TRIP BLANK-3
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/31/13 15:50
Analyst: PD

Date Collected: 01/30/13 08:10
Date Received: 01/30/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-03
 Client ID: TRIP BLANK-3
 Sample Location: Not Specified

Date Collected: 01/30/13 08:10
 Date Received: 01/30/13
 Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-03
 Client ID: TRIP BLANK-3
 Sample Location: Not Specified

Date Collected: 01/30/13 08:10
 Date Received: 01/30/13
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab

1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/01/13 15:55
Analyst: MM

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	7.4		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04

Date Collected: 01/30/13 09:40

Client ID: HA12-13 (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04

Date Collected: 01/30/13 09:40

Client ID: HA12-13 (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab

trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	96		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 02/01/13 15:55
Analyst: TR

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 02/04/13 20:45
Analyst: SH

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified
Extraction Date: 02/04/13 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Microextractables by GC - Westborough Lab						
1,2-Dibromoethane	ND		ug/l	0.010	--	1

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-05
Client ID: HA12-4 (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/01/13 10:47
Analyst: PD

Date Collected: 01/30/13 11:40
Date Received: 01/30/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	31		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	2.6		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-05

Date Collected: 01/30/13 11:40

Client ID: HA12-4 (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	4.7		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-05

Date Collected: 01/30/13 11:40

Client ID: HA12-4 (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab

1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	108		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-06
Client ID: HA12-13A (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/01/13 11:22
Analyst: PD

Date Collected: 01/30/13 14:25
Date Received: 01/30/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-06

Date Collected: 01/30/13 14:25

Client ID: HA12-13A (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-06
 Client ID: HA12-13A (OW)
 Sample Location: Not Specified

Date Collected: 01/30/13 14:25
 Date Received: 01/30/13
 Field Prep: Not Specified

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	107		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/31/13 10:30
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG588237-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/31/13 10:30
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG588237-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/31/13 10:30
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG588237-3					
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 10:12
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-06 Batch: WG588271-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 10:12
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-06 Batch: WG588271-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 10:12
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-06 Batch: WG588271-3					
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	109		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)

Analytical Date: 02/01/13 14:00

Analyst: TR

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02,04 Batch: WG588323-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 14:50
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG588324-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 14:50
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG588324-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 02/01/13 14:50
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG588324-3					
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	95		70-130

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**Method Blank Analysis**
Batch Quality Control

Analytical Method: 14,504.1

Analytical Date: 02/04/13 17:24

Analyst: SH

Extraction Date: 02/04/13 11:00

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01,04 Batch: WG588434-1					
1,2-Dibromoethane	ND		ug/l	0.010	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG588237-1 WG588237-2								
Methylene chloride	110		99		70-130	11		20
1,1-Dichloroethane	97		90		70-130	7		20
Chloroform	108		100		70-130	8		20
Carbon tetrachloride	112		108		63-132	4		20
1,2-Dichloropropane	91		86		70-130	6		20
Dibromochloromethane	99		100		63-130	1		20
1,1,2-Trichloroethane	92		90		70-130	2		20
Tetrachloroethene	112		105		70-130	6		20
Chlorobenzene	105		100		75-130	5		25
Trichlorofluoromethane	120		112		62-150	7		20
1,2-Dichloroethane	101		96		70-130	5		20
1,1,1-Trichloroethane	111		105		67-130	6		20
Bromodichloromethane	105		101		67-130	4		20
trans-1,3-Dichloropropene	99		100		70-130	1		20
cis-1,3-Dichloropropene	100		98		70-130	2		20
1,1-Dichloropropene	105		99		70-130	6		20
Bromoform	90		99		54-136	10		20
1,1,2,2-Tetrachloroethane	84		88		67-130	5		20
Benzene	97		90		70-130	7		25
Toluene	101		96		70-130	5		25
Ethylbenzene	104		100		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG588237-1 WG588237-2								
Chloromethane	89		80		64-130	11		20
Bromomethane	107		92		39-139	15		20
Vinyl chloride	103		92		55-140	11		20
Chloroethane	96		88		55-138	9		20
1,1-Dichloroethene	106		97		61-145	9		25
trans-1,2-Dichloroethene	102		93		70-130	9		20
Trichloroethene	105		98		70-130	7		25
1,2-Dichlorobenzene	102		101		70-130	1		20
1,3-Dichlorobenzene	106		102		70-130	4		20
1,4-Dichlorobenzene	104		101		70-130	3		20
Methyl tert butyl ether	91		91		63-130	0		20
p/m-Xylene	104		99		70-130	5		20
o-Xylene	108		103		70-130	5		20
cis-1,2-Dichloroethene	96		92		70-130	4		20
Dibromomethane	96		94		70-130	2		20
1,4-Dichlorobutane	80		82		70-130	2		20
1,2,3-Trichloropropane	86		89		64-130	3		20
Styrene	104		101		70-130	3		20
Dichlorodifluoromethane	117		106		36-147	10		20
Acetone	71		64		58-148	10		20
Carbon disulfide	100		89		51-130	12		20

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG588237-1 WG588237-2								
2-Butanone	66		66		63-138	0		20
Vinyl acetate	74		74		70-130	0		20
4-Methyl-2-pentanone	74		75		59-130	1		20
2-Hexanone	66		69		57-130	4		20
Ethyl methacrylate	84		84		70-130	0		20
Acrylonitrile	76		72		70-130	5		20
Bromochloromethane	101		96		70-130	5		20
Tetrahydrofuran	64		65		58-130	2		20
2,2-Dichloropropane	111		104		63-133	7		20
1,2-Dibromoethane	92		94		70-130	2		20
1,3-Dichloropropane	92		92		70-130	0		20
1,1,1,2-Tetrachloroethane	110		107		64-130	3		20
Bromobenzene	104		103		70-130	1		20
n-Butylbenzene	112		103		53-136	8		20
sec-Butylbenzene	110		103		70-130	7		20
tert-Butylbenzene	112		106		70-130	6		20
o-Chlorotoluene	105		100		70-130	5		20
p-Chlorotoluene	101		99		70-130	2		20
1,2-Dibromo-3-chloropropane	76		79		41-144	4		20
Hexachlorobutadiene	119		110		63-130	8		20
Isopropylbenzene	111		105		70-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG588237-1 WG588237-2								
p-Isopropyltoluene	115		106		70-130	8		20
Naphthalene	101		108		70-130	7		20
n-Propylbenzene	103		98		69-130	5		20
1,2,3-Trichlorobenzene	106		107		70-130	1		20
1,2,4-Trichlorobenzene	109		106		70-130	3		20
1,3,5-Trimethylbenzene	110		106		64-130	4		20
1,2,4-Trimethylbenzene	114		106		70-130	7		20
trans-1,4-Dichloro-2-butene	77		82		70-130	6		20
Ethyl ether	90		87		59-134	3		20
tert-Butyl Alcohol	78		81		70-130	4		20
Tertiary-Amyl Methyl Ether	94		91		66-130	3		20
1,4-Dioxane	86		85		56-162	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	99		101		70-130
4-Bromofluorobenzene	97		100		70-130
Dibromofluoromethane	107		106		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-06 Batch: WG588271-1 WG588271-2								
Methylene chloride	96		95		70-130	1		20
1,1-Dichloroethane	101		99		70-130	2		20
Chloroform	101		101		70-130	0		20
Carbon tetrachloride	97		97		63-132	0		20
1,2-Dichloropropane	102		98		70-130	4		20
Dibromochloromethane	102		102		63-130	0		20
1,1,2-Trichloroethane	100		106		70-130	6		20
Tetrachloroethene	100		101		70-130	1		20
Chlorobenzene	100		101		75-130	1		25
Trichlorofluoromethane	115		111		62-150	4		20
1,2-Dichloroethane	103		103		70-130	0		20
1,1,1-Trichloroethane	102		101		67-130	1		20
Bromodichloromethane	108		108		67-130	0		20
trans-1,3-Dichloropropene	100		103		70-130	3		20
cis-1,3-Dichloropropene	101		100		70-130	1		20
1,1-Dichloropropene	100		97		70-130	3		20
Bromoform	103		106		54-136	3		20
1,1,2,2-Tetrachloroethane	138	Q	159	Q	67-130	14		20
Benzene	96		96		70-130	0		25
Toluene	98		100		70-130	2		25
Ethylbenzene	101		102		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-06 Batch: WG588271-1 WG588271-2								
Chloromethane	72		70		64-130	3		20
Bromomethane	42		49		39-139	15		20
Vinyl chloride	108		101		55-140	7		20
Chloroethane	110		103		55-138	7		20
1,1-Dichloroethene	96		97		61-145	1		25
trans-1,2-Dichloroethene	101		98		70-130	3		20
Trichloroethene	92		91		70-130	1		25
1,2-Dichlorobenzene	99		102		70-130	3		20
1,3-Dichlorobenzene	100		101		70-130	1		20
1,4-Dichlorobenzene	98		100		70-130	2		20
Methyl tert butyl ether	95		98		63-130	3		20
p/m-Xylene	101		103		70-130	2		20
o-Xylene	101		103		70-130	2		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Dibromomethane	99		101		70-130	2		20
1,4-Dichlorobutane	96		101		70-130	5		20
1,2,3-Trichloropropane	94		102		64-130	8		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	107		103		36-147	4		20
Acetone	104		98		58-148	6		20
Carbon disulfide	101		96		51-130	5		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-06 Batch: WG588271-1 WG588271-2								
2-Butanone	96		97		63-138	1		20
Vinyl acetate	89		97		70-130	9		20
4-Methyl-2-pentanone	95		102		59-130	7		20
2-Hexanone	95		102		57-130	7		20
Ethyl methacrylate	95		102		70-130	7		20
Acrylonitrile	103		109		70-130	6		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	93		98		58-130	5		20
2,2-Dichloropropane	102		98		63-133	4		20
1,2-Dibromoethane	98		104		70-130	6		20
1,3-Dichloropropane	98		102		70-130	4		20
1,1,1,2-Tetrachloroethane	101		103		64-130	2		20
Bromobenzene	98		100		70-130	2		20
n-Butylbenzene	98		96		53-136	2		20
sec-Butylbenzene	98		98		70-130	0		20
tert-Butylbenzene	97		98		70-130	1		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	98		100		70-130	2		20
1,2-Dibromo-3-chloropropane	104		115		41-144	10		20
Hexachlorobutadiene	103		102		63-130	1		20
Isopropylbenzene	98		99		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-06 Batch: WG588271-1 WG588271-2								
p-Isopropyltoluene	97		96		70-130	1		20
Naphthalene	96		103		70-130	7		20
n-Propylbenzene	98		99		69-130	1		20
1,2,3-Trichlorobenzene	94		100		70-130	6		20
1,2,4-Trichlorobenzene	96		98		70-130	2		20
1,3,5-Trimethylbenzene	98		100		64-130	2		20
1,2,4-Trimethylbenzene	96		96		70-130	0		20
trans-1,4-Dichloro-2-butene	83		86		70-130	4		20
Ethyl ether	106		105		59-134	1		20
tert-Butyl Alcohol	96		107		70-130	11		20
Tertiary-Amyl Methyl Ether	95		99		66-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		100		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	95		98		70-130
Dibromofluoromethane	108		105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02,04 Batch: WG588323-1 WG588323-2								
1,4-Dioxane	119		118		70-130	1		25

Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG588324-1 WG588324-2								
Methylene chloride	106		113		70-130	6		20
1,1-Dichloroethane	101		111		70-130	9		20
Chloroform	102		112		70-130	9		20
Carbon tetrachloride	86		99		63-132	14		20
1,2-Dichloropropane	106		112		70-130	6		20
Dibromochloromethane	86		84		63-130	2		20
1,1,2-Trichloroethane	96		94		70-130	2		20
Tetrachloroethene	96		101		70-130	5		20
Chlorobenzene	98		101		75-130	3		25

