



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**Region 1**

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

**CERTIFIED MAIL RETURN RECEIPT REQUESTED**

**AUG 28 2012**

Thomas Martin  
Director of Design and Construction  
70 North Harvard Street (SHAD HALL)  
Allston, MA 02138

Re: Authorization to discharge under the Remediation General Permit (RGP) –  
MAG910000. Executive Educational Tunnel site located at Harvard Business School  
Campus, adjacent to Soldiers Field Road in Allston, MA 02163, Suffolk County;  
Authorization # MAG910531

Dear Mr. Martin:

Based on the review of a Notice of Intent (NOI) submitted on behalf of Harvard Business School 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 parameters that exceeded Appendix III limits. The checklist also includes other parameters for which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For each parameter the dilution factor 27.41 for this site is within a dilution range greater than ten to fifty (>10 to 50), established in the RGP. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic of 50

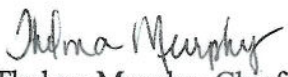
ug/L, trivalent chromium of 489 ug/L, nickel of 290 ug/L, selenium of 50 ug/L, zinc of 666 ug/L and iron of 5,000ug/L, are required to achieve permit compliance at your site.

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

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on May 13, 2014. 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](mailto:Alvarez.Victor@epa.gov), if you have any questions.

Sincerely,



Thelma Murphy, Chief  
Storm Water and Construction  
Permits Section

Enclosure

cc: Robert Kubit, MassDEP  
Lisa Peterson, Cambridge DPW  
Sandhya N. Potana, Haley & Aldrich



**2010 Remediation General Permit  
Summary of Monitoring Parameters<sup>[1]</sup>**

<b>NPDES Authorization Number:</b>		<b>MAG910531</b>
Authorization Issued:	April, 2012	
Facility/Site Name:	Executive Educational Tunnel	
Facility/Site Address:	Harvard Business School Campus adjacent to Soldiers Field Road. Allston, MA 02163, Suffolk County	
	Email address of owner: <a href="mailto:tmartin@hbs.edu">tmartin@hbs.edu</a>	
Legal Name of Operator:	Harvard Business School	
Operator contact name, title, and Address:	Thomas Martin, Director of Design and Construction. Presidents and Fellows of Harvard College acting by and through Harvard Business School.	
	Email:	
Estimated date of Completion:	May 13, 2014	
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Sub-category A. General Urban Fill Sites	
RGP Termination Date:	September 10, 2015	
Receiving Water:	Charles River	

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

	<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#60.2/ML5ug/L
✓	2. Total Residual Chlorine (TRC) <sup>1</sup>	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) <sup>2, 3</sup>	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



	<b><u>Parameter</u></b>	<b><u>Effluent Limit/Method#/ML</u></b> (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) <sup>4</sup>	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 <sup>5</sup>	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) <sup>6</sup>	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



	<b><u>Parameter</u></b>	<b><u>Effluent Limit/Method#/ML</u></b> (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 <sup>7</sup>	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	b. Benzo(a) Pyrene <sup>7</sup>	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene <sup>7</sup>	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	d. Benzo(k)Fluoranthene <sup>7</sup>	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene <sup>7</sup>	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene <sup>7</sup>	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 <sup>7</sup>	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 <sup>5</sup>	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) <sup>8, 9</sup>	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
✓	38. Chloride	Monitor only/Me# 300.0/ ML 0.1ug/L

<b><u>Metal parameter</u></b>	<b><u>Total Recoverable Metal Limit @ H <sup>10</sup> = 50 mg/l CaCO<sub>3</sub> for discharges in Massachusetts (ug/l) <sup>11/12</sup></u></b>	<b><u>Minimum level=ML</u></b>
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		<b>Freshwater</b>		
	39. Antimony	5.6/ML 10		
✓	40. Arsenic **	100/ML20		
	41. Cadmium **	0.2/ML10		
✓	42. Chromium III (trivalent) **	489/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 **	290/ML20		
✓	48. Selenium **	50/ML20		
	49. Silver	1.2/ML10		
✓	50. Zinc **	666/ML15		
✓	51. Iron	5,000/ML 20		

	<b>Other Parameters</b>	<b>Limit</b>
✓	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 <sup>13</sup>
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab <sup>13</sup>
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab <sup>13</sup>
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab <sup>14</sup>
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab <sup>14</sup>
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab <sup>14</sup>
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab <sup>14</sup>
	61. Maximum Change in Temperature in MA - Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab <sup>14</sup>
	62. Maximum Change in Temperature in MA - Any Class SA water body - Coastal	1.5°F; 1/Month/Grab <sup>14</sup>
	63. Maximum Change in Temperature in MA - Any Class SB water body - July to September	1.5°F; 1/Month/Grab <sup>14</sup>
	64. Maximum Change in Temperature in MA -Any Class SB water body - October to June	4°F; 1/Month/Grab <sup>14</sup>

**Footnotes:**

<sup>1</sup> 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).

<sup>2</sup> 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.



<sup>3</sup> 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).

<sup>4</sup> BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

<sup>5</sup> 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.

<sup>6</sup> 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.*

<sup>7</sup> 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.

<sup>8</sup> 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.*

<sup>9</sup> 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).

<sup>10</sup> Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

<sup>11</sup> 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.

<sup>12</sup> 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).

<sup>13</sup> pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

<sup>14</sup> Temperature sampling per Method 170.1

Haley & Aldrich, Inc.  
465 Medford St.  
Suite 2200  
Boston, MA 02129-1400

Tel: 617.886.7400  
Fax: 617.886.7600  
HaleyAldrich.com



13 April 2012  
File No. 37646-140

US Environmental Protection Agency  
Industrial NPDES Permits (CIP)  
1 Congress Street, Suite 1100  
Boston, MA 02114-2023

Attention: Ms. Shelly Puleo

Subject: Notice of Intent (NOI)  
Temporary Construction Dewatering  
Executive Education Tunnel  
Harvard Business School  
Allston, Massachusetts

Dear Ms. Puleo:

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

The Site is bordered by the proposed Tata Hall building to the east, Baker Hall to the west, Kresge Hall to the south, and McArthur and McCollum Halls to the north. Site grades range from approximately El. 14 to El. 17.5 Boston City Base Datum (BCB).

**Request for Consideration:** *In order to meet the required construction completion date for the subject project, construction activities are anticipated to begin as early as May 31, 2012. A Contractor has not yet been selected for the project, but we anticipate that a Contractor will be selected within one week following the date of this application. As a Contractor has not yet been selected, we have indicated the Operator is "To Be Determined" on Pg 1 of the attached application form (Section A – General Information). An executed signature page including the Contractor's contact information will be provided as soon as selection of a Contractor has been made. In the meantime, we would request that this application for an NPDES RGP temporary construction dewatering permit be reviewed and preliminary approval be provided pending receipt of the executed signature page.*





### **Site History**

Historic site use was evaluated based on a review of historic maps dated 1890, 1902, 1909, and 1959; Sanborn maps dated 1925, 1993, 1994, 1995 and 1996; and aerial photographs dated 1955, 1969, 1971, 1978 1995, 2001 and 2005. The subject site is depicted as vacant land from 1890 to the present day. The site is depicted as marshland associated with the Charles River in historic maps dating to 1902. Several residential dwellings are shown on historic maps of the vicinity of the Site from 1890 and 1909 along North Harvard Street to the west. More recently (between 1925 and 1959), adjacent parcels have been improved with Harvard Business School buildings, including graduate student housing, as well as athletic fields and parking areas.

### **Proposed Construction**

The proposed development of the Site includes construction of Phase 2 portion of the Executive Education Tunnel connecting the Baker Hall to the proposed Tata Hall Building and associated utilities. Excavation to construct the proposed tunnel is anticipated to extend to depths up to 16 ft below existing site grades and approximately 10 ft below groundwater levels.

### **Regulatory Background**

Testing of soil samples collected in December 2011 indicated concentrations of lead, total petroleum hydrocarbons (TPH), and poly aromatic hydrocarbons (PAHs) at concentrations exceeding the applicable RCS-1 Reportable Concentrations. Based on the results of the microscopy analysis, the presence of PAHs detected in soil at concentrations greater than RCS-1 is attributed to the presence of asphalt and is therefore exempt from reporting under the MCP. A Release Notification Form (RNF) and a Response Action Outcome (RAO) will be submitted to MassDEP prior to the start of proposed construction in June 2012.

### **Groundwater Sampling**

In support of the NOI, one unfiltered groundwater sample was obtained from observation well HA-T3B (OW), on 27 March 2012. 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 identified concentrations of total iron and total cyanide above applicable NPDES RGP Effluent Limits but below applicable MCP RCGW-2 Reportable Concentrations. The results of water quality testing conducted for this NOI are summarized in Table I. The location of the observation well is shown on Figure 2.

### **Dewatering System and Off-site Discharge**

Prior to discharge, collected water will be routed through a sedimentation tank with bag filters, to remove suspended solids and un-dissolved 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 remove cyanide and iron from the water. Construction dewatering under this RGP NOI will include piping and discharging to private storm drains

owned by Harvard located near the site. The storm drains travels west/northwest and discharge directly into the Charles River. The proposed discharge route is shown on Figure 3. For the purpose of this permit application, we have proposed two potential discharge locations as shown on Figure 2; actual discharge locations will be confirmed once a Contractor has been selected for the project.

During construction, it will be necessary to perform temporary dewatering to control surface water runoff from precipitation, groundwater seepage and construction-generated water to enable construction in-the-dry. Construction and construction dewatering activities are currently anticipated to begin as early as 31 May 2012. On average, we estimate effluent discharge rates of about 100 to 150 gallons per minute (gpm) or less, with occasional peak flows of approximately 300 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations.

### **Appendices**

The completed "Suggested Notice of Intent" (NOI) form as provided in the RGP is enclosed in Appendix A. The Site is owned by Harvard Business School. Haley & Aldrich will monitor the Contractor's dewatering activities on behalf of Harvard. The Contractor will be selected within one week following the date of this application. As a Contractor has not yet been selected, we have indicated the Operator is "To Be Determined" on Pg 1 of the attached application form (Section A – General Information). An executed signature page including the Contractor's contact information will be provided as soon as selection of a Contractor has been made.

A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, is included in Appendix B. Appendices C and D include National Register of Historic Places and Endangered Species Act Documentation, respectively. A copy of the groundwater testing laboratory data reports from samples obtained by Haley & Aldrich in March 2012 are provided in Appendix E.

### **Dilution Factor Application for Metals**

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

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

where  $Q_d$  is the maximum discharge flow rate, assumed to be 300 gallons per minute (GPM) or approximately 0.67 cubic feet per second (cfs), and  $Q_s$  is the receiving water flow rate, minimum for 7 consecutive days with a recurrence interval of 10 years, assumed to be 17.7 cfs based on data collected by the United States Geological Survey (USGS) and published in the "Clean Charles 2005 Water Quality Report, 2003 Core Monitoring Report" prepared by the US EPA Office of Environmental Measurement and Evaluation dated November 2004. Using these assumed values, the DF is equal to 27.41. According to Appendix IV of the Remediation General Permit, the ceiling limitation for the calculated dilution factor of 27.41 for iron is 5000 µg/L. Since the testing of the groundwater at the Site indicates that iron concentrations are greater than 5000 µg /L, treatment to remove total iron from the dewatering effluent will be included.