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG588324-1 WG588324-2								
Trichlorofluoromethane	105		116		62-150	10		20
1,2-Dichloroethane	98		105		70-130	7		20
1,1,1-Trichloroethane	93		104		67-130	11		20
Bromodichloromethane	89		97		67-130	9		20
trans-1,3-Dichloropropene	85		85		70-130	0		20
cis-1,3-Dichloropropene	96		102		70-130	6		20
1,1-Dichloropropene	100		111		70-130	10		20
Bromoform	79		80		54-136	1		20
1,1,2,2-Tetrachloroethane	91		97		67-130	6		20
Benzene	104		114		70-130	9		25
Toluene	99		100		70-130	1		25
Ethylbenzene	97		101		70-130	4		20
Chloromethane	102		114		64-130	11		20
Bromomethane	91		106		39-139	15		20
Vinyl chloride	100		112		55-140	11		20
Chloroethane	108		122		55-138	12		20
1,1-Dichloroethene	99		112		61-145	12		25
trans-1,2-Dichloroethene	102		114		70-130	11		20
Trichloroethene	100		112		70-130	11		25
1,2-Dichlorobenzene	99		102		70-130	3		20
1,3-Dichlorobenzene	98		100		70-130	2		20

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG588324-1 WG588324-2								
1,4-Dichlorobenzene	98		101		70-130	3		20
Methyl tert butyl ether	99		104		63-130	5		20
p/m-Xylene	97		104		70-130	7		20
o-Xylene	99		101		70-130	2		20
cis-1,2-Dichloroethene	104		112		70-130	7		20
Dibromomethane	100		106		70-130	6		20
1,2,3-Trichloropropane	92		95		64-130	3		20
Styrene	98		102		70-130	4		20
Dichlorodifluoromethane	94		105		36-147	11		20
Acetone	101		104		58-148	3		20
Carbon disulfide	92		103		51-130	11		20
2-Butanone	108		109		63-138	1		20
Vinyl acetate	103		109		70-130	6		20
4-Methyl-2-pentanone	101		110		59-130	9		20
2-Hexanone	88		95		57-130	8		20
Ethyl methacrylate	91		94		70-130	3		20
Acrylonitrile	106		113		70-130	6		20
Bromochloromethane	99		112		70-130	12		20
Tetrahydrofuran	107		115		58-130	7		20
2,2-Dichloropropane	87		97		63-133	11		20
1,2-Dibromoethane	98		99		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG588324-1 WG588324-2								
1,3-Dichloropropane	99		98		70-130	1		20
1,1,1,2-Tetrachloroethane	89		94		64-130	5		20
Bromobenzene	97		101		70-130	4		20
n-Butylbenzene	92		94		53-136	2		20
sec-Butylbenzene	98		103		70-130	5		20
tert-Butylbenzene	98		102		70-130	4		20
o-Chlorotoluene	93		97		70-130	4		20
p-Chlorotoluene	93		100		70-130	7		20
1,2-Dibromo-3-chloropropane	73		76		41-144	4		20
Hexachlorobutadiene	95		89		63-130	7		20
Isopropylbenzene	93		101		70-130	8		20
p-Isopropyltoluene	96		98		70-130	2		20
Naphthalene	94		106		70-130	12		20
n-Propylbenzene	94		98		69-130	4		20
1,2,3-Trichlorobenzene	98		101		70-130	3		20
1,2,4-Trichlorobenzene	96		101		70-130	5		20
1,3,5-Trimethylbenzene	90		97		64-130	7		20
1,2,4-Trimethylbenzene	94		98		70-130	4		20
trans-1,4-Dichloro-2-butene	78		81		70-130	4		20
Ethyl ether	102		108		59-134	6		20
tert-Butyl Alcohol	92		92		70-130	0		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG588324-1 WG588324-2								
Tertiary-Amyl Methyl Ether	96		101		66-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		89		70-130
Toluene-d8	91		88		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	96		104		70-130

Microextractables by GC - Westborough Lab Associated sample(s): 01,04 Batch: WG588434-2								
1,2-Dibromoethane	112		-		70-130	-		20
1,2-Dibromo-3-chloropropane	96		-		70-130	-		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Microextractables by GC - Westborough Lab Associated sample(s): 01,04 QC Batch ID: WG588434-3 QC Sample: L1301895-01 Client ID: MS Sample												
1,2-Dibromoethane	ND	0.254	0.268	105		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	0.254	0.232	91		-	-		70-130	-		20

SEMIVOLATILES

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 02/01/13 10:52
Analyst: JC

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 01/31/13 08:08

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

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**SAMPLE RESULTS**

Lab ID: L1301774-04
 Client ID: HA12-13 (OW)
 Sample Location: Not Specified

Date Collected: 01/30/13 09:40
 Date Received: 01/30/13
 Field Prep: Not Specified

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	65		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	114		10-120
4-Terphenyl-d14	114		41-149

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04
 Client ID: HA12-13 (OW)
 Sample Location: Not Specified
 Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 02/04/13 15:52
 Analyst: AS

Date Collected: 01/30/13 09:40
 Date Received: 01/30/13
 Field Prep: Not Specified
 Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:10

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	122	Q	10-120
4-Terphenyl-d14	105		41-149



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 02/01/13 07:56
 Analyst: JC

Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG587966-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 02/01/13 07:56
 Analyst: JC

Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG587966-1					
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
 Analytical Date: 02/01/13 07:56
 Analyst: JC

Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG587966-1					
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	89		10-120
4-Terphenyl-d14	103		41-149

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 02/01/13 19:43
 Analyst: AS

Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:10

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 04 Batch: WG587968-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 02/01/13 19:43
 Analyst: AS

Extraction Method: EPA 3510C
 Extraction Date: 01/31/13 08:10

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 04 Batch: WG587968-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	83		10-120
4-Terphenyl-d14	91		41-149

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG587966-2 WG587966-3								
Acenaphthene	93		90		37-111	3		30
Benzidine	23		27		10-75	16		30
1,2,4-Trichlorobenzene	77		64		39-98	18		30
Hexachlorobenzene	112		111		40-140	1		30
Bis(2-chloroethyl)ether	81		78		40-140	4		30
2-Chloronaphthalene	89		80		40-140	11		30
1,2-Dichlorobenzene	70		58		40-140	19		30
1,3-Dichlorobenzene	65		54		40-140	18		30
1,4-Dichlorobenzene	66		54		36-97	20		30
3,3'-Dichlorobenzidine	74		71		40-140	4		30
2,4-Dinitrotoluene	118	Q	120	Q	24-96	2		30
2,6-Dinitrotoluene	100		99		40-140	1		30
Azobenzene	113		110		40-140	3		30
Fluoranthene	111		113		40-140	2		30
4-Chlorophenyl phenyl ether	107		105		40-140	2		30
4-Bromophenyl phenyl ether	109		110		40-140	1		30
Bis(2-chloroisopropyl)ether	70		63		40-140	11		30
Bis(2-chloroethoxy)methane	90		81		40-140	11		30
Hexachlorobutadiene	75		61		40-140	21		30
Hexachlorocyclopentadiene	24	Q	19	Q	40-140	23		30
Hexachloroethane	62		51		40-140	19		30

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG587966-2 WG587966-3								
Isophorone	89		83		40-140	7		30
Naphthalene	81		71		40-140	13		30
Nitrobenzene	93		85		40-140	9		30
NitrosoDiPhenylAmine(NDPA)/DPA	103		104		40-140	1		30
n-Nitrosodi-n-propylamine	89		83		29-132	7		30
Bis(2-Ethylhexyl)phthalate	106		109		40-140	3		30
Butyl benzyl phthalate	117		121		40-140	3		30
Di-n-butylphthalate	112		116		40-140	4		30
Di-n-octylphthalate	112		115		40-140	3		30
Diethyl phthalate	110		111		40-140	1		30
Dimethyl phthalate	104		106		40-140	2		30
Benzo(a)anthracene	111		114		40-140	3		30
Benzo(a)pyrene	107		108		40-140	1		30
Benzo(b)fluoranthene	113		116		40-140	3		30
Benzo(k)fluoranthene	114		115		40-140	1		30
Chrysene	107		111		40-140	4		30
Acenaphthylene	92		86		45-123	7		30
Anthracene	105		108		40-140	3		30
Benzo(ghi)perylene	105		108		40-140	3		30
Fluorene	104		101		40-140	3		30
Phenanthrene	104		107		40-140	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG587966-2 WG587966-3								
Dibenzo(a,h)anthracene	110		112		40-140	2		30
Indeno(1,2,3-cd)Pyrene	109		111		40-140	2		30
Pyrene	109		112		26-127	3		30
Biphenyl	87		80		40-140	8		30
Aniline	36	Q	30	Q	40-140	18		30
4-Chloroaniline	56		43		40-140	26		30
1-Methylnaphthalene	93		82		41-103	13		30
2-Nitroaniline	101		99		52-143	2		30
3-Nitroaniline	68		64		25-145	6		30
4-Nitroaniline	103		107		51-143	4		30
Dibenzofuran	100		97		40-140	3		30
2-Methylnaphthalene	83		73		40-140	13		30
n-Nitrosodimethylamine	52		51		22-74	2		30
2,4,6-Trichlorophenol	102		96		30-130	6		30
P-Chloro-M-Cresol	105	Q	99	Q	23-97	6		30
2-Chlorophenol	91		84		27-123	8		30
2,4-Dichlorophenol	100		91		30-130	9		30
2,4-Dimethylphenol	99		89		30-130	11		30
2-Nitrophenol	88		85		30-130	3		30
4-Nitrophenol	68		68		10-80	0		30
2,4-Dinitrophenol	91		91		20-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG587966-2 WG587966-3								
4,6-Dinitro-o-cresol	109		110		20-164	1		30
Pentachlorophenol	99		96		9-103	3		30
Phenol	48		45		12-110	6		30
2-Methylphenol	83		76		30-130	9		30
3-Methylphenol/4-Methylphenol	77		71		30-130	8		30
2,4,5-Trichlorophenol	108		106		30-130	2		30
Benzoic Acid	23		22		10-164	4		30
Benzyl Alcohol	85		78		26-116	9		30
Carbazole	104		107		55-144	3		30
Pyridine	38		33		10-66	14		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	66		60		21-120
Phenol-d6	47		44		10-120
Nitrobenzene-d5	98		89		23-120
2-Fluorobiphenyl	91		83		15-120
2,4,6-Tribromophenol	108		116		10-120
4-Terphenyl-d14	116		118		41-149

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 04 Batch: WG587968-2 WG587968-3								
Acenaphthene	83		82		37-111	1		40
2-Chloronaphthalene	85		85		40-140	0		40
Fluoranthene	103		109		40-140	6		40
Hexachlorobutadiene	78		74		40-140	5		40
Naphthalene	83		80		40-140	4		40
Benzo(a)anthracene	96		102		40-140	6		40
Benzo(a)pyrene	92		96		40-140	4		40
Benzo(b)fluoranthene	99		104		40-140	5		40
Benzo(k)fluoranthene	99		103		40-140	4		40
Chrysene	90		97		40-140	7		40
Acenaphthylene	92		89		40-140	3		40
Anthracene	97		98		40-140	1		40
Benzo(ghi)perylene	96		95		40-140	1		40
Fluorene	96		98		40-140	2		40
Phenanthrene	89		91		40-140	2		40
Dibenzo(a,h)anthracene	96		98		40-140	2		40
Indeno(1,2,3-cd)Pyrene	98		98		40-140	0		40
Pyrene	98		103		26-127	5		40
1-Methylnaphthalene	84		82		40-140	2		40
2-Methylnaphthalene	87		84		40-140	4		40
Pentachlorophenol	99		106	Q	9-103	7		40

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 04 Batch: WG587968-2 WG587968-3								
Hexachlorobenzene	97		101		40-140	4		40
Hexachloroethane	74		69		40-140	7		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		54		21-120
Phenol-d6	40		39		10-120
Nitrobenzene-d5	84		79		23-120
2-Fluorobiphenyl	87		84		15-120
2,4,6-Tribromophenol	100		114		10-120
4-Terphenyl-d14	99		106		41-149

PCBS

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04
 Client ID: HA12-13 (OW)
 Sample Location: Not Specified
 Matrix: Water
 Analytical Method: 5,608
 Analytical Date: 02/01/13 13:59
 Analyst: JW

Date Collected: 01/30/13 09:40
 Date Received: 01/30/13
 Field Prep: Not Specified
 Extraction Method: EPA 608
 Extraction Date: 01/31/13 08:01
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 01/31/13
 Cleanup Method2: EPA 3660B
 Cleanup Date2: 01/31/13