**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



Sandhya N. Potana  
Assistant Project Manager



Andrew R. Chan  
Senior Project Manager

**Attachments:**

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

c: Harvard Business School; Attn: Beth Davis

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## Tables



Sample Name Lab Sample ID Sample Date  Sample Type	RCGW-2 MCP Reportable  Concentration	Typical NPDES Remediation General Permit (RGP)  Discharge Limits	HA-T3B (OW)  L1205141-01 3/27/2012  GW Sample	HA-T3B (OW)  L1205360-02 3/27/2012  GW Sample (Filtered)	HA-T3B (OW)  L1205360-01 3/27/2012  GW Sample (Un-Filtered)
<b>Volatile Organics by GC/MS (mg/l)</b>					
Acetone	50	monitor only	ND(0.0025)	-	-
SUM	NA	NA	ND	-	-
<b>SVOCs by GC/MS (mg/l)</b>		-			
SUM	NA	0.01	ND	-	-
<b>SVOCs by GC/MS-SIM (mg/l)</b>					
Acenaphthene	6	-	ND(0.0001)	-	-
Benzo(a)anthracene	1	0.005	ND(0.0001)	-	-
Benzo(a)pyrene	0.5	0.005	ND(0.0001)	-	-
Fluoranthene	0.2	0.005	ND(0.0001)	-	-
Fluorene	0.04	0.005	ND(0.0001)	-	-
Pyrene	0.02	0.005	ND(0.0001)	-	-
SUM		0.01	ND	-	-
<b>Total Metals (mg/l)</b>					
Antimony, Total	NA	0.0056	ND(0.0005)	-	-
Arsenic, Total	NA	0.54	0.0101	-	-
Cadmium, Total	NA	0.0002	ND(0.0001)	-	-
Chromium, Total	NA	1.71	0.0006	-	-
Copper, Total	NA	0.52	0.0007	-	-
Iron, Total	NA	1	19	-	-
Lead, Total	NA	0.132	ND(0.00025)	-	-
Mercury, Total	NA	0.0023	ND(0.0001)	-	-
Nickel, Total	NA	2.38	0.0031	-	-
Selenium, Total	NA	0.408	0.002	-	-
Silver, Total	NA	0.0012	ND(0.0002)	-	-
Zinc, Total	NA	1.48	0.0131	-	-
<b>Dissolved Metals (mg/l)</b>					
Iron, Dissolved	NA	1	19	-	-
<b>Pesticides by GC (mg/l)</b>					
1,2-Dibromoethane	0.002	0.01	ND(0.000005)	-	-
<b>PCBs by GC (mg/l)</b>					
Aroclor 1016	0.005	-	ND(0.000125)	-	-
Aroclor 1221	0.005	-	ND(0.000125)	-	-
Aroclor 1232	0.005	-	ND(0.000125)	-	-
Aroclor 1242	0.005	-	ND(0.000125)	-	-
Aroclor 1248	0.005	-	ND(0.000125)	-	-
Aroclor 1254	0.005	-	ND(0.000125)	-	-
Aroclor 1260	0.005	-	ND(0.000125)	-	-
SUM	NA	0.0005	ND	-	-
<b>Anions by Ion Chromatography (mg/l)</b>					
Chloride	NA	monitor only	300	-	-
<b>General Chemistry</b>					
Solids, Total Suspended (mg/l)	NA	30	39	-	-
Cyanide, Total (mg/l)	0.03	0.0052	0.037	-	-
Cyanide, Amenable (mg/l)	0.03	0.0052	-	ND(0.005)	ND(0.005)
Cyanide, Physiologically Available (mg/l)	0.03	0.0052	-	0.015	0.012
Chlorine, Total Residual (mg/l)	NA	0.011	ND(0.05)	-	-
pH (SU)	NA	6.5 to 8.3	-	-	-
Oil & Grease (mg/l)	NA	-	-	-	-
TPH (mg/l)	5	5	ND(2)	-	-
Phenolics, Total (mg/l)	NA	0.3	ND(0.015)	-	-
Chromium, Hexavalent (mg/l)	0.3	0.0114	ND(0.005)	-	-

**Abbreviations:**

NA : Not applicable

ND(2.5): Not detected; number in parentheses is one-half the laboratory detection limit

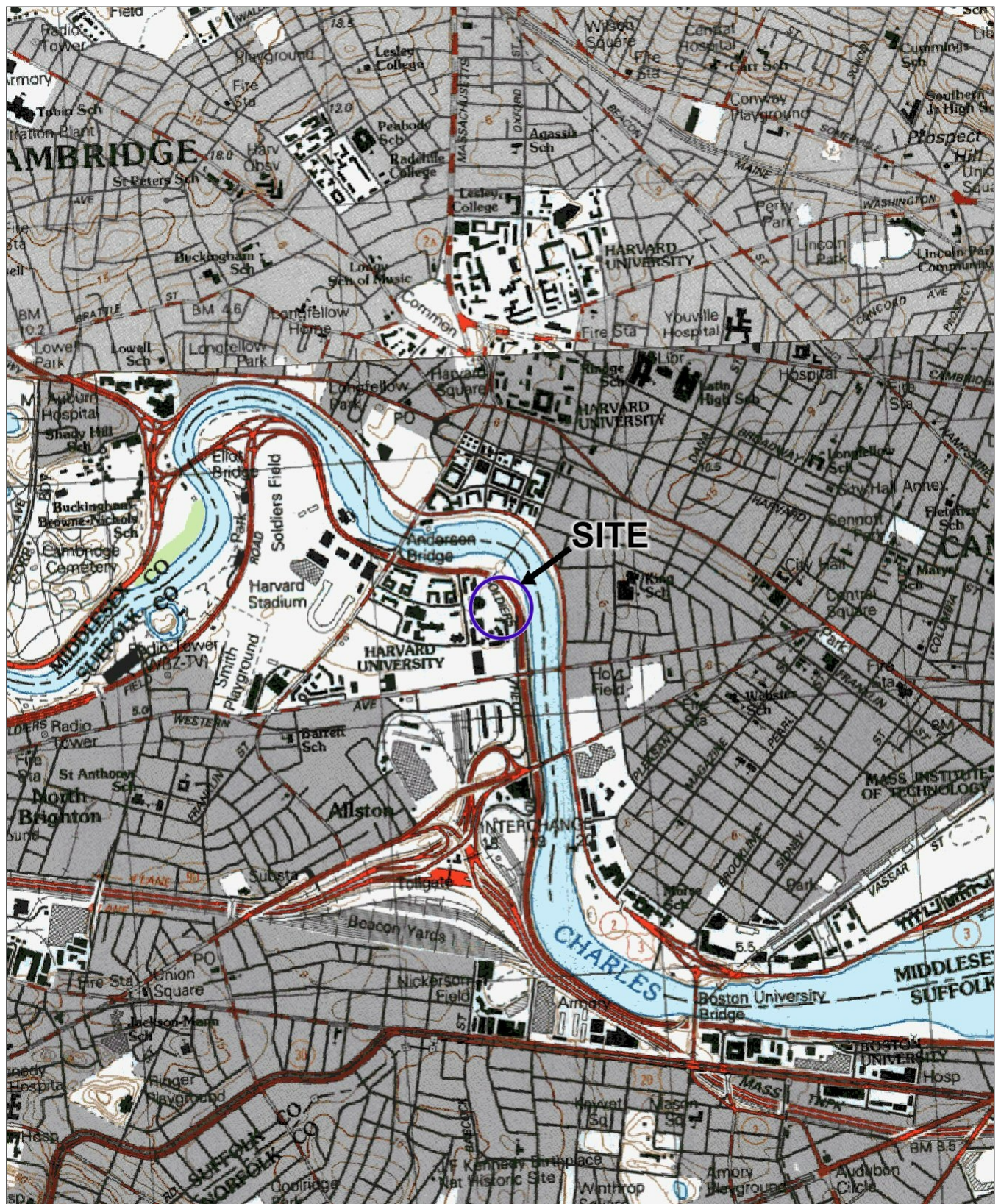
\* : Or minimum limits per acceptable test method used (ND)

**Notes:**

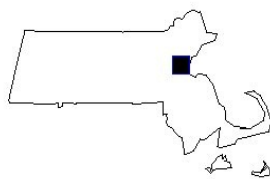
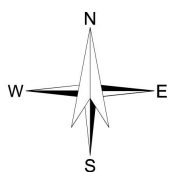
1. Bold shaded values indicate exceedance of NPDES RGP Criteria.