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	101		30-150
Decachlorobiphenyl	136		30-150

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 02/01/13 13:09
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 01/31/13 08:01
Cleanup Method1: EPA 3665A
Cleanup Date1: 01/31/13
Cleanup Method2: EPA 3660B
Cleanup Date2: 01/31/13

Parameter	Result	Qualifier	Units	RL	MDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 04 Batch: WG587963-1					
Aroclor 1016	ND		ug/l	0.250	--
Aroclor 1221	ND		ug/l	0.250	--
Aroclor 1232	ND		ug/l	0.250	--
Aroclor 1242	ND		ug/l	0.250	--
Aroclor 1248	ND		ug/l	0.250	--
Aroclor 1254	ND		ug/l	0.250	--
Aroclor 1260	ND		ug/l	0.250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	115		30-150
Decachlorobiphenyl	129		30-150

Matrix Spike Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587963-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)

Aroclor 1016	ND	2	2.03	102		-	-		40-140	-		50
Aroclor 1260	ND	2	2.16	108		-	-		40-140	-		50

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	108				30-150
Decachlorobiphenyl	143				30-150

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04 Batch: WG587963-2								
Aroclor 1016	94		-		40-140	-		50
Aroclor 1260	96		-		40-140	-		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	97				30-150
Decachlorobiphenyl	130				30-150

Lab Duplicate Analysis **Batch Quality Control**

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587963-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Aroclor 1016	ND	ND	ug/l	NC		50
Aroclor 1221	ND	ND	ug/l	NC		50
Aroclor 1232	ND	ND	ug/l	NC		50
Aroclor 1242	ND	ND	ug/l	NC		50
Aroclor 1248	ND	ND	ug/l	NC		50
Aroclor 1254	ND	ND	ug/l	NC		50
Aroclor 1260	ND	ND	ug/l	NC		50

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	101		111		30-150
Decachlorobiphenyl	136		142		30-150

METALS

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04

Date Collected: 01/30/13 09:40

Client ID: HA12-13 (OW)

Date Received: 01/30/13

Sample Location: Not Specified

Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Iron, Total	ND		mg/l	0.05	--	1	02/01/13 08:33	02/05/13 12:37	EPA 3005A	19,200.7	MG
Mercury, Total	ND		mg/l	0.0002	--	1	02/05/13 11:42	02/05/13 14:28	EPA 245.1	3,245.1	TT
Dissolved Metals - Westborough Lab											
Antimony, Dissolved	ND		mg/l	0.0020	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Arsenic, Dissolved	0.0013		mg/l	0.0010	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Cadmium, Dissolved	ND		mg/l	0.0004	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Chromium, Dissolved	ND		mg/l	0.0020	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Copper, Dissolved	0.0028		mg/l	0.0020	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Iron, Dissolved	ND		mg/l	0.10	--	1	01/31/13 05:48	02/04/13 16:15	NA	19,200.7	BM
Lead, Dissolved	ND		mg/l	0.0020	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/01/13 15:37	02/02/13 10:40	EPA 245.1	3,245.1	KL
Nickel, Dissolved	ND		mg/l	0.0010	--	1	01/31/13 05:48	02/05/13 14:00	NA	1,6020A	AK
Selenium, Dissolved	ND		mg/l	0.010	--	1	01/31/13 05:48	02/05/13 14:00	NA	1,6020A	AK
Silver, Dissolved	ND		mg/l	0.0008	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM
Zinc, Dissolved	ND		mg/l	0.0200	--	1	01/31/13 05:48	02/04/13 22:47	NA	1,6020A	BM



Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04 D
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.0050	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Arsenic, Total	ND		mg/l	0.0025	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Cadmium, Total	ND		mg/l	0.0010	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Chromium, Total	ND		mg/l	0.0075	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Copper, Total	ND		mg/l	0.0050	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Lead, Total	ND		mg/l	0.0025	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Nickel, Total	ND		mg/l	0.0075	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Selenium, Total	ND		mg/l	0.025	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Silver, Total	ND		mg/l	0.0020	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK
Zinc, Total	ND		mg/l	0.0500	--	5	02/01/13 08:33	02/05/13 11:44	EPA 3005A	1,6020A	AK



Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 04 Batch: WG588197-1										
Antimony, Total	ND		mg/l	0.0010	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Arsenic, Total	ND		mg/l	0.0005	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Cadmium, Total	ND		mg/l	0.0002	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Chromium, Total	ND		mg/l	0.00150	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Copper, Total	ND		mg/l	0.0010	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Lead, Total	ND		mg/l	0.0005	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Nickel, Total	ND		mg/l	0.0015	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Selenium, Total	ND		mg/l	0.005	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Silver, Total	ND		mg/l	0.0004	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK
Zinc, Total	ND		mg/l	0.0100	--	1	02/01/13 08:33	02/05/13 11:07	1,6020A	AK

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 04 Batch: WG588287-1										
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/01/13 15:37	02/02/13 10:36	3,245.1	KL

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 04 Batch: WG588488-1										
Antimony, Dissolved	ND		mg/l	0.0010	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Arsenic, Dissolved	ND		mg/l	0.0005	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Copper, Dissolved	ND		mg/l	0.0010	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Lead, Dissolved	ND		mg/l	0.0010	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Nickel, Dissolved	ND		mg/l	0.0005	--	1	01/31/13 05:48	02/05/13 13:51	1,6020A	AK



Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Selenium, Dissolved	ND	mg/l	0.005	--	1	01/31/13 05:48	02/05/13 13:51	1,6020A	AK
Silver, Dissolved	ND	mg/l	0.0004	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	01/31/13 05:48	02/04/13 22:35	1,6020A	BM

Prep Information

Digestion Method: NA

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 04 Batch: WG588489-1									
Iron, Dissolved	ND	mg/l	0.05	--	1	01/31/13 05:48	02/04/13 16:08	19,200.7	BM

Prep Information

Digestion Method: NA

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 04 Batch: WG588705-1									
Iron, Total	ND	mg/l	0.05	--	1	02/01/13 08:33	02/05/13 12:17	19,200.7	MG

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 04 Batch: WG588755-1									
Mercury, Total	ND	mg/l	0.0002	--	1	02/05/13 11:42	02/05/13 14:24	3,245.1	TT

Prep Information

Digestion Method: EPA 245.1



Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301774

Report Date: 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 04 Batch: WG588197-2								
Antimony, Total	93		-		80-120	-		
Arsenic, Total	103		-		80-120	-		
Cadmium, Total	110		-		80-120	-		
Chromium, Total	94		-		80-120	-		
Copper, Total	102		-		80-120	-		
Lead, Total	104		-		80-120	-		
Nickel, Total	100		-		80-120	-		
Selenium, Total	103		-		80-120	-		
Silver, Total	100		-		80-120	-		
Zinc, Total	110		-		80-120	-		
Dissolved Metals - Westborough Lab Associated sample(s): 04 Batch: WG588287-2								
Mercury, Dissolved	100		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 04 Batch: WG588488-2					
Antimony, Dissolved	99	-	80-120	-	
Arsenic, Dissolved	104	-	80-120	-	
Cadmium, Dissolved	104	-	80-120	-	
Chromium, Dissolved	98	-	80-120	-	
Copper, Dissolved	101	-	80-120	-	
Lead, Dissolved	101	-	80-120	-	
Nickel, Dissolved	101	-	80-120	-	
Selenium, Dissolved	100	-	80-120	-	
Silver, Dissolved	99	-	80-120	-	
Zinc, Dissolved	102	-	80-120	-	
Dissolved Metals - Westborough Lab Associated sample(s): 04 Batch: WG588489-2					
Iron, Dissolved	100	-	85-115	-	
Total Metals - Westborough Lab Associated sample(s): 04 Batch: WG588705-2					
Iron, Total	120	Q	85-115	-	
Total Metals - Westborough Lab Associated sample(s): 04 Batch: WG588755-2					
Mercury, Total	89	-	85-115	-	

Matrix Spike Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588197-4 QC Sample: L1301828-03 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.7253	145	Q	-	-		80-120	-		20
Arsenic, Total	ND	0.12	0.3799	316	Q	-	-		80-120	-		20
Cadmium, Total	0.0241	0.051	0.3072	555	Q	-	-		80-120	-		20
Chromium, Total	ND	0.2	0.4120	206	Q	-	-		80-120	-		20
Copper, Total	0.0934	0.25	0.5860	197	Q	-	-		80-120	-		20
Lead, Total	0.0856	0.51	0.8547	151	Q	-	-		80-120	-		20
Nickel, Total	0.0708	0.5	0.7724	140	Q	-	-		80-120	-		20
Selenium, Total	ND	0.12	0.344	287	Q	-	-		80-120	-		20
Silver, Total	ND	0.05	0.2840	568	Q	-	-		80-120	-		20
Zinc, Total	5.415	0.5	5.778	72	Q	-	-		80-120	-		20
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588287-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)												
Mercury, Dissolved	ND	0.001	0.0014	138	Q	-	-		70-130	-		20

Matrix Spike Analysis **Batch Quality Control**

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588488-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)									
Antimony, Dissolved	ND	1	0.9432	94	-	-	80-120	-	20
Arsenic, Dissolved	0.0013	0.24	0.2408	100	-	-	80-120	-	20
Cadmium, Dissolved	ND	0.102	0.0994	97	-	-	80-120	-	20
Chromium, Dissolved	ND	0.4	0.3810	95	-	-	80-120	-	20
Copper, Dissolved	0.0028	0.5	0.4872	97	-	-	80-120	-	20
Lead, Dissolved	ND	1.02	1.025	100	-	-	80-120	-	20
Nickel, Dissolved	ND	1	0.9896	99	-	-	80-120	-	20
Selenium, Dissolved	ND	0.24	0.235	98	-	-	80-120	-	20
Silver, Dissolved	ND	0.1	0.0921	92	-	-	80-120	-	20
Zinc, Dissolved	ND	1	0.9982	100	-	-	80-120	-	20
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588489-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)									
Iron, Dissolved	ND	2	2.0	100	-	-	75-125	-	20
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588705-4 QC Sample: L1301927-02 Client ID: MS Sample									
Iron, Total	3.9	1	5.1	120	-	-	75-125	-	20
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588755-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)									
Mercury, Total	ND	0.001	0.0011	110	-	-	70-130	-	20

Lab Duplicate Analysis Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588197-3 QC Sample: L1301828-03 Client ID: DUP Sample						
Copper, Total	0.0934	0.0915	mg/l	2		20
Lead, Total	0.0856	0.0862	mg/l	1		20
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588197-3 QC Sample: L1301828-03 Client ID: DUP Sample						
Zinc, Total	5.415	5.470	mg/l	1		20
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588287-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588488-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Nickel, Dissolved	ND	ND	mg/l	NC		20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588488-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Antimony, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	0.0013	0.0014	mg/l	4		20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Chromium, Dissolved	ND	ND	mg/l	NC		20
Copper, Dissolved	0.0028	0.0028	mg/l	2		20
Lead, Dissolved	ND	ND	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Zinc, Dissolved	ND	ND	mg/l	NC		20

Project Name: BRIGHAM BLDG. FOR THE FUTURE

Project Number: 35198-101

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L1301774

Report Date: 02/05/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588489-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)					
Iron, Dissolved	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588705-3 QC Sample: L1301927-02 Client ID: DUP Sample					
Iron, Total	3.9	3.8	mg/l	3	20
Total Metals - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588755-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS & MISCELLANEOUS

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

SAMPLE RESULTS

Lab ID: L1301774-04
Client ID: HA12-13 (OW)
Sample Location: Not Specified
Matrix: Water

Date Collected: 01/30/13 09:40
Date Received: 01/30/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/31/13 13:45	30,2540D	DW
Cyanide, Total	0.019		mg/l	0.005	--	1	01/31/13 10:49	02/01/13 14:07	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/30/13 21:43	30,4500CL-D	EL
TPH	ND		mg/l	4.00	--	1	02/01/13 09:15	02/05/13 12:45	74,1664A	JO
Phenolics, Total	ND		mg/l	0.03	--	1	01/31/13 10:45	01/31/13 12:48	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/31/13 00:15	01/31/13 00:42	30,3500CR-D	JT
Anions by Ion Chromatography - Westborough Lab										
Chloride	783.		mg/l	25.0	--	50	-	01/31/13 18:00	44,300.0	AU



Project Name: BRIGHAM BLDG. FOR THE FUTURE

Lab Number: L1301774

Project Number: 35198-101

Report Date: 02/05/13

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG587911-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/30/13 21:43	30,4500CL-D	EL
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG587921-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/31/13 00:15	01/31/13 00:39	30,3500CR-D	JT
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG587956-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/31/13 13:45	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG587985-1										
Cyanide, Total	ND		mg/l	0.005	--	1	01/31/13 10:49	02/01/13 14:00	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG587991-1										
Phenolics, Total	ND		mg/l	0.03	--	1	01/31/13 10:45	01/31/13 12:47	4,420.1	MP
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG588254-1										
TPH	ND		mg/l	4.00	--	1	02/01/13 09:15	02/05/13 12:45	74,1664A	JO
Anions by Ion Chromatography - Westborough Lab for sample(s): 04 Batch: WG588638-1										
Chloride	ND		mg/l	0.500	--	1	-	01/31/13 16:59	44,300.0	AU

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BLDG. FOR THE FUTURE**Project Number:** 35198-101**Lab Number:** L1301774**Report Date:** 02/05/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG587911-2								
Chlorine, Total Residual	90		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG587921-2								
Chromium, Hexavalent	100		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG587985-2								
Cyanide, Total	107		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG587991-2								
Phenolics, Total	100		-		82-111	-		12
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG588254-2								
TPH	80		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 04 Batch: WG588638-2								
Chloride	108		-		90-110	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587921-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587985-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)												
Cyanide, Total	0.019	0.2	0.255	118	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587991-4 QC Sample: L1301776-02 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.76	95		-	-		77-124	-		12
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588254-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)												
TPH	ND	20.4	15.9	78		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588638-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)												
Chloride	783	200	990	104		-	-		40-151	-		18

Lab Duplicate Analysis **Batch Quality Control**

Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301774
Report Date: 02/05/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587911-3 QC Sample: L1301755-02 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587921-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587956-2 QC Sample: L1301754-02 Client ID: DUP Sample						
Solids, Total Suspended	7600	6300	mg/l	19		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587985-3 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Cyanide, Total	0.019	0.019	mg/l	4		30
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG587991-3 QC Sample: L1301776-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		12
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588254-3 QC Sample: L1301868-02 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 04 QC Batch ID: WG588638-4 QC Sample: L1301774-04 Client ID: HA12-13 (OW)						
Chloride	783	780.	mg/l	0		18

Project Name: BRIGHAM BLDG. FOR THE FUTURE**Lab Number:** L1301774**Project Number:** 35198-101**Report Date:** 02/05/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1301774-01A	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1301774-01B	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1301774-02A	Vial HCl preserved	A	N/A	3	Y	Absent	8260-SIM(14)
L1301774-03A	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-04A	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-04B	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-04C	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-04D	Vial HCl preserved	A	N/A	3	Y	Absent	8260-SIM(14)
L1301774-04E	Vial HCl preserved	A	N/A	3	Y	Absent	8260-SIM(14)
L1301774-04F	Vial HCl preserved	A	N/A	3	Y	Absent	8260-SIM(14)
L1301774-04G	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1301774-04H	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1301774-04I	Amber 1000ml unpreserved	A	7	3	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1301774-04J	Amber 1000ml unpreserved	A	7	3	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1301774-04K	Amber 1000ml Na2S2O3	A	7	3	Y	Absent	PCB-608(7)
L1301774-04L	Amber 1000ml Na2S2O3	A	7	3	Y	Absent	PCB-608(7)
L1301774-04M	Amber 1000ml HCl preserved	A	N/A	3	Y	Absent	TPH-1664(28)
L1301774-04N	Amber 1000ml HCl preserved	A	N/A	3	Y	Absent	TPH-1664(28)
L1301774-04O	Amber 1000ml H2SO4 preserved	A	<2	3	Y	Absent	TPHENOL-420(28)
L1301774-04P	Plastic 1000ml unpreserved	A	7	3	Y	Absent	TSS-2540(7)
L1301774-04Q	Plastic 500ml unpreserved	A	7	3	Y	Absent	CL-300(28),TRC-4500(1)
L1301774-04R	Plastic 500ml unpreserved	A	7	3	Y	Absent	HEXCR-3500(1)
L1301774-04S	Plastic 250ml NaOH preserved	A	>12	3	Y	Absent	TCN-4500(14)
L1301774-04U	Amber 1000ml unpreserved	A	7	3	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1301774-04V	Amber 1000ml unpreserved	A	7	3	Y	Absent	8270TCL(7),8270TCL-SIM(7)

*Values in parentheses indicate holding time in days



Project Name: BRIGHAM BLDG. FOR THE FUTURE**Project Number:** 35198-101**Lab Number:** L1301774**Report Date:** 02/05/13**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1301774-04W	Plastic 250ml HNO3 preserved	A	<2	3	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1301774-04X	Plastic 250ml HNO3 preserved spl	A	<2	3	Y	Absent	CU-6020S(180),FE-RI(180),SE-6020S(180),ZN-6020S(180),CR-6020S(180),NI-6020S(180),PB-6020S(180),AG-6020S(180),AS-6020S(180),HG-R(28),SB-6020S(180),CD-6020S(180)
L1301774-04Z	Plastic 250ml HNO3 preserved	A	<2	3	Y	Absent	TSS-2540(7)
L1301774-05A	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-05B	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-05C	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-06A	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-06B	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1301774-06C	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)

*Values in parentheses indicate holding time in days



Project Name: BRIGHAM BLDG. FOR THE FUTURE
Project Number: 35198-101

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GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



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Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

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REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commissoon on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO3-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CI-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.



Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1400

2/3

CHAIN OF CUSTODY RECORD

Phone (617) 886-7400
Fax (617) 886-7600
Page 1 of 1

H&A FILE NO.	35198-101	LABORATORY	Alpha	DELIVERY DATE	01/30/13
PROJECT NAME	Brigham Bldg for the Future	ADDRESS	Westborough, MA	TURNAROUND TIME	STD
H&A CONTACT	M. Balfe / C. Jones	CONTACT	E. Hall	PROJECT MANAGER	M. Balfe

Sample No.	Date	Time	Depth	Type	Analysis Requested													Number of Containers	Comments (special instructions, precautions, additional method numbers, etc.)
					(14)	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫		

Trip blank - 1	01/30/13	0800	—	AQ		X												1	Laboratory to use applicable DEP CAM methods, unless otherwise directed. ① EDB/504 ② TPH-1664 ③ 8270-SIM ④ PCBs-608 ⑤ Dissolved RGP Metals (LF) ⑥ Total RGP metals ⑦ TSS ⑧ CL, TRC ⑨ Hex Cr ⑩ 8260-SIM Dioxane ⑪ 8260 ⑫ TCN ⑬ Total Phenol ⑭ 8270
Trip blank - 2		0805	—															1	
Trip blank - 3		0810	—															1	
HA12-13 (ow)		0940	—		X	X	X	X	X	X	X	X	X	X	X	X	X	23	
HA12-11 (ow)		1140	—															3	
HA12-13A (ow)		1425	—															3	

Sampled and Relinquished by		Received by		LIQUID													AE		Sampling Comments					
Sign <i>Cody Smith</i>	Print <i>Cody Smith</i>	Firm <i>H&A</i>	Date <i>01/30/13</i> Time	Sign <i>M. Balfe</i>	Print <i>M. Balfe</i>	Firm <i>H&A</i>	Date <i>1/30/13</i> Time <i>1630</i>	A AH AFA AH AD AD A H A AF AF AC													VOA Vial	Amber Glass	NPDES RGP Sample HA12-13 (ow)	
								1000 40 1000 1000 1000 250 250 1000 500 500 40 40 250													Plastic Bottle	Preservative		
																					Volume			
Relinquished by		Received by		SOLID															Evidence samples were tampered with? YES NO					
Sign <i>M. Balfe</i>	Print <i>M. Balfe</i>	Firm <i>H&A</i>	Date <i>1/30/13</i> Time <i>1630</i>	Sign <i>Michael Speck</i>	Print <i>Michael Speck</i>	Firm <i>ALPHA</i>	Date <i>1/30/13</i> Time <i>1630</i>														VOA Vial	Amber Glass	If YES, please explain in section below.	
																					Clear Glass	Preservative		
																					Volume			
Relinquished by		Received by		PRESERVATION KEY																				
Sign <i>Michael Speck</i>	Print <i>Michael Speck</i>	Firm <i>ALPHA</i>	Date <i>1/30/13</i> Time <i>1800</i>	Sign <i>William McCorden</i>	Print <i>William McCorden</i>	Firm <i>Alpha</i>	Date <i>1/30/13</i> Time <i>1800</i>	A Sample chilled C NaOH E H ₂ SO ₄ G Methanol B Sample filtered D HNO ₃ F HCL H Water (NaHSO ₄ (circle))																

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

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

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

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

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

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

Required Reporting Limits and Data Quality Objectives

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



ANALYTICAL REPORT

Lab Number:	L1301976
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM BLDG FOR THE FUTURE
Project Number:	35198-101
Report Date:	02/07/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1301976-01	TRIP BLANK	Not Specified	01/31/13 00:00
L1301976-02	HA12-13A OW	Not Specified	01/31/13 09:30
L1301976-03	HA12-13A OW	Not Specified	02/01/13 10:40

Project Name: BRIGHAM BLDG FOR THE FUTURE

Lab Number: L1301976

Project Number: 35198-101

Report Date: 02/07/13

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1301976-01, -02, and -03, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-Dioxane (0.00367), Acrolein (0.02137), and tert-Butyl Alcohol (0.04815) ,as well as the average response factor for 1,4-Dioxane..

The continuing calibration standard, associated with L1301976-01, -02, and -03, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cynthia McQueen

Title: Technical Director/Representative

Date: 02/07/13

ORGANICS

VOLATILES

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-01
Client ID: TRIP BLANK
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/13 09:49
Analyst: MM

Date Collected: 01/31/13 00:00
Date Received: 02/01/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-01

Date Collected: 01/31/13 00:00

Client ID: TRIP BLANK

Date Received: 02/01/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1



Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-01

Date Collected: 01/31/13 00:00

Client ID: TRIP BLANK

Date Received: 02/01/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	91		70-130

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-02
Client ID: HA12-13A OW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/13 10:21
Analyst: MM

Date Collected: 01/31/13 09:30
Date Received: 02/01/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-02
 Client ID: HA12-13A OW
 Sample Location: Not Specified

Date Collected: 01/31/13 09:30
 Date Received: 02/01/13
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1



Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-02
 Client ID: HA12-13A OW
 Sample Location: Not Specified

Date Collected: 01/31/13 09:30
 Date Received: 02/01/13
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	93		70-130

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-03
Client ID: HA12-13A OW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/13 10:54
Analyst: MM

Date Collected: 02/01/13 10:40
Date Received: 02/01/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-03

Date Collected: 02/01/13 10:40

Client ID: HA12-13A OW

Date Received: 02/01/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13**SAMPLE RESULTS**

Lab ID: L1301976-03
 Client ID: HA12-13A OW
 Sample Location: Not Specified

Date Collected: 02/01/13 10:40
 Date Received: 02/01/13
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	94		70-130

Project Name: BRIGHAM BLDG FOR THE FUTURE

Lab Number: L1301976

Project Number: 35198-101

Report Date: 02/07/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/13 09:16
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG589221-3					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--



Project Name: BRIGHAM BLDG FOR THE FUTURE

Lab Number: L1301976

Project Number: 35198-101

Report Date: 02/07/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/13 09:16
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG589221-3					
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--



Project Name: BRIGHAM BLDG FOR THE FUTURE

Lab Number: L1301976

Project Number: 35198-101

Report Date: 02/07/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/13 09:16
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG589221-3					
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG FOR THE FUTURE