## Figures





SITE COORDINATES: 42°21'59"N 71°7'8"W



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

**HALEY & ALDRICH**

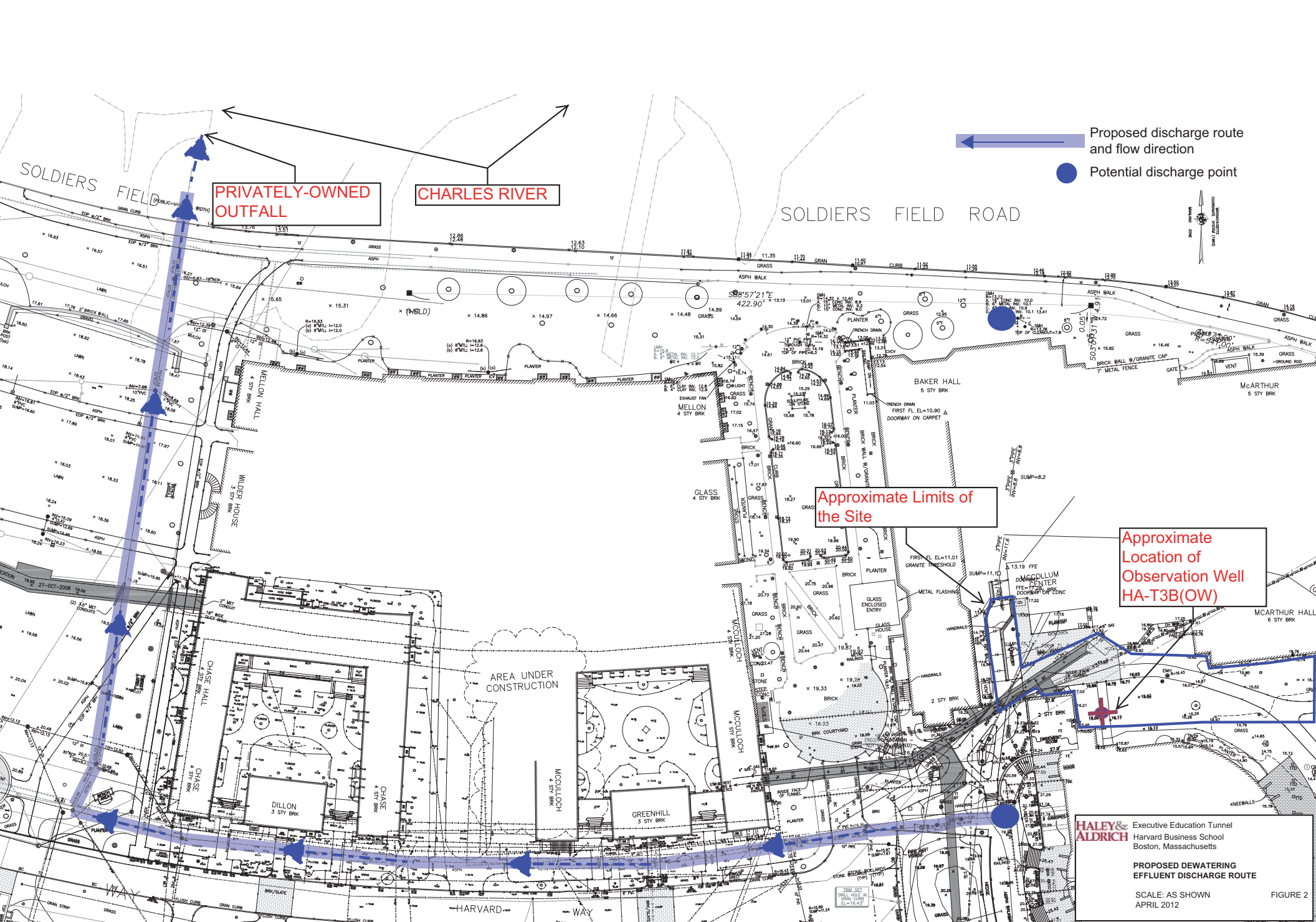
TATA HALL BUILDING  
HARVARD BUSINESS SCHOOL  
BOSTON, MASSACHUSETTS

## PROJECT LOCUS

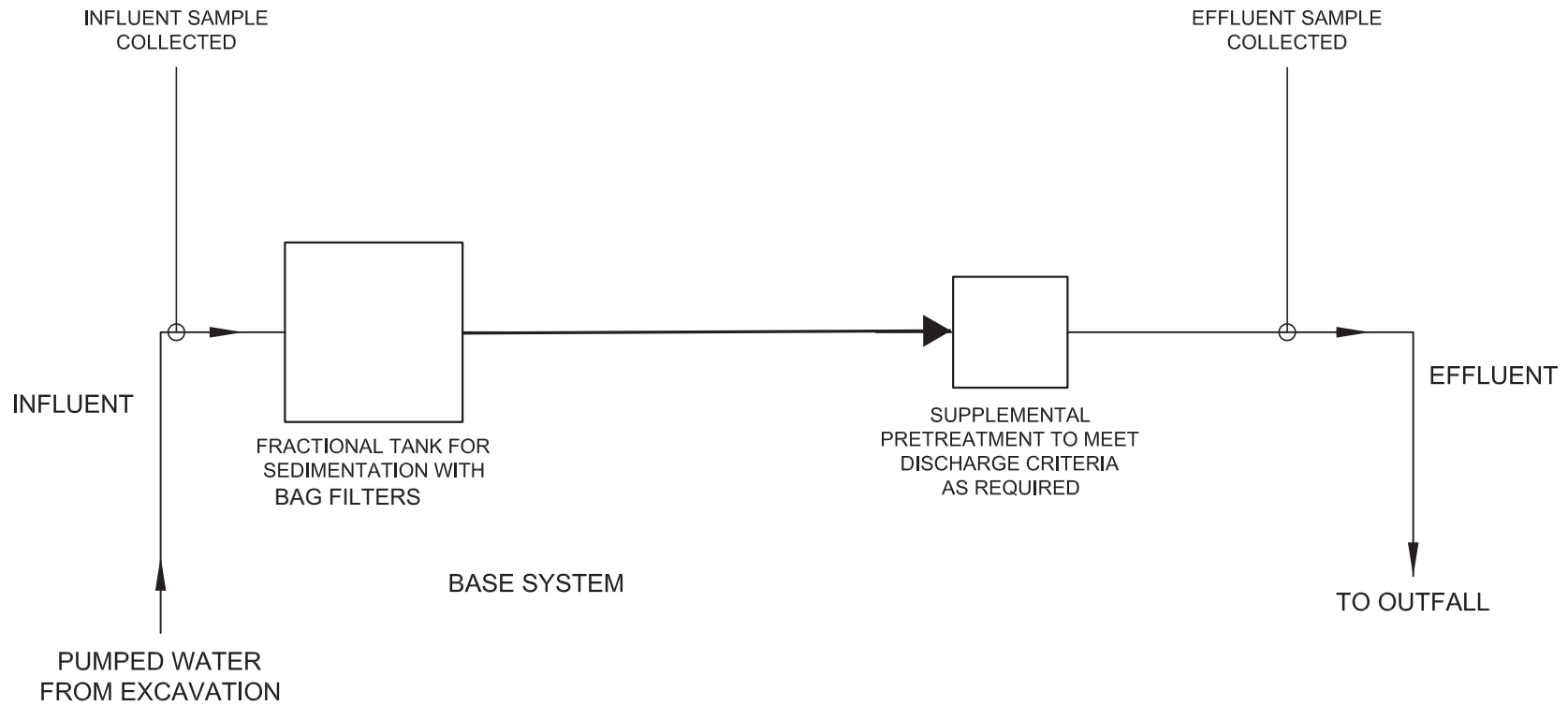
SCALE: 1:24,000  
MARCH 2012

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**

UTILITY/PEDESTRIAN TUNNEL  
HARVARD BUSINESS SCHOOL  
ALLSTON, MASSACHUSETTS

**PROPOSED  
TREATMENT SYSTEM  
SCHEMATIC**

SCALE: NONE  
APRIL 2012

**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 <b>facility/site</b> : Executive Education Tunnel		<b>Facility/site</b> mailing address:	
Location of <b>facility/site</b> : longitude: 71°7'08" W latitude: 42°21'59" N	Facility SIC code(s): 8220	Street: Adjacent to Soldiers Field Road (Harvard Business School Campus)	
b) Name of <b>facility/site owner</b> :		Town: Allston	
Email address of facility/site owner: tmartin@hbs.edu		State: MA	Zip: 02163
Telephone no. of facility/site <b>owner</b> : 617.495.8896		County: Suffolk	
Fax no. of facility/site <b>owner</b> :		<b>Owner</b> is (check one): 1. Federal <input type="radio"/> 2. State/Tribal <input type="radio"/>	
Address of <b>owner</b> (if different from site):		3. Private <input checked="" type="radio"/> 4. Other <input type="radio"/> if so, describe:	
Street: Shad Hall 033, 70 North Harvard Street			
Town: Allston	State: MA	Zip: 02163	County: Suffolk County
c) Legal name of <b>operator</b> :		<b>Operator</b> telephone no:	
TO BE DETERMINED		<b>Operator</b> fax no.:	<b>Operator</b> email:
<b>Operator</b> contact name and title:			
Address of <b>operator</b> (if different from owner):		Street:	
Town:	State:	Zip:	County:



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 <input type="checkbox"/> B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) <input type="checkbox"/> C. Petroleum Sites with Additional Contamination <input type="checkbox"/>
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites <input type="checkbox"/> B. VOC Sites with Additional Contamination <input type="checkbox"/> C. Primarily Heavy Metal Sites <input type="checkbox"/>
III - Contaminated Construction Dewatering	A. General Urban Fill Sites <input checked="" type="checkbox"/> B. Known Contaminated Sites <input type="checkbox"/>

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

**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 <b>maximum</b> and <b>average flow rate</b> of discharge (in cubic feet per second, ft <sup>3</sup> /s)?		
2	Max. flow	0.67	Is maximum flow a <b>design value</b> ? Y <input type="radio"/> N <input checked="" type="radio"/>
	Average flow (include units)	0.33	Is average flow a design value or estimate? <input type="text" value="estimate"/>
3) Latitude and longitude of each discharge within 100 feet:			
pt.1: lat	71706	long	422158
pt.2: lat	71704	long	422156
pt.3: lat		long	
pt.4: lat		long	
pt.5: lat		long	
pt.6: lat		long	
pt.7: lat		long	
pt.8: lat		long	
etc.			
4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent <input checked="" type="radio"/> or seasonal <input type="radio"/> ?		
	Is discharge ongoing? Y <input type="radio"/> N <input checked="" type="radio"/>		
c) Expected dates of discharge (mm/dd/yy): start 5/31/2012 end 5/31/2014			
d) Please attach a line drawing or flow schematic showing water flow through the facility including:			
1. sources of intake water. 2. contributing flow from the operation. 3. treatment units. and 4. discharge points and receiving waters(s).			
See Figures 2 and 3			

**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)		<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	2540D	5000	39000		39000	
2. Total Residual Chlorine (TRC)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	4500CL-D	20	ND		ND	
3. Total Petroleum Hydrocarbons (TPH)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	1664A	4000	ND		ND	
4. Cyanide (CN)	57125	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	4500CN-CE	5	37		37	
5. Benzene (B)	71432	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
6. Toluene (T)	108883	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1.5	ND		ND	
7. Ethylbenzene (E)	100414	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	2	ND		ND	
9. Total BTEX <sup>2</sup>	n/a	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	NA	ND		ND	
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) <sup>3</sup>	106934	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	4	ND		ND	
11. Methyl-tert-Butyl Ether (MtBE)	1634044	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	2	ND		ND	
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	20	ND		ND	

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

<sup>2</sup> BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

<sup>3</sup> 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	4	ND		ND	
14. Naphthalene	91203	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	5	ND		ND	
15. Carbon Tetrachloride	56235	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
16. 1,2 Dichlorobenzene (o-DCB)	95501	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	5	ND		ND	
17. 1,3 Dichlorobenzene (m-DCB)	541731	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	5	ND		ND	
18. 1,4 Dichlorobenzene (p-DCB)	106467	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	5	ND		ND	
18a. Total dichlorobenzene		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	NA	ND		ND	
19. 1,1 Dichloroethane (DCA)	75343	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1.5	ND		ND	
20. 1,2 Dichloroethane (DCA)	107062	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
21. 1,1 Dichloroethene (DCE)	75354	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
22. cis-1,2 Dichloroethene (DCE)	156592	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
23. Methylene Chloride	75092	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	6	ND		ND	
24. Tetrachloroethene (PCE)	127184	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
25. 1,1,1 Trichloro-ethane (TCA)	71556	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	
26. 1,1,2 Trichloro-ethane (TCA)	79005	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1.5	ND		ND	
27. Trichloroethene (TCE)	79016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	1	ND		ND	

<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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	2	ND		ND	
29. Acetone	67641	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	10	ND		ND	
30. 1,4 Dioxane	123911	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8260B	500	ND		ND	
31. Total Phenols	108952	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	420.1	30	ND		ND	
32. Pentachlorophenol (PCP)	87865	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C	10	ND		ND	
33. Total Phthalates (Phthalate esters) <sup>4</sup>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C	NA	ND		ND	
34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	117817	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C	3	ND		ND	
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		<input type="checkbox"/>	<input type="checkbox"/>	1	GRAB						
a. Benzo(a) Anthracene	56553	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
b. Benzo(a) Pyrene	50328	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
c. Benzo(b)Fluoranthene	205992	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
d. Benzo(k)Fluoranthene	207089	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
e. Chrysene	21801	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
f. Dibenzo(a,h)anthracene	53703	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
g. Indeno(1,2,3-cd) Pyrene	193395	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		<input type="checkbox"/>	<input type="checkbox"/>	1	GRAB						

<sup>4</sup> 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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
i. Acenaphthylene	208968	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
j. Anthracene	120127	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
k. Benzo(ghi) Perylene	191242	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
l. Fluoranthene	206440	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
m. Fluorene	86737	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
n. Naphthalene	91203	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
o. Phenanthrene	85018	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
p. Pyrene	129000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	8270C-SIM	0.2	ND		ND	
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	608	0.25	ND		ND	
38. Chloride	16887006	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	300.0	50000	300000		300000	
39. Antimony	7440360	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	6020	1	ND		ND	
40. Arsenic	7440382	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	1	10.1		10.1	
41. Cadmium	7440439	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	6020	0.4	ND		ND	
42. Chromium III (trivalent)	16065831	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	1	0.6		0.6	
43. Chromium VI (hexavalent)	18540299	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	3500CR-D	10	ND		ND	
44. Copper	7440508	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	1	0.7		0.7	
45. Lead	7439921	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	6020	1	ND		ND	
46. Mercury	7439976	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	245.1	0.2	ND		ND	
47. Nickel	7440020	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	1	3.1		3.1	
48. Selenium	7782492	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	2	2		2	
49. Silver	7440224	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	GRAB	6020	0.8	ND		ND	
50. Zinc	7440666	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	6020	10	13.1		13.1	
51. Iron	7439896	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GRAB	200.7	50	19000		19000	
Other (describe):		<input type="checkbox"/>	<input type="checkbox"/>								



<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>
		<input type="checkbox"/>	<input type="checkbox"/>								
		<input type="checkbox"/>	<input type="checkbox"/>								

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

<p><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 <input checked="" type="radio"/> N <input type="radio"/></p>	<p>If yes, which metals?</p> <p>Iron</p>										
<p><i>Step 2:</i> For any metals which exceed the <b>Appendix III</b> limits, calculate the <b>dilution factor (DF)</b> 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?</p> <table border="1"> <tr> <td>Metal: Iron</td> <td>DF: 27.41</td> </tr> <tr> <td>Metal: </td> <td>DF: </td> </tr> <tr> <td>Metal: </td> <td>DF: </td> </tr> <tr> <td>Metal: </td> <td>DF: </td> </tr> <tr> <td>Etc.</td> <td></td> </tr> </table>	Metal: Iron	DF: 27.41	Metal:	DF:	Metal:	DF:	Metal:	DF:	Etc.		<p>Look up the limit calculated at the corresponding dilution factor in <b>Appendix IV</b>. Do any of the metals in the <b>influent</b> have the potential to exceed the corresponding <b>effluent</b> limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)?</p> <p>Y <input checked="" type="radio"/> N <input type="radio"/> If Y, list which metals:</p> <p>Iron</p>
Metal: Iron	DF: 27.41										
Metal:	DF:										
Metal:	DF:										
Metal:	DF:										
Etc.											

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

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

See Attached Figure 3

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

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate(s)** (gallons per minute) of the treatment system:

Average flow rate of discharge  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):

NA

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

a) Identify the discharge pathway:	Direct to receiving water <input type="checkbox"/>	Within facility (sewer) <input type="checkbox"/>	Storm drain <input checked="" type="checkbox"/>	Wetlands <input type="checkbox"/>	Other (describe): <input type="text"/>
------------------------------------	--	--	---	-----------------------------------	---

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Effluent will be discharged to private (owned by Harvard Business School) storm drains & outfall located near the site which discharge into the lower Charles River.

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

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

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

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.

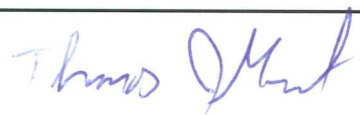
- a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?  
A ☒ B ☐ C ☐ D ☐ E ☐ F ☐
- b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ☐ 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.

**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:	Executive Education Tunnel
Operator signature:	
Printed Name & Title:	Tom Martin
Date:	4-13-12

\*Thomas Martin, Director of Design and Construction, is signing the Notice of Intent on behalf of the President and Fellows of Harvard College acting by and through Harvard Business School, and not individually.



## **APPENDIX B**

### **Best Management Practices Plan (BMPP)**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
REMEDATION GENERAL PERMIT  
TEMPORARY CONSTRUCTION DEWATERING  
EXECUTIVE EDUCATION TUNNEL  
HARVARD BUSINESS SCHOOL  
ALLSTON, MASSACHUSETTS**

**Best Management Practices Plan**

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

**Water Treatment and Management**

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

**Discharge Monitoring and Compliance**

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

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

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

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

**System Maintenance**

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

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
REMEDIAL GENERAL PERMIT  
TEMPORARY CONSTRUCTION DEWATERING  
EXECUTIVE EDUCATION TUNNEL  
HARVARD BUSINESS SCHOOL  
ALLSTON, MASSACHUSETTS**

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

**Miscellaneous Items**

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

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

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

**Management of Treatment System Materials**

Groundwater at the site has cyanide and iron at concentrations below the applicable MCP RCGW-2 criteria but above the NPDES RGP criteria. Dewatering effluent will be pumped directly to the treatment system from the excavation with use of hoses and sumps to minimize handling. The contractor will establish staging areas on the site for any equipment or materials storage which may be possible sources of pollution away from any dewatering activities.

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

## **APPENDIX C**

### **Endangered Species Act Documentation**





# 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 3, 2011

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 the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (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.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type 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. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman  
Supervisor  
New England Field Office

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## MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN

November 2010

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**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**

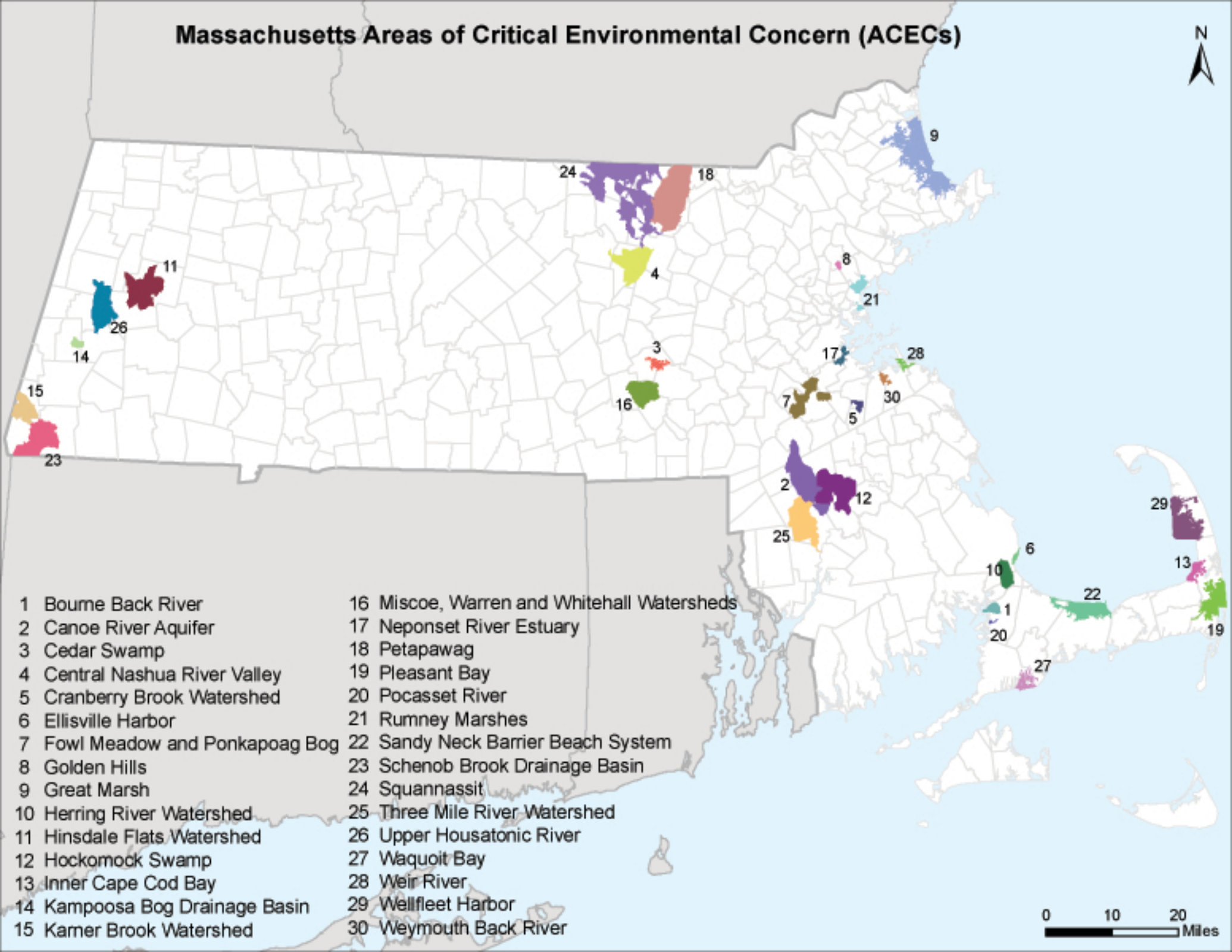
(800 acres, 1982) Hingham and Weymouth

**Towns with ACECs within their Boundaries****November 2010**

<b>TOWN</b>	<b>ACEC</b>	<b>TOWN</b>	<b>ACEC</b>
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 Bourne Back River             | 16 Miscoe, Warren and Whitehall Watersheds |
| 2 Canoe River Aquifer           | 17 Neponset River Estuary                  |
| 3 Cedar Swamp                   | 18 Petapawag                               |
| 4 Central Nashua River Valley   | 19 Pleasant Bay                            |
| 5 Cranberry Brook Watershed     | 20 Pocasset River                          |
| 6 Ellisville Harbor             | 21 Rumney Marshes                          |
| 7 Fowl Meadow and Ponkapoag Bog | 22 Sandy Neck Barrier Beach System         |
| 8 Golden Hills                  | 23 Schenob Brook Drainage Basin            |
| 9 Great Marsh                   | 24 Squannassit                             |
| 10 Herring River Watershed      | 25 Three Mile River Watershed              |
| 11 Hinsdale Flats Watershed     | 26 Upper Housatonic River                  |
| 12 Hockomock Swamp              | 27 Waquoit Bay                             |
| 13 Inner Cape Cod Bay           | 28 Weir River                              |
| 14 Kampoosa Bog Drainage Basin  | 29 Wellfleet Harbor                        |
| 15 Karter Brook Watershed       | 30 Weymouth Back River                     |