Project Number: 35198-101

Lab Number: L1301976

Report Date: 02/07/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG589221-1 WG589221-2								
Methylene chloride	90		88		70-130	2		20
1,1-Dichloroethane	91		90		70-130	1		20
Chloroform	89		88		70-130	1		20
Carbon tetrachloride	81		80		70-130	1		20
1,2-Dichloropropane	92		89		70-130	3		20
Dibromochloromethane	79		77		70-130	3		20
1,1,2-Trichloroethane	87		85		70-130	2		20
Tetrachloroethene	93		91		70-130	2		20
Chlorobenzene	92		89		70-130	3		20
Trichlorofluoromethane	96		97		70-130	1		20
1,2-Dichloroethane	88		86		70-130	2		20
1,1,1-Trichloroethane	86		83		70-130	4		20
Bromodichloromethane	78		78		70-130	0		20
trans-1,3-Dichloropropene	77		74		70-130	4		20
cis-1,3-Dichloropropene	82		78		70-130	5		20
1,1-Dichloropropene	91		89		70-130	2		20
Bromoform	81		82		70-130	1		20
1,1,2,2-Tetrachloroethane	95		91		70-130	4		20
Benzene	94		89		70-130	5		20
Toluene	94		91		70-130	3		20
Ethylbenzene	91		87		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG589221-1 WG589221-2								
Chloromethane	88		87		70-130	1		20
Bromomethane	57	Q	59	Q	70-130	3		20
Vinyl chloride	88		89		70-130	1		20
Chloroethane	98		98		70-130	0		20
1,1-Dichloroethene	90		91		70-130	1		20
trans-1,2-Dichloroethene	92		91		70-130	1		20
Trichloroethene	90		87		70-130	3		20
1,2-Dichlorobenzene	102		98		70-130	4		20
1,3-Dichlorobenzene	103		96		70-130	7		20
1,4-Dichlorobenzene	101		95		70-130	6		20
Methyl tert butyl ether	86		84		70-130	2		20
p/m-Xylene	94		89		70-130	5		20
o-Xylene	93		91		70-130	2		20
cis-1,2-Dichloroethene	92		91		70-130	1		20
Dibromomethane	89		84		70-130	6		20
1,2,3-Trichloropropane	96		90		70-130	6		20
Styrene	93		87		70-130	7		20
Dichlorodifluoromethane	77		78		70-130	1		20
Acetone	90		90		70-130	0		20
Carbon disulfide	83		84		70-130	1		20
2-Butanone	86		91		70-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG589221-1 WG589221-2								
4-Methyl-2-pentanone	90		80		70-130	12		20
2-Hexanone	80		76		70-130	5		20
Bromochloromethane	91		89		70-130	2		20
Tetrahydrofuran	91		91		70-130	0		20
2,2-Dichloropropane	77		77		70-130	0		20
1,2-Dibromoethane	92		88		70-130	4		20
1,3-Dichloropropane	91		87		70-130	4		20
1,1,1,2-Tetrachloroethane	84		81		70-130	4		20
Bromobenzene	103		98		70-130	5		20
n-Butylbenzene	89		86		70-130	3		20
sec-Butylbenzene	96		90		70-130	6		20
tert-Butylbenzene	97		92		70-130	5		20
o-Chlorotoluene	97		91		70-130	6		20
p-Chlorotoluene	95		88		70-130	8		20
1,2-Dibromo-3-chloropropane	76		72		70-130	5		20
Hexachlorobutadiene	102		101		70-130	1		20
Isopropylbenzene	90		88		70-130	2		20
p-Isopropyltoluene	96		92		70-130	4		20
Naphthalene	93		89		70-130	4		20
n-Propylbenzene	96		91		70-130	5		20
1,2,3-Trichlorobenzene	97		95		70-130	2		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BLDG FOR THE FUTURE**Lab Number:** L1301976**Project Number:** 35198-101**Report Date:** 02/07/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG589221-1 WG589221-2								
1,2,4-Trichlorobenzene	96		86		70-130	11		20
1,3,5-Trimethylbenzene	97		91		70-130	6		20
1,2,4-Trimethylbenzene	96		92		70-130	4		20
Ethyl ether	91		86		70-130	6		20
Isopropyl Ether	91		89		70-130	2		20
Ethyl-Tert-Butyl-Ether	85		81		70-130	5		20
Tertiary-Amyl Methyl Ether	83		79		70-130	5		20
1,4-Dioxane	89		90		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		90		70-130
Toluene-d8	97		94		70-130
4-Bromofluorobenzene	96		95		70-130
Dibromofluoromethane	99		100		70-130

Project Name: BRIGHAM BLDG FOR THE FUTURE**Project Number:** 35198-101**Lab Number:** L1301976**Report Date:** 02/07/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1301976-01A	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-02A	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-02B	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-02C	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-03A	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-03B	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1301976-03C	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)

*Values in parentheses indicate holding time in days

Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
Report Date: 02/07/13

Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: BRIGHAM BLDG FOR THE FUTURE
Project Number: 35198-101

Lab Number: L1301976
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REFERENCES

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

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO₃-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO₃-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1400

CHAIN OF CUSTODY RECORD

Phone (617) 886-7400
Fax (617) 886-7600
Page 1 of 1

H&A FILE NO. 35795-101
PROJECT NAME Brighton Bldg Earth Contam
H&A CONTACT M. Balfe / G. Hill

LABORATORY Alpha
ADDRESS Westborough MA
CONTACT G. Hill

DELIVERY DATE 02/01/13
TURNAROUND TIME STD
PROJECT MANAGER M. Balfe

Sample No.	Date	Time	Depth	Type	VOA	Analysis Requested														Number of Containers	Comments (special instructions, precautions, additional method numbers, etc.)			
						ABNs	PAH only	MCP Metals	Pesticides	PCBs	VPH	Full Suite	C-ranges only	EPH	Full Suite	C-ranges only	TPH (specify)	TCLP (specify)	Reactivity			Ignitability	Corrosivity	
Frip blank	1/31/13	0800	—	462	X																		1	Laboratory to use applicable DEP CAM methods, unless otherwise directed.
HA12-134 CW	1/31/13	0930	—	↓	X																		3	
HA12-134 CW	02/01/13	1040	—	↓	X																		3	

Sampled and Relinquished by Sign <u>[Signature]</u> Print <u>Clay Smith</u> Firm <u>H&A</u> Date <u>2/01/13</u> Time <u></u>		Received by Sign <u>[Signature]</u> Print <u>M. Balfe</u> Firm <u>Alpha</u> Date <u>2/1/13</u> Time <u>16:20</u>		LIQUID VOA Vial ☒ Amber Glass ☐ Plastic Bottle ☐ Preservative ☐ Volume ☐														Sampling Comments	
Relinquished by Sign <u>[Signature]</u> Print <u>M. Balfe</u> Firm <u>H&A</u> Date <u>2/1/13</u> Time <u>16:20</u>		Received by Sign <u>[Signature]</u> Print <u>David Ventour</u> Firm <u>Alpha</u> Date <u>2/1/13</u> Time <u>16:20</u>		SOLID VOA Vial ☐ Amber Glass ☐ Clear Glass ☐ Preservative ☐ Volume ☐														Evidence samples were tampered with? YES NO If YES, please explain in section below.	
Relinquished by Sign <u>[Signature]</u> Print <u>David Ventour</u> Firm <u>Alpha</u> Date <u>2/1/13</u> Time <u>17:45</u>		Received by Sign <u>[Signature]</u> Print <u>Elizabeth Ryan</u> Firm <u>Alpha</u> Date <u>2/1/13</u> Time <u>17:45</u>		PRESERVATION KEY A Sample chilled C NaOH E H ₂ SO ₄ G Methanol B Sample filtered D HNO ₃ F HCL H Water/NaHSO ₄ (circle)															

If Presumptive Certainty Data Package is needed, initial all sections: ☒ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty. ☒ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein. ☒ This Chain of Custody Record (specify) _____ includes _____ does not include samples defined as Drinking Water Samples. ☒ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyze		Required Reporting Limits and Data Quality Objectives ☒ RC-S1 ☒ S1 ☐ GW1 ☐ RC-S2 ☐ S2 ☐ GW2 ☐ RC-GW1 ☐ S3 ☐ GW3 ☐ RC-GW2	
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7A
Volatile CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1301976

Instrument ID: Jack.i Calibration Date: 07-FEB-2013 Time: 07:39

Lab File ID: 0207A05 Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No: Init. Calib. Times : 05:12 08:27

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
=====	=====	=====	=====	=====	=====	
dichlorodifluoromethane	.64523	.49514	.1	-23	20	F
chloromethane	.85815	.75126	.1	-12	20	
vinyl chloride	.74734	.66069	.1	-12	20	
bromomethane	.34243	.19558	.1	-43	20	F
chloroethane	.38222	.37581	.1	-2	20	
trichlorofluoromethane	.80609	.77741	.1	-4	20	
ethyl ether	.29547	.26794	.05	-9	20	
1,1,-dichloroethene	.50354	.45287	.1	-10	20	
carbon disulfide	1.3122	1.0949	.1	-17	20	
freon-113	.5278	.52967	.1	0	20	
iodomethane	100	62.187	.05	-38	20	F
acrolein	.02311	.01501	.05	-35	20	F
methylene chloride	.54473	.48796	.1	-10	20	
acetone	100	89.785	.1	-10	20	
trans-1,2-dichloroethene	.52569	.48554	.1	-8	20	
methyl acetate	.35148	.34157	.1	-3	20	
methyl tert butyl ether	1.3678	1.1699	.1	-14	20	
tert butyl alcohol	.04604	.03515	.05	-24	20	F
Diisopropyl Ether	2.2843	2.0720	.01	-9	20	
1,1-dichloroethane	1.1166	1.0163	.2	-9	20	
acrylonitrile	.17679	.17018	.05	-4	20	
Halothane	.3482	.31236	.05	-10	20	
Ethyl-Tert-Butyl-Ether	2.0238	1.7290	.05	-15	20	
vinyl acetate	1.4852	1.3450	.05	-9	20	
cis-1,2-dichloroethene	.60542	.55678	.1	-8	20	
2,2-dichloropropane	.93665	.72483	.05	-23	20	F
cyclohexane	1.2029	1.1508	.01	-4	30	
bromochloromethane	.2942	.26674	.05	-9	20	
chloroform	.98473	.87739	.2	-11	20	
carbontetrachloride	.88387	.71775	.1	-19	20	
tetrahydrofuran	.17845	.16257	.05	-9	20	
ethyl acetate	.52612	.4585	.05	-13	20	
1,1,1-trichloroethane	.93106	.80187	.1	-14	20	
1,1-dichloropropene	.80812	.73793	.05	-9	20	
2-butanone	.22663	.19603	.1	-13	20	
benzene	2.3083	2.1677	.5	-6	20	
Tertiary-Amyl Methyl Ether	1.5162	1.2588	.05	-17	20	
1,2-dichloroethane	.77727	.67981	.1	-13	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1301976

Instrument ID: Jack.i

Calibration Date: 07-FEB-2013 Time: 07:39

Lab File ID: 0207A05

Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No:

Init. Calib. Times : 05:12 08:27

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
methy1 cyclohexane	.80624	.7094	.01	-12	30	
trichloroethene	.60578	.54334	.2	-10	20	
dibromomethane	.32409	.28889	.05	-11	20	
1,2-dichloropropane	.66873	.61211	.1	-8	20	
bromodichloromethane	.77195	.60176	.2	-22	20	F
1,4-dioxane	.00357	.00316	.05	-11	20	F
2-chloroethylvinyl ether	.36359	.30711	.05	-16	20	
cis-1,3-dichloropropene	.95253	.78402	.2	-18	20	
toluene	1.7393	1.6280	.4	-6	20	
tetrachloroethene	.74738	.69558	.2	-7	20	
4-methyl-2-pentanone	.19071	.17069	.1	-10	20	
trans-1,3-dichloropropene	1.0054	.77034	.1	-23	20	F
1,1,2-trichloroethane	.4611	.4	.1	-13	20	
ethyl-methacrylate	.79762	.67857	.01	-15	30	
chlorodibromomethane	.68565	.54201	.1	-21	20	F
1,3-dichloropropane	.94496	.85814	.05	-9	20	
1,2-dibromoethane	.56437	.51837	.1	-8	20	
2-hexanone	.41697	.33552	.1	-20	20	
chlorobenzene	1.9046	1.7544	.5	-8	20	
ethyl benzene	3.2477	2.9544	.1	-9	20	
1,1,1,2-tetrachloroethane	.74423	.62787	.05	-16	20	
p/m xylene	1.2393	1.1710	.1	-6	20	
o xylene	1.2106	1.1285	.3	-7	20	
bromoform	.73016	.59209	.1	-19	20	
styrene	2.0445	1.8925	.3	-7	20	
isopropylbenzene	2.9493	2.6636	.1	-10	20	
bromobenzene	1.4791	1.5265	.05	3	20	
1,4-dichlorobutane	2.3290	2.1677	.01	-7	30	
n-propylbenzene	5.8917	5.6589	.05	-4	20	
1,1,2,2,-tetrachloroethane	1.1963	1.1395	.3	-5	20	
4-ethyltoluene	5.4451	5.3097	.05	-2	20	
2-chlorotoluene	4.3736	4.2550	.05	-3	20	
1,2,3-trichloropropane	.95439	.92144	.05	-3	20	
1,3,5-trimethylbenzene	4.1590	4.0203	.05	-3	20	
trans-1,4-dichloro-2-butene	.49076	.41248	.05	-16	20	
4-chlorotoluene	4.0417	3.8518	.05	-5	20	
tert-butylbenzene	3.4272	3.3180	.05	-3	20	
1,2,4-trimethylbenzene	4.1473	3.9604	.05	-5	20	