0 10 20 Miles

# MassDEP - Bureau of Waste Site Cleanup

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

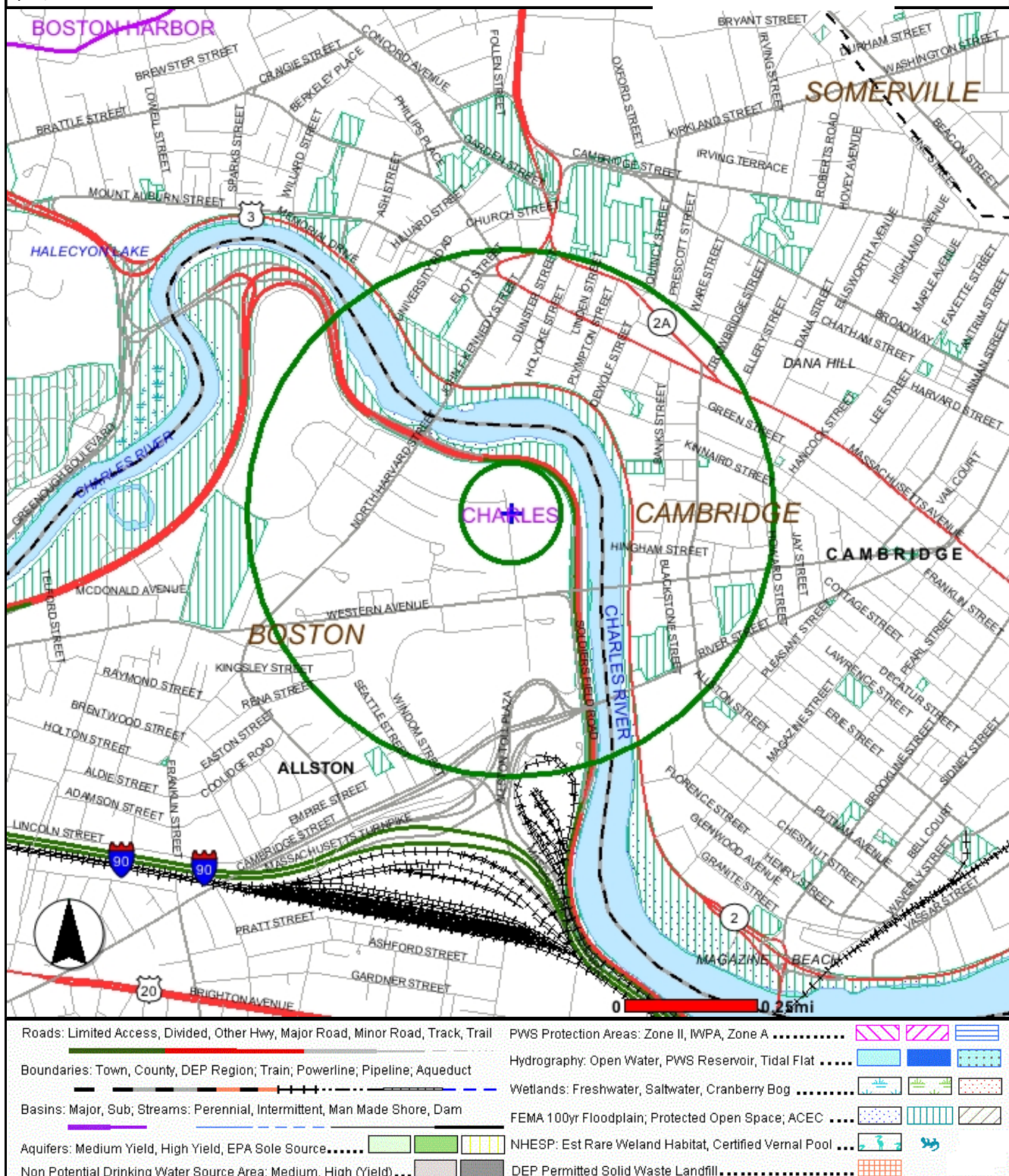
**Site Name:**  
Utility/Pedestrian Tunnel  
Soldiers Field Road  
Boston, MA  
**RTN:**  
NAD83 MA Coordinates:  
231267mE, 901826mN



The information shown on this map is the best available at the date of printing. For more information please refer to [www.mass.gov/mgis/massgis.htm](http://www.mass.gov/mgis/massgis.htm)



April 4, 2012



## 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
	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.	Hadley, 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 06/22/2009**



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

## Department of Fish and Game

Commissioner Mary B. Griffin

[DFG Home](#) [Mass.Gov Home](#) [State Agencies](#) [State Online Services](#)



# MassWildlife

Massachusetts Division of Fisheries & Wildlife

*Wayne F. MacCallum, Director*



**Natural Heritage & Endangered Species**

[Home](#) [Recreation](#) [Wildlife](#) [Fisheries](#) [Natural Heritage](#) [Habitat](#) [Education](#)



## Rare Species by Town

### MESA (Massachusetts Endangered Species Act) and Federal Status

#### Quick Links

- » [Town Index](#)
- » [MESA List](#)
- » [Contact Us](#)

E = Endangered      T = Threatened      SC = Special Concern

### Most Recent Observation

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

Click on a town below to view MESA-listed species for that town. To print the species for a particular town, highlight the species using your mouse, go to Print under the File Menu, click on 'Selection' under 'Print Range' and click OK.

For more information about a particular species, view the list of [Natural Heritage Fact Sheets](#).

These data were extracted from the database of the Natural Heritage and Endangered Species Program in September 2009.

[Barnstable](#) | [Barre](#) | [Becket](#) | [Bedford](#) | [Belchertown](#) | [Bellingham](#) | [Belmont](#) | [Berkley](#) | [Berlin](#) | [Bernardston](#) | [Beverly](#) | [Billerica](#) | [Blackstone](#) | [Blandford](#) | [Bolton](#) | [Boston](#) | [Bourne](#) | [Boxborough](#) | [Boxford](#) | [Boylston](#) | [Braintree](#) | [Brewster](#) | [Bridgewater](#) | [Brimfield](#) | [Brockton](#) | [Brookfield](#) | [Brookline](#) | [Buckland](#) | [Burlington](#)

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BARNSTABLE	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		2009
BARNSTABLE	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1993
BARNSTABLE	Bird	Asio flammeus	Short-eared Owl	E		Historic
BARNSTABLE	Bird	Asio otus	Long-eared Owl	SC		1978
BARNSTABLE	Bird	Charadrius melodus	Piping Plover	T	T	2006
BARNSTABLE	Bird	Parula americana	Northern Parula	T		1989
BARNSTABLE	Bird	Sterna dougallii	Roseate Tern	E	E	2008



BARNSTABLE	Bird	<i>Sterna hirundo</i>	Common Tern	SC	2008
BARNSTABLE	Bird	<i>Sterna paradisaea</i>	Arctic Tern	SC	1901
BARNSTABLE	Bird	<i>Sternula antillarum</i>	Least Tern	SC	2007
BARNSTABLE	Butterfly/Moth	<i>Abagrotis nefascia</i>	Coastal Heathland Cutworm	SC	1982
BARNSTABLE	Butterfly/Moth	<i>Bagisara rectifascia</i>	Straight Lined Mallow Moth	SC	1951
BARNSTABLE	Butterfly/Moth	<i>Cingilia catenaria</i>	Chain Dot Geometer	SC	1954
BARNSTABLE	Butterfly/Moth	<i>Hemileuca maia</i>	Barrens Buckmoth	SC	1994
BARNSTABLE	Butterfly/Moth	<i>Itame</i> sp. 1 nr. <i>inextricata</i>	Pine Barrens Itame	SC	1968
BARNSTABLE	Butterfly/Moth	<i>Papaipema stenocelis</i>	Chain Fern Borer Moth	T	1950
BARNSTABLE	Butterfly/Moth	<i>Papaipema sulphurata</i>	Water-willow Stem Borer	T	2004
BARNSTABLE	Butterfly/Moth	<i>Pieris oleracea</i>	Mustard White	T	1949
BARNSTABLE	Butterfly/Moth	<i>Satyrion favonius</i>	Oak Hairstreak	SC	1982
BARNSTABLE	Butterfly/Moth	<i>Zale</i> sp. 1 nr. <i>lunifera</i>	Pine Barrens Zale	SC	1951
BARNSTABLE	Crustacean	<i>Eulimnadia agassizii</i>	Agassiz's Clam Shrimp	E	2009
BARNSTABLE	Dragonfly/Damselfly	<i>Anax longipes</i>	Comet Darner	SC	2004
BARNSTABLE	Dragonfly/Damselfly	<i>Enallagma carunculatum</i>	Tule Bluet	SC	1941
BARNSTABLE	Dragonfly/Damselfly	<i>Enallagma laterale</i>	New England Bluet	SC	1989
BARNSTABLE	Dragonfly/Damselfly	<i>Enallagma pictum</i>	Scarlet Bluet	T	2005
BARNSTABLE	Dragonfly/Damselfly	<i>Enallagma recurvatum</i>	Pine Barrens Bluet	T	2004
BARNSTABLE	Fish	<i>Notropis bifrenatus</i>	Bridle Shiner	SC	1993
BARNSTABLE	Mussel	<i>Alasmodonta undulata</i>	Triangle Floater	SC	2007
BARNSTABLE	Mussel	<i>Leptodea ochracea</i>	Tidewater Mucket	SC	2007
BARNSTABLE	Mussel	<i>Ligumia nasuta</i>	Eastern Pondmussel	SC	2007
BARNSTABLE	Reptile	<i>Malaclemys terrapin</i>	Diamond- backed Terrapin	T	2007
BARNSTABLE	Reptile	<i>Terrapene carolina</i>	Eastern Box Turtle	SC	2007
BARNSTABLE	Snail	<i>Ferrissia walkeri</i>	Walker's Limpet	SC	2006
BARNSTABLE	Vascular Plant	<i>Amelanchier nantucketensis</i>	Nantucket Shadbush	SC	1993
BARNSTABLE	Vascular Plant	<i>Aristida purpurascens</i>	Purple Needlegrass	T	1916
BARNSTABLE	Vascular Plant	<i>Carex mitchelliana</i>	Mitchell's Sedge	T	1988
BARNSTABLE	Vascular Plant	<i>Corema conradii</i>	Broom Crowberry	SC	1916
BARNSTABLE	Vascular Plant	<i>Crocianthemum dumosum</i>	Bushy Rockrose	SC	1999

BARNSTABLE	Vascular Plant	Dichanthelium ovale ssp. pseudopubescens	Commons's Panic-grass	SC	1986
BARNSTABLE	Vascular Plant	Dichanthelium wrightianum	Wright's Panic-grass	SC	2004
BARNSTABLE	Vascular Plant	Lachnanthes carolina	Redroot	SC	2004
BARNSTABLE	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	2006
BARNSTABLE	Vascular Plant	Linum intercursum	Sandplain Flax	SC	1989
BARNSTABLE	Vascular Plant	Linum medium var. texanum	Rigid Flax	T	1983
BARNSTABLE	Vascular Plant	Lipocarpha micrantha	Dwarf Bulrush	T	1898
BARNSTABLE	Vascular Plant	Listera cordata	Heartleaf Twayblade	E	1916
BARNSTABLE	Vascular Plant	Malaxis bayardii	Bayard's Green Adder's-mouth	E	1989
BARNSTABLE	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1960s
BARNSTABLE	Vascular Plant	Panicum philadelphicum ssp. philadelphicum	Philadelphia Panic-grass	SC	1989
BARNSTABLE	Vascular Plant	Polygonum puritanorum	Pondshore Knotweed	SC	2003
BARNSTABLE	Vascular Plant	Rhexia mariana	Maryland Meadow Beauty	E	1967
BARNSTABLE	Vascular Plant	Rhynchospora nitens	Short-beaked Bald-sedge	T	2002
BARNSTABLE	Vascular Plant	Rhynchospora scirpoides	Long-beaked Bald-sedge	SC	1995
BARNSTABLE	Vascular Plant	Rhynchospora torreyana	Torrey's Beak-sedge	E	2007
BARNSTABLE	Vascular Plant	Sabatia campanulata	Slender Marsh Pink	E	2008
BARNSTABLE	Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC	2008
BARNSTABLE	Vascular Plant	Sagittaria teres	Terete Arrowhead	SC	2004
BARNSTABLE	Vascular Plant	Scleria pauciflora	Papillose Nut Sedge	E	1986
BARNSTABLE	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC	1919
BARNSTABLE	Vascular Plant	Sphenopholis pensylvanica	Swamp Oats	T	1988
BARNSTABLE	Vascular Plant	Spiranthes vernalis	Grass-leaved Ladies'-tresses	T	1986
BARNSTABLE	Vascular Plant	Tipularia discolor	Crane-fly Orchid	E	1983
BARNSTABLE	Vascular Plant	Utricularia subulata	Subulate Bladderwort	SC	1918

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BARRE	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		2007