FORM VII MCP-8260-10



ANALYTICAL REPORT

Lab Number:	L1302108
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM BLDG OF THE FUTURE
Project Number:	35198-101
Report Date:	02/11/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1302108-01	TRIP BLANK	Not Specified	02/05/13 00:00
L1302108-02	HA12-4 OW	Not Specified	02/05/13 10:06

Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1302108-01 and -02, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-Dioxane (0.00267), as well as the average response factor for 1,4-Dioxane.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 02/11/13

ORGANICS

VOLATILES

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-01
Client ID: TRIP BLANK
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/08/13 16:37
Analyst: MM

Date Collected: 02/05/13 00:00
Date Received: 02/05/13
Field Prep: Not Specified

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

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-01

Date Collected: 02/05/13 00:00

Client ID: TRIP BLANK

Date Received: 02/05/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-01

Date Collected: 02/05/13 00:00

Client ID: TRIP BLANK

Date Received: 02/05/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	100		70-130

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-02
Client ID: HA12-4 OW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/11/13 09:16
Analyst: MM

Date Collected: 02/05/13 10:06
Date Received: 02/05/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	48		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	4.2		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-02

Date Collected: 02/05/13 10:06

Client ID: HA12-4 OW

Date Received: 02/05/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	4.4		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**SAMPLE RESULTS**

Lab ID: L1302108-02

Date Collected: 02/05/13 10:06

Client ID: HA12-4 OW

Date Received: 02/05/13

Sample Location: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

1,4-Dioxane	ND		ug/l	250	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	102		70-130

Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/08/13 07:59
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG589454-3					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--



Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/08/13 07:59
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG589454-3					
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--



Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/08/13 07:59
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG589454-3					
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/11/13 08:43
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG589595-3					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--



Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/11/13 08:43
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG589595-3					
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--



Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/11/13 08:43
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 02 Batch: WG589595-3					
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	92		70-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: BRIGHAM BLDG OF THE FUTURE

Lab Number: L1302108

Project Number: 35198-101

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG589454-1 WG589454-2								
Methylene chloride	109		96		70-130	13		20
1,1-Dichloroethane	103		94		70-130	9		20
Chloroform	100		94		70-130	6		20
Carbon tetrachloride	90		86		70-130	5		20
1,2-Dichloropropane	100		93		70-130	7		20
Dibromochloromethane	86		82		70-130	5		20
1,1,2-Trichloroethane	98		87		70-130	12		20
Tetrachloroethene	108		96		70-130	12		20
Chlorobenzene	104		101		70-130	3		20
Trichlorofluoromethane	105		98		70-130	7		20
1,2-Dichloroethane	95		90		70-130	5		20
1,1,1-Trichloroethane	94		87		70-130	8		20
Bromodichloromethane	88		82		70-130	7		20
trans-1,3-Dichloropropene	84		79		70-130	6		20
cis-1,3-Dichloropropene	86		84		70-130	2		20
1,1-Dichloropropene	99		92		70-130	7		20
Bromoform	78		80		70-130	3		20
1,1,2,2-Tetrachloroethane	104		92		70-130	12		20
Benzene	103		95		70-130	8		20
Toluene	104		98		70-130	6		20
Ethylbenzene	100		96		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG589454-1 WG589454-2								
Chloromethane	112		114		70-130	2		20
Bromomethane	85		78		70-130	9		20
Vinyl chloride	102		95		70-130	7		20
Chloroethane	108		96		70-130	12		20
1,1-Dichloroethene	102		98		70-130	4		20
trans-1,2-Dichloroethene	100		96		70-130	4		20
Trichloroethene	100		94		70-130	6		20
1,2-Dichlorobenzene	104		102		70-130	2		20
1,3-Dichlorobenzene	106		103		70-130	3		20
1,4-Dichlorobenzene	106		102		70-130	4		20
Methyl tert butyl ether	95		83		70-130	13		20
p/m-Xylene	104		100		70-130	4		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	95		96		70-130	1		20
Dibromomethane	98		90		70-130	9		20
1,2,3-Trichloropropane	102		94		70-130	8		20
Styrene	101		99		70-130	2		20
Dichlorodifluoromethane	94		89		70-130	5		20
Acetone	116		92		70-130	23	Q	20
Carbon disulfide	91		89		70-130	2		20
2-Butanone	124		101		70-130	20		20

Lab Control Sample Analysis Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG589454-1 WG589454-2								
4-Methyl-2-pentanone	91		80		70-130	13		20
2-Hexanone	95		83		70-130	13		20
Bromochloromethane	105		96		70-130	9		20
Tetrahydrofuran	111		90		70-130	21	Q	20
2,2-Dichloropropane	94		87		70-130	8		20
1,2-Dibromoethane	100		91		70-130	9		20
1,3-Dichloropropane	101		96		70-130	5		20
1,1,1,2-Tetrachloroethane	92		87		70-130	6		20
Bromobenzene	104		100		70-130	4		20
n-Butylbenzene	103		100		70-130	3		20
sec-Butylbenzene	104		102		70-130	2		20
tert-Butylbenzene	102		98		70-130	4		20
o-Chlorotoluene	101		96		70-130	5		20
p-Chlorotoluene	99		94		70-130	5		20
1,2-Dibromo-3-chloropropane	79		71		70-130	11		20
Hexachlorobutadiene	99		92		70-130	7		20
Isopropylbenzene	103		99		70-130	4		20
p-Isopropyltoluene	104		99		70-130	5		20
Naphthalene	103		89		70-130	15		20
n-Propylbenzene	103		99		70-130	4		20
1,2,3-Trichlorobenzene	101		94		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG589454-1 WG589454-2								
1,2,4-Trichlorobenzene	103		96		70-130	7		20
1,3,5-Trimethylbenzene	102		98		70-130	4		20
1,2,4-Trimethylbenzene	101		99		70-130	2		20
Ethyl ether	101		91		70-130	10		20
Isopropyl Ether	100		91		70-130	9		20
Ethyl-Tert-Butyl-Ether	92		85		70-130	8		20
Tertiary-Amyl Methyl Ether	89		79		70-130	12		20
1,4-Dioxane	91		95		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		89		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	91		93		70-130
Dibromofluoromethane	103		95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG589595-1 WG589595-2								
Methylene chloride	99		95		70-130	4		20
1,1-Dichloroethane	93		91		70-130	2		20
Chloroform	89		90		70-130	1		20
Carbon tetrachloride	85		84		70-130	1		20
1,2-Dichloropropane	93		90		70-130	3		20
Dibromochloromethane	76		76		70-130	0		20
1,1,2-Trichloroethane	83		81		70-130	2		20
Tetrachloroethene	92		90		70-130	2		20
Chlorobenzene	91		90		70-130	1		20
Trichlorofluoromethane	99		99		70-130	0		20
1,2-Dichloroethane	88		86		70-130	2		20
1,1,1-Trichloroethane	88		86		70-130	2		20
Bromodichloromethane	80		79		70-130	1		20
trans-1,3-Dichloropropene	75		72		70-130	4		20
cis-1,3-Dichloropropene	80		78		70-130	3		20
1,1-Dichloropropene	90		89		70-130	1		20
Bromoform	70		66	Q	70-130	6		20
1,1,2,2-Tetrachloroethane	86		84		70-130	2		20
Benzene	94		92		70-130	2		20
Toluene	92		89		70-130	3		20
Ethylbenzene	88		86		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG589595-1 WG589595-2								
Chloromethane	112		116		70-130	4		20
Bromomethane	62	Q	56	Q	70-130	10		20
Vinyl chloride	96		89		70-130	8		20
Chloroethane	97		95		70-130	2		20
1,1-Dichloroethene	99		93		70-130	6		20
trans-1,2-Dichloroethene	96		94		70-130	2		20
Trichloroethene	93		88		70-130	6		20
1,2-Dichlorobenzene	93		93		70-130	0		20
1,3-Dichlorobenzene	98		95		70-130	3		20
1,4-Dichlorobenzene	98		92		70-130	6		20
Methyl tert butyl ether	81		79		70-130	3		20
p/m-Xylene	91		90		70-130	1		20
o-Xylene	90		89		70-130	1		20
cis-1,2-Dichloroethene	89		89		70-130	0		20
Dibromomethane	88		86		70-130	2		20
1,2,3-Trichloropropane	88		89		70-130	1		20
Styrene	89		89		70-130	0		20
Dichlorodifluoromethane	75		84		70-130	11		20
Acetone	76		83		70-130	9		20
Carbon disulfide	88		87		70-130	1		20
2-Butanone	82		102		70-130	22	Q	20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG589595-1 WG589595-2								
4-Methyl-2-pentanone	80		82		70-130	2		20
2-Hexanone	72		76		70-130	5		20
Bromochloromethane	92		91		70-130	1		20
Tetrahydrofuran	93		87		70-130	7		20
2,2-Dichloropropane	84		82		70-130	2		20
1,2-Dibromoethane	87		84		70-130	4		20
1,3-Dichloropropane	88		83		70-130	6		20
1,1,1,2-Tetrachloroethane	85		78		70-130	9		20
Bromobenzene	95		92		70-130	3		20
n-Butylbenzene	93		93		70-130	0		20
sec-Butylbenzene	95		89		70-130	7		20
tert-Butylbenzene	90		90		70-130	0		20
o-Chlorotoluene	90		88		70-130	2		20
p-Chlorotoluene	88		87		70-130	1		20
1,2-Dibromo-3-chloropropane	64	Q	63	Q	70-130	2		20
Hexachlorobutadiene	91		90		70-130	1		20
Isopropylbenzene	89		86		70-130	3		20
p-Isopropyltoluene	92		88		70-130	4		20
Naphthalene	83		82		70-130	1		20
n-Propylbenzene	91		89		70-130	2		20
1,2,3-Trichlorobenzene	88		87		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRIGHAM BLDG OF THE FUTURE

Project Number: 35198-101

Lab Number: L1302108

Report Date: 02/11/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 02 Batch: WG589595-1 WG589595-2								
1,2,4-Trichlorobenzene	90		90		70-130	0		20
1,3,5-Trimethylbenzene	90		91		70-130	1		20
1,2,4-Trimethylbenzene	92		91		70-130	1		20
Ethyl ether	93		87		70-130	7		20
Isopropyl Ether	90		89		70-130	1		20
Ethyl-Tert-Butyl-Ether	83		82		70-130	1		20
Tertiary-Amyl Methyl Ether	76		77		70-130	1		20
1,4-Dioxane	92		98		70-130	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	90		92		70-130
Toluene-d8	97		95		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	100		97		70-130

Project Name: BRIGHAM BLDG OF THE FUTURE**Lab Number:** L1302108**Project Number:** 35198-101**Report Date:** 02/11/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1302108-01A	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1302108-02A	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1302108-02B	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)
L1302108-02C	Vial HCl preserved	A	N/A	3	Y	Absent	MCP-8260-10(14)

*Values in parentheses indicate holding time in days



Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: BRIGHAM BLDG OF THE FUTURE
Project Number: 35198-101