BARRE	Bird	Botaurus lentiginosus	American Bittern	E	1930
BARRE	Bird	Ixobrychus exilis	Least Bittern	E	2005
BARRE	Butterfly/Moth	Psectraglaea carnosus	Pink Sallow	SC	2007
BARRE	Dragonfly/Damselfly	Neurocordulia yamaskanensis	Stygian Shadowdragon	SC	2004
BARRE	Fish	Notropis bifrenatus	Bridle Shiner	SC	2005
BARRE	Mussel	Alasmidonta undulata	Triangle Floater	SC	1999
BARRE	Mussel	Strophitus undulatus	Creeper	SC	1999
BARRE	Reptile	Glyptemys insculpta	Wood Turtle	SC	2006
BARRE	Reptile	Terrapene carolina	Eastern Box Turtle	SC	2005
BARRE	Vascular Plant	Asclepias purpurascens	Purple Milkweed	E	1865
BARRE	Vascular Plant	Clematis occidentalis	Purple Clematis	SC	2008
BARRE	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1950
BARRE	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1870
BARRE	Vascular Plant	Viola adunca	Sand Violet	SC	2006

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BECKET	Bird	Botaurus lentiginosus	American Bittern	E		1991
BECKET	Butterfly/Moth	Erora laeta	Early Hairstreak	T		2005
BECKET	Dragonfly/Damselfly	Boyeria grafiana	Ocellated Darner	SC		2004
BECKET	Dragonfly/Damselfly	Somatochlora forcipata	Forcinate Emerald	SC		1973
BECKET	Fish	Catostomus catostomus	Longnose Sucker	SC		1979
BECKET	Fish	Notropis bifrenatus	Bridle Shiner	SC		1994
BECKET	Reptile	Glyptemys insculpta	Wood Turtle	SC		2006
BECKET	Vascular Plant	Arceuthobium pusillum	Dwarf Mistletoe	SC		1904
BECKET	Vascular Plant	Carex livida	Glaucous Sedge	E		Historic
BECKET	Vascular Plant	Carex pauciflora	Few-flowered Sedge	E		Historic
BECKET	Vascular Plant	Lygodium palmatum	Climbing Fern	SC		Historic
BECKET	Vascular Plant	Sisyrinchium mucronatum	Slender Blue-eyed Grass	E		2001

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BEDFORD	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2009
BEDFORD	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1902
BEDFORD	Bird	Bartramia longicauda	Upland Sandpiper	E		2000
BEDFORD	Fish	Notropis bifrenatus	Bridle Shiner	SC		1998
BEDFORD	Reptile	Emydoidea blandingii	Blanding's Turtle	T		2008
BEDFORD	Reptile	Glyptemys insculpta	Wood Turtle	SC		1995
BEDFORD	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2004
BEDFORD	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1884

BEDFORD	Vascular Plant	Bolboschoenus fluvialis	River Bulrush	SC	2002
BEDFORD	Vascular Plant	Carex oligosperma	Few-fruited Sedge	E	2007
BEDFORD	Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E	1882
BEDFORD	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1899
BEDFORD	Vascular Plant	Ludwigia sphaerocarpa	Round-fruited False-loosestrife	E	1885
BEDFORD	Vascular Plant	Nabalus serpentarius	Lion's Foot	E	1883
BEDFORD	Vascular Plant	Nuphar microphylla	Tiny Cow-lily	E	1883
BEDFORD	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1900
BEDFORD	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	1888
BEDFORD	Vascular Plant	Scirpus longii	Long's Bulrush	T	2007
BEDFORD	Vascular Plant	Senna hebecarpa	Wild Senna	E	1883
BEDFORD	Vascular Plant	Viola brittoniana	Britton's Violet	T	2007

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BELCHERTOWN	Amphibian	Ambystoma opacum	Marbled Salamander	T		2006
BELCHERTOWN	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1941
BELCHERTOWN	Bird	Botaurus lentiginosus	American Bittern	E		2008
BELCHERTOWN	Bird	Gallinula chloropus	Common Moorhen	SC		1932
BELCHERTOWN	Bird	Haliaeetus leucocephalus	Bald Eagle	E		2008
BELCHERTOWN	Bird	Ixobrychus exilis	Least Bittern	E		2007
BELCHERTOWN	Bird	Podilymbus podiceps	Pied-billed Grebe	E		1932
BELCHERTOWN	Bird	Tyto alba	Barn Owl	SC		1951
BELCHERTOWN	Crustacean	Eubrychius intricatus	Intricate Fairy Shrimp	SC		1970s
BELCHERTOWN	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2008
BELCHERTOWN	Fish	Notropis bifrenatus	Bridle Shiner	SC		1998
BELCHERTOWN	Mammal	Synaptomys cooperi	Southern Bog Lemming	SC		1974
BELCHERTOWN	Reptile	Glyptemys insculpta	Wood Turtle	SC		2007
BELCHERTOWN	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2006
BELCHERTOWN	Vascular Plant	Acer nigrum	Black Maple	SC		1891
BELCHERTOWN	Vascular Plant	Asclepias purpurascens	Purple Milkweed	E		1875
BELCHERTOWN	Vascular Plant	Blephilia ciliata	Downy Wood-mint	E		1891
BELCHERTOWN	Vascular Plant	Lygodium palmatum	Climbing Fern	SC		2000



BELCHERTOWN	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1883
BELCHERTOWN	Vascular Plant	Podostemum ceratophyllum	Threadfoot	SC	1925
BELCHERTOWN	Vascular Plant	Ranunculus pensylvanicus	Bristly Buttercup	SC	1871
BELCHERTOWN	Vascular Plant	Scheuchzeria palustris	Pod-grass	E	1872
BELCHERTOWN	Vascular Plant	Utricularia resupinata	Resupinate Bladderwort	T	1873

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BELLINGHAM	Amphibian	Ambystoma opacum	Marbled Salamander	T		2007
BELLINGHAM	Fish	Lampetra appendix	American Brook Lamprey	T		2001
BELLINGHAM	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1894
BELLINGHAM	Vascular Plant	Goodyera repens	Dwarf Rattlesnake-plantain	E		1886
BELLINGHAM	Vascular Plant	Panicum philadelphicum ssp. philadelphicum	Philadelphia Panic-grass	SC		1986

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BELMONT	Amphibian	Ambystoma jeffersonianum	Jefferson Salamander	SC		1800s
BELMONT	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		Historic
BELMONT	Bird	Tyto alba	Barn Owl	SC		1952
BELMONT	Bird	Gallinula chloropus	Common Moorhen	SC		Historic
BELMONT	Bird	Cistothorus platensis	Sedge Wren	E		1868
BELMONT	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		2005
BELMONT	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1852
BELMONT	Vascular Plant	Carex gracilescens	Slender Woodland Sedge	E		1932

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BERKLEY	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1913
BERKLEY	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1912
BERKLEY	Reptile	Glyptemys insculpta	Wood Turtle	SC		1991
BERKLEY	Reptile	Malaclemys terrapin	Diamond-backed Terrapin	T		1982
BERKLEY	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2007
BERKLEY	Vascular Plant	Bidens eatonii	Eaton's Beggar-ticks	E		1923

BERKLEY	Vascular Plant	Cardamine longii	Long's Bitter-cress	E	1997
BERKLEY	Vascular Plant	Carex polymorpha	Variable Sedge	E	1908

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BERLIN	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		1800s
BERLIN	Amphibian	Ambystoma opacum	Marbled Salamander	T		2000
BERLIN	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1936
BERLIN	Bird	Ammodramus henslowii	Henslow's Sparrow	E		Historic
BERLIN	Mussel	Alasmidonta varicosa	Brook Floater (Swollen Wedgemussel)	E		1859
BERLIN	Reptile	Glyptemys insculpta	Wood Turtle	SC		1993
BERLIN	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1991
BERLIN	Vascular Plant	Asclepias purpurascens	Purple Milkweed	E		1915
BERLIN	Vascular Plant	Panicum philadelphicum ssp. philadelphicum	Philadelphia Panic-grass	SC		1944

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BERNARDSTON	Butterfly/Moth	Erora laeta	Early Hairstreak	T		1988
BERNARDSTON	Vascular Plant	Actaea racemosa	Black Cohosh	E		1998

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BEVERLY	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1925
BEVERLY	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		1987
BEVERLY	Vascular Plant	Magnolia virginiana	Sweetbay Magnolia	E		1995
BEVERLY	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1874
BEVERLY	Vascular Plant	Potamogeton vaseyi	Vasey's Pondweed	E		1878
BEVERLY	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1902

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BILLERICA	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2008
BILLERICA	Fish	Notropis bifrenatus	Bridle Shiner	SC		1961
BILLERICA	Reptile	Emydoidea blandingii	Blanding's Turtle	T		1992
BILLERICA	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		1917
BILLERICA	Vascular Plant	Ludwigia sphaerocarpa	Round-fruited False-loosestrife	E		1889
BILLERICA	Vascular Plant	Nabalus serpentarius	Lion's Foot	E		1871

BILLERICA	Vascular Plant	Nuphar microphylla	Tiny Cow-lily	E	1869
BILLERICA	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1900
BILLERICA	Vascular Plant	Viola brittoniana	Britton's Violet	T	1915

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BLACKSTONE	Fish	Lampetra appendix	American Brook Lamprey	T		2001
BLACKSTONE	Mussel	Alasmidonta undulata	Triangle Floater	SC		1999
BLACKSTONE	Mussel	Strophitus undulatus	Creeper	SC		1999

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BLANDFORD	Bird	Bartramia longicauda	Upland Sandpiper	E		Historic
BLANDFORD	Bird	Botaurus lentiginosus	American Bittern	E		2005
BLANDFORD	Bird	Circus cyaneus	Northern Harrier	T		1923
BLANDFORD	Bird	Cistothorus platensis	Sedge Wren	E		1982
BLANDFORD	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2008
BLANDFORD	Reptile	Glyptemys insculpta	Wood Turtle	SC		1995
BLANDFORD	Vascular Plant	Rhododendron maximum	Great Laurel	T		1946
BLANDFORD	Vascular Plant	Sisyrinchium mucronatum	Slender Blue-eyed Grass	E		1919

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOLTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2006
BOLTON	Amphibian	Ambystoma opacum	Marbled Salamander	T		2008
BOLTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		2007
BOLTON	Bird	Botaurus lentiginosus	American Bittern	E		1990
BOLTON	Bird	Ixobrychus exilis	Least Bittern	E		1985
BOLTON	Bird	Podilymbus podiceps	Pied-billed Grebe	E		1984
BOLTON	Bird	Rallus elegans	King Rail	T		1999
BOLTON	Reptile	Emydoidea blandingii	Blanding's Turtle	T		2009
BOLTON	Reptile	Glyptemys insculpta	Wood Turtle	SC		1999
BOLTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1989
BOLTON	Vascular Plant	Carex typhina	Cat-tail Sedge	T		1999
BOLTON	Vascular Plant	Corallorhiza odontorhiza	Autumn Coralroot	SC		2006

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2003
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		1932
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1910
BOSTON	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Hentz's Redbelly Tiger Beetle	T		1927
BOSTON	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1898
BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1993
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E		1993
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	E		2007
BOSTON	Bird	Gavia immer	Common Loon	SC		1824
BOSTON	Bird	Poocetes gramineus	Vesper Sparrow	T		1985
BOSTON	Bird	Sterna hirundo	Common Tern	SC		2008
BOSTON	Bird	Sternula antillarum	Least Tern	SC		2007
BOSTON	Bird	Tyto alba	Barn Owl	SC		1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		Historic
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E		Historic
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		2001
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis Moth	E		1934
BOSTON	Butterfly/Moth	Rhodoecia aurantiago	Orange Sallow Moth	T		1988
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		2009
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T		2000
BOSTON	Mussel	Alasmidonta undulata	Triangle Floater	SC		2005
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1841
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1939
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E		1896
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1800s
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T		1877
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T		1878
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T		1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E		Historic
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T		1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T		1885



BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E	1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1933
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T	1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E	1896
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E	Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	1908
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E	1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T	1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T	Historic
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T	1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC	2001
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC	1909
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T	1909

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOURNE	Amphibian	Ambystoma opacum	Marbled Salamander	T		1936
BOURNE	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		2003
BOURNE	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		1935
BOURNE	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		2001
BOURNE	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		2007
BOURNE	Bird	Charadrius melodus	Piping Plover	T	T	2006
BOURNE	Bird	Circus cyaneus	Northern Harrier	T		2007
BOURNE	Bird	Pooecetes gramineus	Vesper Sparrow	T		2006
BOURNE	Bird	Sterna dougallii	Roseate Tern	E	E	2008
BOURNE	Bird	Sterna hirundo	Common Tern	SC		2008
BOURNE	Bird	Sternula antillarum	Least Tern	SC		2007
BOURNE	Bird	Tyto alba	Barn Owl	SC		1974
BOURNE	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		1996
BOURNE	Butterfly/Moth	Acronicta albarufa	Barrens Daggermoth	T		1998
BOURNE	Butterfly/Moth	Bagisara rectifascia	Straight Lined Mallow Moth	SC		1998
BOURNE	Butterfly/Moth	Catocala herodias gerhardi	Gerhard's Underwing Moth	SC		1999
BOURNE	Butterfly/Moth	Cicinnus melsheimeri	Melsheimer's Sack Bearer	T		1998
BOURNE	Butterfly/Moth	Cingilia catenaria	Chain Dot Geometer	SC		2006
BOURNE	Butterfly/Moth	Hemileuca maia	Barrens Buckmoth	SC		2006
BOURNE	Butterfly/Moth	Itame sp. 1 nr. inextricata	Pine Barrens Itame	SC		1998

BOURNE	Butterfly/Moth	Metarranthis pilosaria	Coastal Swamp Metarranthis Moth	SC		1998
BOURNE	Butterfly/Moth	Papaipema sulphurata	Water-willow Stem Borer	T		1994
BOURNE	Butterfly/Moth	Zale sp. 1 nr. lunifera	Pine Barrens Zale	SC		1997
BOURNE	Dragonfly/Damselfly	Anax longipes	Comet Darner	SC		2007
BOURNE	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2004
BOURNE	Dragonfly/Damselfly	Enallagma recurvatum	Pine Barrens Bluet	T		1998
BOURNE	Dragonfly/Damselfly	Rhionaeschna mutata	Spatterdock Darner	SC		2007
BOURNE	Fish	Notropis bifrenatus	Bridle Shiner	SC		1993
BOURNE	Mussel	Leptodea ochracea	Tidewater Mucket	SC		1996
BOURNE	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1997
BOURNE	Reptile	Malaclemys terrapin	Diamond-backed Terrapin	T		2004
BOURNE	Reptile	Pseudemys rubriventris pop. 1	Northern Red-bellied Cooter	E	E	2003
BOURNE	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2009
BOURNE	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1901
BOURNE	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T		1915
BOURNE	Vascular Plant	Crocianthemum dumosum	Bushy Rockrose	SC		2000
BOURNE	Vascular Plant	Eleocharis ovata	Ovate Spike-sedge	E		1992
BOURNE	Vascular Plant	Hypericum adpressum	Creeping St. John's- wort	T		2007
BOURNE	Vascular Plant	Juncus debilis	Weak Rush	E		1993
BOURNE	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		2005
BOURNE	Vascular Plant	Lygodium palmatum	Climbing Fern	SC		1992
BOURNE	Vascular Plant	Malaxis bayardii	Bayard's Green Adder's-mouth	E		1919
BOURNE	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		2006
BOURNE	Vascular Plant	Polygonum glaucum	Sea-beach Knotweed	SC		1913
BOURNE	Vascular Plant	Polygonum puritanorum	Pondshore Knotweed	SC		1994
BOURNE	Vascular Plant	Rhynchospora scirpoides	Long-beaked Bald- sedge	SC		1986
BOURNE	Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC		1996
BOURNE	Vascular Plant	Sagittaria teres	Terete Arrowhead	SC		1994
BOURNE	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC		1913
BOURNE	Vascular Plant	Spiranthes vernalis	Grass-leaved Ladies'- tresses	T		1896
BOURNE	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1995
BOURNE	Vascular Plant	Triosteum perfoliatum	Broad Tinker's-weed	E		2004

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
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BOXBOROUGH	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	2007
BOXBOROUGH	Reptile	Emydoidea blandingii	Blanding's Turtle	T	2003
BOXBOROUGH	Reptile	Glyptemys insculpta	Wood Turtle	SC	2002
BOXBOROUGH	Reptile	Terrapene carolina	Eastern Box Turtle	SC	2001

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOXFORD	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2008
BOXFORD	Amphibian	Ambystoma opacum	Marbled Salamander	T		1983
BOXFORD	Bird	Tyto alba	Barn Owl	SC		1957
BOXFORD	Fish	Notropis bifrenatus	Bridle Shiner	SC		1999
BOXFORD	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		Historic
BOXFORD	Reptile	Emydoidea blandingii	Blanding's Turtle	T		2008
BOXFORD	Reptile	Glyptemys insculpta	Wood Turtle	SC		2000
BOXFORD	Vascular Plant	Asclepias purpurascens	Purple Milkweed	E		1883
BOXFORD	Vascular Plant	Carex livida	Glaucous Sedge	E		1890
BOXFORD	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T		1909
BOXFORD	Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E		1881
BOXFORD	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1882
BOXFORD	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		2004
BOXFORD	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E		2004
BOXFORD	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1905
BOXFORD	Vascular Plant	Panicum philadelphicum ssp. philadelphicum	Philadelphia Panic-grass	SC		1953
BOXFORD	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1881
BOXFORD	Vascular Plant	Potamogeton vaseyi	Vasey's Pondweed	E		2004
BOXFORD	Vascular Plant	Senna hebecarpa	Wild Senna	E		1882
BOXFORD	Vascular Plant	Sparganium natans	Small Bur-reed	E		1997
BOXFORD	Vascular Plant	Viola adunca	Sand Violet	SC		2004

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOYLSTON	Amphibian	Ambystoma opacum	Marbled Salamander	T		1995
BOYLSTON	Bird	Gavia immer	Common Loon	SC		2008
BOYLSTON	Bird	Haliaeetus leucocephalus	Bald Eagle	E		2009
BOYLSTON	Bird	Podilymbus podiceps	Pied-billed Grebe	E		1978
BOYLSTON	Butterfly/Moth	Rhodoecia aurantiago	Orange Sallow Moth	T		2008
BOYLSTON	Fish	Notropis bifrenatus	Bridle Shiner	SC		1951
BOYLSTON	Reptile	Glyptemys insculpta	Wood Turtle	SC		1983

BOYLSTON	Vascular Plant	Hydrophyllum canadense	Broad Waterleaf	E	1943
BOYLSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1932
BOYLSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	2000

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BRAINTREE	Dragonfly/Damselfly	Anax longipes	Comet Darner	SC		1970
BRAINTREE	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		1969
BRAINTREE	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		1989
BRAINTREE	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		2000
BRAINTREE	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1997
BRAINTREE	Vascular Plant	Asclepias purpurascens	Purple Milkweed	E		1922
BRAINTREE	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1886

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BREWSTER	Bird	Charadrius melodus	Piping Plover	T	T	2006
BREWSTER	Bird	Parula americana	Northern Parula	T		2006
BREWSTER	Bird	Sterna dougallii	Roseate Tern	E	E	2008
BREWSTER	Bird	Sterna hirundo	Common Tern	SC		2008
BREWSTER	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		1981
BREWSTER	Butterfly/Moth	Apamea inebriata	Drunk Apamea Moth	SC		1981
BREWSTER	Butterfly/Moth	Bagisara rectifascia	Straight Lined Mallow Moth	SC		1982
BREWSTER	Butterfly/Moth	Papaipema sulphurata	Water-willow Stem Borer	T		1994
BREWSTER	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2000
BREWSTER	Dragonfly/Damselfly	Enallagma pictum	Scarlet Bluet	T		2003
BREWSTER	Dragonfly/Damselfly	Enallagma recurvatum	Pine Barrens Bluet	T		2005
BREWSTER	Dragonfly/Damselfly	Rhionaeschna mutata	Spatterdock Darner	SC		1987
BREWSTER	Fish	Notropis bifrenatus	Bridle Shiner	SC		1961
BREWSTER	Reptile	Malaclemys terrapin	Diamond-backed Terrapin	T		2002
BREWSTER	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2008
BREWSTER	Vascular Plant	Carex mitchelliana	Mitchell's Sedge	T		2006
BREWSTER	Vascular Plant	Corema conradii	Broom Crowberry	SC		1994
BREWSTER	Vascular Plant	Crocianthemum dumosum	Bushy Rockrose	SC		2006
BREWSTER	Vascular Plant	Dichanthelium dichotomum ssp. mattamuskeetense	Mattamuskeet Panic-grass	E		1918



BREWSTER	Vascular Plant	Dichanthelium ovale ssp. pseudopubescens	Commons's Panic-grass	SC	2006
BREWSTER	Vascular Plant	Gamochaeta purpurea	Purple Cudweed	E	1924
BREWSTER	Vascular Plant	Isoetes acadensis	Acadian Quillwort	E	1989
BREWSTER	Vascular Plant	Lachnanthes caroliana	Redroot	SC	2002
BREWSTER	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1931
BREWSTER	Vascular Plant	Lipocarpa micrantha	Dwarf Bulrush	T	2006
BREWSTER	Vascular Plant	Mertensia maritima	Oysterleaf	E	2001
BREWSTER	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1992
BREWSTER	Vascular Plant	Opuntia humifusa	Prickly Pear	E	1989
BREWSTER	Vascular Plant	Polygonum puritanorum	Pondshore Knotweed	SC	2003
BREWSTER	Vascular Plant	Rhexia mariana	Maryland Meadow Beauty	E	2008
BREWSTER	Vascular Plant	Rhynchospora scirpoides	Long-beaked Bald-sedge	SC	1986
BREWSTER	Vascular Plant	Rumex pallidus	Seabeach Dock	T	1994
BREWSTER	Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC	2004
BREWSTER	Vascular Plant	Sagittaria teres	Terete Arrowhead	SC	2008
BREWSTER	Vascular Plant	Spartina cynosuroides	Salt Reedgrass	T	2004
BREWSTER	Vascular Plant	Utricularia resupinata	Resupinate Bladderwort	T	2002

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BRIDGEWATER	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1997
BRIDGEWATER	Bird	Asio otus	Long-eared Owl	SC		1978
BRIDGEWATER	Bird	Bartramia longicauda	Upland Sandpiper	E		1980
BRIDGEWATER	Bird	Tyto alba	Barn Owl	SC		1981
BRIDGEWATER	Butterfly/Moth	Papaipema sulphurata	Water-willow Stem Borer	T		1994
BRIDGEWATER	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		1994
BRIDGEWATER	Dragonfly/Damselfly	Enallagma pictum	Scarlet Bluet	T		2004
BRIDGEWATER	Mussel	Alasmodonta undulata	Triangle Floater	SC		1999
BRIDGEWATER	Mussel	Leptodea ochracea	Tidewater Mucket	SC		1997
BRIDGEWATER	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1997