Lab Number: L1302108
Report Date: 02/11/13

REFERENCES

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

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO₃-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO₃-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1400

3/3

CHAIN OF CUSTODY RECORD

Fax (617) 886-7600

Page 1 of 1

DELIVERY DATE	02/05/13
TURNAROUND TIME	STD
PROJECT MANAGER	M. Butler

HAI2-4 OW



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

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

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

7A
Volatile CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1302108

Instrument ID: Jack.i Calibration Date: 11-FEB-2013 Time: 07:06

Lab File ID: 0211A06 Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No: 8260 CCAL Init. Calib. Times : 05:28 08:43

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.6313	.47228	.1	-25	20	F
chloromethane	.35643	.40025	.1	12	20	
vinyl chloride	.71658	.68757	.1	-4	20	
bromomethane	.29559	.18303	.1	-38	20	F
chloroethane	.38221	.37151	.1	-3	20	
trichlorofluoromethane	.78856	.78253	.1	-1	20	
ethyl ether	.26603	.24817	.05	-7	20	
1,1,-dichloroethene	.4658	.4628	.1	-1	20	
carbon disulfide	1.3568	1.1928	.1	-12	20	
freon-113	.50767	.5083	.1	0	20	
iodomethane	100	62.882	.05	-37	20	F
acrolein	.01792	.01826	.05	2	20	F
methylene chloride	.50838	.50269	.1	-1	20	
acetone	100	76.413	.1	-24	20	F
trans-1,2-dichloroethene	.52818	.50447	.1	-4	20	
methyl acetate	.32483	.31936	.1	-2	20	
methyl tert butyl ether	1.1882	.96197	.1	-19	20	
tert butyl alcohol	.03987	.02675	.05	-33	20	F
Diisopropyl Ether	1.9614	1.7635	.01	-10	20	
1,1-dichloroethane	1.0972	1.0222	.2	-7	20	
acrylonitrile	.16766	.15653	.05	-7	20	
Halothane	.33655	.32102	.05	-5	20	
Ethyl-Tert-Butyl-Ether	1.6254	1.3474	.05	-17	20	
vinyl acetate	1.1235	1.0774	.05	-4	20	
cis-1,2-dichloroethene	.59026	.52345	.1	-11	20	
2,2-dichloropropane	.82681	.69904	.05	-15	20	
cyclohexane	1.1519	1.1372	.01	-1	30	
bromochloromethane	.27908	.25554	.05	-8	20	
chloroform	.93965	.8373	.2	-11	20	
carbontetrachloride	.82267	.69988	.1	-15	20	
tetrahydrofuran	.1579	.14682	.05	-7	20	
ethyl acetate	.4435	.38107	.05	-14	20	
1,1,1-trichloroethane	.90439	.79141	.1	-12	20	
1,1-dichloropropene	.76107	.68328	.05	-10	20	
2-butanone	.18915	.15546	.1	-18	20	
benzene	2.1308	2.0022	.5	-6	20	
Tertiary-Amyl Methyl Ether	1.2647	.9663	.05	-24	20	F
1,2-dichloroethane	.7427	.65134	.1	-12	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1302108

Instrument ID: Jack.i Calibration Date: 11-FEB-2013 Time: 07:06

Lab File ID: 0211A06 Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No: 8260 CCAL Init. Calib. Times : 05:28 08:43

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
methy1 cyclohexane	.76601	.68414	.01	-11	30	
trichloroethene	.55601	.51634	.2	-7	20	
dibromomethane	.30102	.26445	.05	-12	20	
1,2-dichloropropane	.60812	.56488	.1	-7	20	
bromodichloromethane	.72605	.57896	.2	-20	20	F
1,4-dioxane	.00324	.00296	.05	-8	20	F
2-chloroethylvinyl ether	.30496	.21783	.05	-29	20	F
cis-1,3-dichloropropene	.86287	.68829	.2	-20	20	F
toluene	1.5879	1.4526	.4	-9	20	
tetrachloroethene	.66212	.6092	.2	-8	20	
4-methyl-2-pentanone	.15349	.12222	.1	-20	20	F
trans-1,3-dichloropropene	.84802	.63442	.1	-25	20	F
1,1,2-trichloroethane	.39842	.33204	.1	-17	20	
ethyl-methacrylate	.68429	.51722	.01	-24	30	
chlorodibromomethane	.59046	.44721	.1	-24	20	F
1,3-dichloropropane	.80786	.70752	.05	-12	20	
1,2-dibromoethane	.47926	.41716	.1	-13	20	
2-hexanone	.32289	.23272	.1	-28	20	F
chlorobenzene	1.6899	1.5448	.5	-9	20	
ethyl benzene	2.9851	2.6309	.1	-12	20	
1,1,1,2-tetrachloroethane	.64614	.55075	.05	-15	20	
p/m xylene	1.1490	1.0492	.1	-9	20	
o xylene	1.1052	.99989	.3	-10	20	
bromoform	.65239	.45984	.1	-30	20	F
styrene	1.8682	1.6680	.3	-11	20	
isopropylbenzene	2.7441	2.4326	.1	-11	20	
bromobenzene	1.3445	1.2770	.05	-5	20	
n-propylbenzene	5.4522	4.9429	.05	-9	20	
1,4-dichlorobutane	1.9794	1.6495	.01	-17	30	
1,1,2,2,-tetrachloroethane	1.0258	.87928	.3	-14	20	
4-ethyltoluene	4.9688	4.6547	.05	-6	20	
2-chlorotoluene	4.0168	3.6208	.05	-10	20	
1,2,3-trichloropropane	.80278	.70927	.05	-12	20	
1,3,5-trimethybenzene	3.7906	3.4278	.05	-10	20	
trans-1,4-dichloro-2-butene	.43867	.29388	.05	-33	20	F
4-chorotoluene	3.6739	3.2170	.05	-12	20	
tert-butylbenzene	3.2721	2.9324	.05	-10	20	
1,2,4-trimethylbenzene	3.8476	3.5334	.05	-8	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1302108

Instrument ID: Jack.i Calibration Date: 08-FEB-2013 Time: 06:22

Lab File ID: 0208A02 Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No: 8260 CCAL Init. Calib. Times : 05:28 08:43

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.6313	.59594	.1	-6	20	
chloromethane	.35643	.39866	.1	12	20	
vinyl chloride	.71658	.73478	.1	3	20	
bromomethane	.29559	.25145	.1	-15	20	
chloroethane	.38221	.41432	.1	8	20	
trichlorofluoromethane	.78856	.82759	.1	5	20	
ethyl ether	.26603	.26834	.05	1	20	
1,1,-dichloroethene	.4658	.47576	.1	2	20	
carbon disulfide	1.3568	1.2402	.1	-9	20	
freon-113	.50767	.5522	.1	9	20	
iodomethane	100	67.258	.05	-33	20	F
acrolein	.01792	.02086	.05	16	20	F
methylene chloride	.50838	.55554	.1	9	20	
acetone	100	116	.1	16	20	
trans-1,2-dichloroethene	.52818	.52779	.1	0	20	
methyl acetate	.32483	.34932	.1	8	20	
methyl tert butyl ether	1.1882	1.1327	.1	-5	20	
tert butyl alcohol	.03987	.03636	.05	-9	20	F
Diisopropyl Ether	1.9614	1.9710	.01	0	20	
1,1-dichloroethane	1.0972	1.1327	.2	3	20	
acrylonitrile	.16766	.17409	.05	4	20	
Halothane	.33655	.33223	.05	-1	20	
Ethyl-Tert-Butyl-Ether	1.6254	1.4950	.05	-8	20	
vinyl acetate	1.1235	1.2314	.05	10	20	
cis-1,2-dichloroethene	.59026	.56285	.1	-5	20	
2,2-dichloropropane	.82681	.77976	.05	-6	20	
cyclohexane	1.1519	1.2184	.01	6	30	
bromochloromethane	.27908	.29214	.05	5	20	
chloroform	.93965	.94089	.2	0	20	
carbontetrachloride	.82267	.74276	.1	-10	20	
tetrahydrofuran	.1579	.17578	.05	11	20	
ethyl acetate	.4435	.48492	.05	9	20	
1,1,1-trichloroethane	.90439	.85437	.1	-6	20	
1,1-dichloropropene	.76107	.75458	.05	-1	20	
2-butanone	.18915	.2347	.1	24	20	F
benzene	2.1308	2.1948	.5	3	20	
Tertiary-Amyl Methyl Ether	1.2647	1.1251	.05	-11	20	
1,2-dichloroethane	.7427	.70515	.1	-5	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1302108

Instrument ID: Jack.i Calibration Date: 08-FEB-2013 Time: 06:22

Lab File ID: 0208A02 Init. Calib. Date(s): 08-JAN-2 08-JAN-2

Sample No: 8260 CCAL Init. Calib. Times : 05:28 08:43

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
methy1 cyclohexane	.76601	.75396	.01	-2	30	
trichloroethene	.55601	.55929	.2	1	20	
dibromomethane	.30102	.29577	.05	-2	20	
1,2-dichloropropane	.60812	.61112	.1	0	20	
bromodichloromethane	.72605	.63791	.2	-12	20	
1,4-dioxane	.00324	.00293	.05	-9	20	F
2-chloroethylvinyl ether	.30496	.24313	.05	-20	20	F
cis-1,3-dichloropropene	.86287	.73843	.2	-14	20	
toluene	1.5879	1.6512	.4	4	20	
tetrachloroethene	.66212	.71799	.2	8	20	
4-methyl-2-pentanone	.15349	.13977	.1	-9	20	
trans-1,3-dichloropropene	.84802	.71097	.1	-16	20	
1,1,2-trichloroethane	.39842	.39102	.1	-2	20	
ethyl-methacrylate	.68429	.60641	.01	-11	30	
chlorodibromomethane	.59046	.50517	.1	-14	20	
1,3-dichloropropane	.80786	.81944	.05	1	20	
1,2-dibromoethane	.47926	.48199	.1	1	20	
2-hexanone	.32289	.30601	.1	-5	20	
chlorobenzene	1.6899	1.7575	.5	4	20	
ethyl benzene	2.9851	2.9886	.1	0	20	
1,1,1,2-tetrachloroethane	.64614	.59344	.05	-8	20	
p/m xylene	1.1490	1.1926	.1	4	20	
o xylene	1.1052	1.1095	.3	0	20	
bromoform	.65239	.51109	.1	-22	20	F
styrene	1.8682	1.8799	.3	1	20	
isopropylbenzene	2.7441	2.8231	.1	3	20	
bromobenzene	1.3445	1.4036	.05	4	20	
n-propylbenzene	5.4522	5.6140	.05	3	20	
1,4-dichlorobutane	1.9794	1.8538	.01	-6	30	
1,1,2,2,-tetrachloroethane	1.0258	1.0667	.3	4	20	
4-ethyltoluene	4.9688	5.1496	.05	4	20	
2-chlorotoluene	4.0168	4.0433	.05	1	20	
1,2,3-trichloropropane	.80278	.81962	.05	2	20	
1,3,5-trimethybenzene	3.7906	3.8598	.05	2	20	
trans-1,4-dichloro-2-butene	.43867	.34932	.05	-20	20	F
4-chorotoluene	3.6739	3.6209	.05	-1	20	
tert-butylbenzene	3.2721	3.3233	.05	2	20	
1,2,4-trimethylbenzene	3.8476	3.8801	.05	1	20	

FORM VII MCP-8260-10



ANALYTICAL REPORT

Lab Number:	L1302811
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM BUILDING FOR FUTURE
Project Number:	35198-101
Report Date:	02/25/13

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Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1302811-01	HA12-13	BOSTON	02/19/13 08:25
L1302811-02	HA12-13D	BOSTON	02/19/13 08:30
L1302811-03	MRIVER	BOSTON	02/19/13 09:00
L1302811-04	MRIVERD	BOSTON	02/19/13 09:05

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

Case Narrative (continued)

Cyanide, Physiologically Available

L1302811-04: The Physiologically Available Cyanide result is slightly higher than the Total Cyanide result. The difference is within % RPD limits; therefore, no further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/25/13

INORGANICS & MISCELLANEOUS

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

SAMPLE RESULTS

Lab ID: L1302811-01
Client ID: HA12-13
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/19/13 08:25
Date Received: 02/19/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.033		mg/l	0.005	--	1	02/20/13 09:43	02/20/13 14:27	30,4500CN-CE	JO
Cyanide, Amenable	0.033		mg/l	0.010	--	2	02/20/13 09:43	02/20/13 14:20	30,4500CN-G	JO
Cyanide, Physiologically Available	0.009		mg/l	0.005	--	1	02/21/13 14:05	02/22/13 14:14	64,9014(M)	JO



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

SAMPLE RESULTS

Lab ID: L1302811-02
Client ID: HA12-13D
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/19/13 08:30
Date Received: 02/19/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.033		mg/l	0.005	--	1	02/20/13 09:43	02/20/13 14:27	30,4500CN-CE	JO
Cyanide, Amenable	0.034		mg/l	0.010	--	2	02/20/13 09:43	02/20/13 14:20	30,4500CN-G	JO
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	02/21/13 14:05	02/22/13 14:15	64,9014(M)	JO



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

SAMPLE RESULTS

Lab ID: L1302811-03
Client ID: MRIVER
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/19/13 09:00
Date Received: 02/19/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/13 09:43	02/20/13 14:30	30,4500CN-CE	JO
Cyanide, Amenable	ND		mg/l	0.010	--	2	02/20/13 09:43	02/20/13 14:20	30,4500CN-G	JO
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	02/21/13 14:05	02/22/13 14:16	64,9014(M)	JO



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

SAMPLE RESULTS

Lab ID: L1302811-04
Client ID: MRIVERD
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/19/13 09:05
Date Received: 02/19/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/13 09:43	02/20/13 14:30	30,4500CN-CE	JO
Cyanide, Amenable	ND		mg/l	0.010	--	2	02/20/13 09:43	02/20/13 14:20	30,4500CN-G	JO
Cyanide, Physiologically Available	0.007		mg/l	0.005	--	1	02/21/13 14:05	02/22/13 14:16	64,9014(M)	JO



Project Name: BRIGHAM BUILDING FOR FUTURE

Lab Number: L1302811

Project Number: 35198-101

Report Date: 02/25/13

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG591043-1										
Cyanide, Amenable	ND		mg/l	0.010	--	2	02/20/13 09:43	02/20/13 14:20	30,4500CN-G	JO
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG591044-1										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/13 09:43	02/20/13 14:20	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG591317-1										
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	02/21/13 14:05	02/22/13 14:11	64,9014(M)	JO

Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BUILDING FOR FUTURE**Project Number:** 35198-101**Lab Number:** L1302811**Report Date:** 02/25/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG591043-2								
Cyanide, Amenable	100		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG591044-2								
Cyanide, Total	108		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG591317-2								
Cyanide, Physiologically Available	109		-		80-120	-		
General Chemistry - Westborough Lab NEGATIVE LCS Associated sample(s): 01-04 Batch: WG591317-3								
Cyanide, Physiologically Available	1		-		0-10	-		

Matrix Spike Analysis Batch Quality Control

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG591044-4 QC Sample: L1302811-04 Client ID: MRIVERD												
Cyanide, Total	ND	0.2	0.209	104		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG591317-5 QC Sample: L1302811-04 Client ID: MRIVERD												
Cyanide, Physiologically Available	0.007	0.2	0.209	101		-	-		75-125	-		20

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L1302811
Report Date: 02/25/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG591043-3 QC Sample: L1302811-01 Client ID: HA12-13						
Cyanide, Amenable	0.033	0.033	mg/l	0		
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG591044-3 QC Sample: L1302810-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG591317-4 QC Sample: L1302811-04 Client ID: MRIVERD						
Cyanide, Physiologically Available	0.007	0.006	mg/l	8		20

Project Name: BRIGHAM BUILDING FOR FUTURE**Project Number:** 35198-101**Lab Number:** L1302811**Report Date:** 02/25/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1302811-01A	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-01B	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-02A	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-02B	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-03A	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-03B	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-04A	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)
L1302811-04B	Plastic 250ml NaOH preserved	A	>12	4	Y	Absent	TCN-4500(14),ACN-4500(14),PACN(14)

*Values in parentheses indicate holding time in days



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: BRIGHAM BUILDING FOR FUTURE
Project Number: 35198-101

Lab Number: L1302811
Report Date: 02/25/13

REFERENCES

- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisison on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO3-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CI-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Page 20 of 22 *Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.



ANALYTICAL REPORT

Lab Number:	L1303066
Client:	Haley & Aldrich, Inc. 465 Medford St S-2200 Charlestown, MA 02129-1400
ATTN:	Mark Balfe
Phone:	(617) 886-7304
Project Name:	BRIGHAM BUILDING OF THE FUTURE
Project Number:	35198-101
Report Date:	02/27/13

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LA000065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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



Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1303066-01	HA12-13	BOSTON	02/21/13 11:50
L1303066-02	MRIVER	BOSTON	02/21/13 12:30

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cynthia McQueen

Title: Technical Director/Representative

Date: 02/27/13

INORGANICS & MISCELLANEOUS

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

SAMPLE RESULTS

Lab ID: L1303066-01
Client ID: HA12-13
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/21/13 11:50
Date Received: 02/21/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Nitrate	0.920		mg/l	0.100	--	1	-	02/22/13 01:29	30,4500NO3-F	DB
Nitrogen, Total Kjeldahl	1.45		mg/l	0.300	--	1	02/23/13 22:45	02/26/13 20:47	30,4500N-C	AT
Phosphorus, Total	0.057		mg/l	0.010	--	1	02/25/13 11:50	02/25/13 15:17	30,4500P-E	SD



Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

SAMPLE RESULTS

Lab ID: L1303066-02
Client ID: MRIVER
Sample Location: BOSTON
Matrix: Water

Date Collected: 02/21/13 12:30
Date Received: 02/21/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Nitrate	0.899		mg/l	0.100	--	1	-	02/22/13 01:30	30,4500NO3-F	DB
Nitrogen, Total Kjeldahl	2.89		mg/l	0.300	--	1	02/23/13 22:45	02/26/13 20:39	30,4500N-C	AT
Phosphorus, Total	0.097		mg/l	0.020	--	2	02/25/13 11:50	02/25/13 14:59	30,4500P-E	SD



Project Name: BRIGHAM BUILDING OF THE FUTURE**Lab Number:** L1303066**Project Number:** 35198-101**Report Date:** 02/27/13

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG591376-1										
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	02/21/13 23:48	30,4500NO3-F	DB
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG591642-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	--	1	02/23/13 22:45	02/26/13 20:24	30,4500N-C	AT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG591791-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	02/25/13 11:50	02/25/13 14:57	30,4500P-E	SD



Lab Control Sample Analysis**Batch Quality Control****Project Name:** BRIGHAM BUILDING OF THE FUTURE**Lab Number:** L1303066**Project Number:** 35198-101**Report Date:** 02/27/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG591376-2								
Nitrogen, Nitrate	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG591642-2								
Nitrogen, Total Kjeldahl	98		-		78-122	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG591791-2								
Phosphorus, Total	114		-		80-120	-		

Matrix Spike Analysis Batch Quality Control

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591376-4 QC Sample: L1302900-01 Client ID: MS Sample												
Nitrogen, Nitrate	0.184	4	4.14	99		-	-		83-113	-		17
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591642-4 QC Sample: L1303024-01 Client ID: MS Sample												
Nitrogen, Total Kjeldahl	8.08	8	16.7	108		-	-		77-111	-		24
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591791-3 QC Sample: L1303125-01 Client ID: MS Sample												
Phosphorus, Total	0.058	0.5	0.578	104		-	-		75-125	-		20

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L1303066
Report Date: 02/27/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591376-3 QC Sample: L1302900-01 Client ID: DUP Sample						
Nitrogen, Nitrate	0.184	ND	mg/l	NC		17
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591642-3 QC Sample: L1303024-01 Client ID: DUP Sample						
Nitrogen, Total Kjeldahl	8.08	8.25	mg/l	2		24
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG591791-4 QC Sample: L1303125-01 Client ID: DUP Sample						
Phosphorus, Total	0.058	0.061	mg/l	5		20

Project Name: BRIGHAM BUILDING OF THE FUTURE**Project Number:** 35198-101**Lab Number:** L1303066**Report Date:** 02/27/13**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA**Cooler Information Custody Seal****Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1303066-01A	Plastic 250ml H2SO4 preserved	A	<2	3	Y	Absent	TKN-4500(28),TPHOS-4500(28)
L1303066-01B	Plastic 250ml unpreserved	A	7	3	Y	Absent	NO3-4500(2)
L1303066-02A	Plastic 250ml H2SO4 preserved	A	<2	3	Y	Absent	TKN-4500(28),TPHOS-4500(28)
L1303066-02B	Plastic 250ml unpreserved	A	7	3	Y	Absent	NO3-4500(2)

Container Comments

L1303066-01B

L1303066-02B

*Values in parentheses indicate holding time in days

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported

Report Format: Data Usability Report



Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

Data Qualifiers

due to obvious interference.

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: BRIGHAM BUILDING OF THE FUTURE
Project Number: 35198-101

Lab Number: L1303066
Report Date: 02/27/13

REFERENCES

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

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised December 19, 2012 - Westboro Facility

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

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

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

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

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

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010B, 6010C, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8330, 8151A, 8260B, 8260C, 8270C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9030B, 9040B, 9045C, 6010B, 6010C, 6020, 6020A, 7471A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8270D, 8330, 8151A, 8081A, 8081B, 8082, 8082A, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

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

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. *Microbiology Parameters:* (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. *Organic Parameters:* 504.1, 524.2.)

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

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

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. *Organic Parameters:* EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM2520B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. *Organic Parameters:* SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D, 9050A, 9065, 9251. *Organic Parameters:* SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. NELAP Accredited.

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. *Organic Parameters:* EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6010C, 6020, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, LACHAT 10-204-00-1-A, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015, 9010C, 9030B. *Organic Parameters:* EPA 624, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 625, 608, 8081A, 8081B, 8151A, 8330, 8082, 8082A, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010B, 6010C, 7196A, 7471A, 7471B, 9012B, 9014, 9065, 9050A, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. *Organic Parameters:* EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8015B, 8015C, 8081A, 8081B, 8151A, 8330, 8082 8082A, 3540C,

3546, 3580A, 5030B, 5035A-H, 5035A-L.)

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

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

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO₃-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

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

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

Rhode Island Department of Health Certificate/Lab ID: LAO00065. **NELAP Accredited via NJ-DEP.**

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476. **NELAP Accredited.**

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. **NELAP Accredited.**

Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.2, 2320B, 4500F-C, 4500NO₃-F, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 9010B, 9040B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9030B, 9010B, 9012A, 9014 9040B, 9045C, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 355B0, 3580A, 3630C, 6020A, 8260B, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO₃-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Page 17 of 19 *Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C,

8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:

EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO₂ in a soil matrix, NO₃ in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.



WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 2/27/13

ALPHA Job #: L13 03066

Project Information

Project Name: Brigham Building & the future

Project Location: Boston

Project #: 35198-101

Project Manager: MARK BALFE

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: 2/27/13 Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program Criteria

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Haley & Aldrich

Address: 465 MEDFORD ST

Charlestown MA 02129

Phone: (617) 886-7400

Fax:

Email: MBALFE@HaleyAldrich.com

☐ These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All CAM methods for inorganic analyses require MS every 20 soil samples)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	ANALYSIS TKN, Total Phosphorus, NITRATE										SAMPLE HANDLING Filtration _____ ☐ Done ☐ Not needed ☐ Lab to do Preservation ☐ Lab to do (Please specify below)		Sample Specific Comments	TOTAL # BOTTLES
		Date	Time																
030661	HA12-13	2/21/13	11:50	GW	CAS	X	X												2
12	MRIVER	2/21/13	12:30	SW	CAS	X	X												2

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT
MA MCP or CT RCP?

FORM NO: 01-01 (rev. 18-Jan-2010)

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Container Type P P
Preservative D A

Relinquished By:

Date/Time

Received By:

Date/Time

Chris Sullivan
J. C. C.

2/21/13 14:00

2-21-13 14:30

Richard Scott 2-21-13 16:07
2-21-13 15:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.