BRIDGEWATER	Reptile	Glyptemys insculpta	Wood Turtle	SC		2004
BRIDGEWATER	Reptile	Pseudemys rubriventris pop. 1	Northern Red-bellied Cooter	E	E	2005
BRIDGEWATER	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2009
BRIDGEWATER	Vascular Plant	Ludwigia sphaerocarpa	Round-fruited False-loosestrife	E		2005
BRIDGEWATER	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1912
BRIDGEWATER	Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC		2005
BRIDGEWATER	Vascular Plant	Scirpus longii	Long's Bulrush	T		1988

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BRIMFIELD	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2000
BRIMFIELD	Bird	Botaurus lentiginosus	American Bittern	E		1997
BRIMFIELD	Bird	Ixobrychus exilis	Least Bittern	E		2007
BRIMFIELD	Dragonfly/Damselfly	Ophiogomphus aspersus	Brook Snaketail	SC		2004
BRIMFIELD	Fish	Notropis bifrenatus	Bridle Shiner	SC		1999
BRIMFIELD	Mussel	Alasmidonta undulata	Triangle Floater	SC		1982
BRIMFIELD	Mussel	Strophitus undulatus	Creeper	SC		1982
BRIMFIELD	Reptile	Glyptemys insculpta	Wood Turtle	SC		2006
BRIMFIELD	Vascular Plant	Isoetes lacustris	Lake Quillwort	E		1930

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BROCKTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis Moth	E		1909
BROCKTON	Dragonfly/Damselfly	Enallagma laterale	New England Bluet	SC		2003
BROCKTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		1900
BROCKTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1902

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BROOKFIELD	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		1990

BROOKFIELD	Amphibian	Ambystoma opacum	Marbled Salamander	T	1996
BROOKFIELD	Bird	Bartramia longicauda	Upland Sandpiper	E	Historic
BROOKFIELD	Bird	Botaurus lentiginosus	American Bittern	E	2008
BROOKFIELD	Bird	Cistothorus platensis	Sedge Wren	E	1992
BROOKFIELD	Bird	Haliaeetus leucocephalus	Bald Eagle	E	2008
BROOKFIELD	Bird	Ixobrychus exilis	Least Bittern	E	2007
BROOKFIELD	Bird	Podilymbus podiceps	Pied-billed Grebe	E	1993
BROOKFIELD	Bird	Rallus elegans	King Rail	T	2007
BROOKFIELD	Dragonfly/Damselfly	Rhionaeschna mutata	Spatterdock Darner	SC	2003
BROOKFIELD	Fish	Notropis bifrenatus	Bridle Shiner	SC	2003
BROOKFIELD	Mussel	Alasmidonta undulata	Triangle Floater	SC	1999
BROOKFIELD	Vascular Plant	Carex polymorpha	Variable Sedge	E	2004
BROOKFIELD	Vascular Plant	Clematis occidentalis	Purple Clematis	SC	2007
BROOKFIELD	Vascular Plant	Lipocarpha micrantha	Dwarf Bulrush	T	2007
BROOKFIELD	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E	1898
BROOKFIELD	Vascular Plant	Poa saltuensis ssp. languida	Drooping Speargrass	E	2000
BROOKFIELD	Vascular Plant	Potamogeton vaseyi	Vasey's Pondweed	E	1998
BROOKFIELD	Vascular Plant	Ranunculus pensylvanicus	Bristly Buttercup	SC	2007
BROOKFIELD	Vascular Plant	Scirpus longii	Long's Bulrush	T	2000

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BROOKLINE	Beetle	Cicindela purpurea	Purple Tiger Beetle	SC		Historic
BROOKLINE	Beetle	Cicindela rufiventris hentzii	Hentz's Redbelly Tiger Beetle	T		Historic
BROOKLINE	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1905
BROOKLINE	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		1932
BROOKLINE	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1897
BROOKLINE	Vascular Plant	Linum medium var. texanum	Rigid Flax	T		1903
BROOKLINE	Vascular Plant	Lipocarpha micrantha	Dwarf Bulrush	T		1902
BROOKLINE	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1912

BROOKLINE	Vascular Plant	Viola brittoniana	Britton's Violet	T	1913
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Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BUCKLAND	Amphibian	Ambystoma jeffersonianum	Jefferson Salamander	SC		1989
BUCKLAND	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		2001
BUCKLAND	Butterfly/Moth	Erora laeta	Early Hairstreak	T		1988
BUCKLAND	Dragonfly/Damselfly	Boyeria grafiana	Ocellated Darner	SC		2004
BUCKLAND	Dragonfly/Damselfly	Gomphus abbreviatus	Spine-crowned Clubtail	E		2004
BUCKLAND	Dragonfly/Damselfly	Neurocordulia yamaskanensis	Stygian Shadowdragon	SC		2004
BUCKLAND	Dragonfly/Damselfly	Rhionaeschna mutata	Spatterdock Darner	SC		2004
BUCKLAND	Fish	Catostomus catostomus	Longnose Sucker	SC		1989
BUCKLAND	Reptile	Glyptemys insculpta	Wood Turtle	SC		2007
BUCKLAND	Vascular Plant	Alnus viridis ssp. crispa	Mountain Alder	T		2004
BUCKLAND	Vascular Plant	Amelanchier sanguinea	Roundleaf Shadbush	SC		1911
BUCKLAND	Vascular Plant	Aplectrum hyemale	Putty-root	E		1904
BUCKLAND	Vascular Plant	Corallorhiza odontorhiza	Autumn Coralroot	SC		2006
BUCKLAND	Vascular Plant	Huperzia selago	Mountain Firmoss	E		1899
BUCKLAND	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1913
BUCKLAND	Vascular Plant	Platanthera dilatata	Leafy White Orchis	T		1932
BUCKLAND	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T		1907
BUCKLAND	Vascular Plant	Symphyotrichum tradescantii	Tradescant's Aster	T		2002

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BURLINGTON	Fish	Notropis bifrenatus	Bridle Shiner	SC		1994
BURLINGTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1998
BURLINGTON	Vascular Plant	Carex polymorpha	Variable Sedge	E		2008
BURLINGTON	Vascular Plant	Nabalus serpentarius	Lion's Foot	E		1906

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## **APPENDIX D**

### **National Register of Historic Places and Massachusetts Historical Commission Documentation**

# Massachusetts Cultural Resource Information System

## MACRIS

### MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
BOS.8350	Harvard Business School - Kresge Hall	Soldiers Field Rd	Boston	1953
BOS.8351	Harvard Business School - Teele Hall	Soldiers Field Rd	Boston	1968
BOS.8352	Harvard Business School - Burden Hall	Soldiers Field Rd	Boston	1969
BOS.8353	Harvard Business School - Cumnock Hall	Soldiers Field Rd	Boston	1969
BOS.8354	Soldiers Field Park Apartments	Soldiers Field Rd	Boston	1974
BOS.8355	Harvard Business School - Shadd Gymnasium	Soldiers Field Rd	Boston	1990
BOS.8356	Harvard Business School Chapel	Soldiers Field Rd	Boston	1990
BOS.8357	Harvard Business School Dean's Residence	Soldiers Field Rd	Boston	1929
BOS.8358	Harvard Business School - Humphrey Hall	Soldiers Field Rd	Boston	1926
BOS.8359	Harvard Business School - McCullough Hall	Soldiers Field Rd	Boston	1926
BOS.8360	Harvard Business School - Glass Hall	Soldiers Field Rd	Boston	1926
BOS.8361	Harvard Business School - Mellon Hall	Soldiers Field Rd	Boston	1926
BOS.8362	Harvard Business School - Dillon Hall	Soldiers Field Rd	Boston	1926
BOS.8363	Harvard Business School - Chase Hall	Soldiers Field Rd	Boston	1926
BOS.8364	Harvard Business School Students Club	Soldiers Field Rd	Boston	1926
BOS.8365	Harvard Business School - Aldrich Hall	Soldiers Field Rd	Boston	1953
BOS.8366	Harvard Business School - Baker Library	Soldiers Field Rd	Boston	1927
BOS.8367	Harvard Business School - Hamilton Hall	Soldiers Field Rd	Boston	1926
BOS.8368	Harvard Business School Faculty Club	Soldiers Field Rd	Boston	1926
BOS.8369	Harvard Business School - Gallatin Hall	Soldiers Field Rd	Boston	1926
BOS.8370	Harvard Business School - Fowler Hall	Soldiers Field Rd	Boston	1926
BOS.8371	Harvard Business School - Morgan Hall	Soldiers Field Rd	Boston	1927
BOS.8372	Harvard Business School - Loeb Hall	Soldiers Field Rd	Boston	1926
BOS.8373	Harvard Business School - Morris Hall	Soldiers Field Rd	Boston	1926
BOS.8374	Harvard Business School - Sherman Hall	Soldiers Field Rd	Boston	1926
BOS.8376	Harvard University - Briggs Cage	Soldiers Field Rd	Boston	1926
BOS.8377	Harvard University - Dillon Field House	Soldiers Field Rd	Boston	1929

Inv. No.	Property Name	Street	Town	Year
BOS.8378	Harvard University - Dixon, Palmer Tennis Courts	Soldiers Field Rd	Boston	1965
BOS.8379	Harvard University - Bright Hockey Center	Soldiers Field Rd	Boston	1950
BOS.8380	Harvard University Gordon Track and Tennis Center	Soldiers Field Rd	Boston	1950
BOS.9602	Charles River Reservation - Soldiers Field Road	Soldiers Field Rd	Boston	1899
BOS.9603	Soldiers Field Road Planted Median	Soldiers Field Rd	Boston	1920
BOS.9605	Soldiers Field Underpass at Western Avenue	Soldiers Field Rd	Boston	1954
BOS.9606	Soldiers Field Road - North Beacon Street Oval	Soldiers Field Rd	Boston	1958
BOS.8312	Harvard University - Newell Boat House	801-805 Soldiers Field Rd	Boston	1900
BOS.8063	Institute of Contemporary Art	1175 Soldiers Field Rd	Boston	1959
BOS.8064	Charles River Speedway Superintendent's Residence	1420-1440 Soldiers Field Rd	Boston	1899
BOS.9731	Charles River Speedway Courtyard	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15893	Charles River Speedway Headquarters and Stable	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15894	Metropolitan District Commission Police Station	1420-1440 Soldiers Field Rd	Boston	1904
BOS.15895	Charles River Speedway - South Shed	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15896	Charles River Speedway - East Shed	1420-1440 Soldiers Field Rd	Boston	1899
BOS.15897	Charles River Speedway Garage	1420-1440 Soldiers Field Rd	Boston	1940
BOS.15898	Charles River Speedway Maintenance Garage	1420-1440 Soldiers Field Rd	Boston	1940

# Massachusetts Cultural Resource Information System

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**Inventory No:** BOS.8350  
**Historic Name:** Harvard Business School - Kresge Hall  
**Common Name:**  
**Address:** Soldiers Field Rd  
  
**City/Town:** Boston  
**Village/Neighborhood:** Allston - Brighton; Allston  
**Local No:** JL  
**Year Constructed:** 1953  
**Architect(s):** Perry, Dean and Hepburn  
**Architectural Style(s):** Colonial Revival  
**Use(s):** Dining Hall  
**Significance:** Architecture; Education  
**Area(s):** [BOS.JL: Harvard Business School](#)  
**Designation(s):**

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Inventory No:	BOS.8354
Historic Name:	Soldiers Field Park Apartments
Common Name:	
Address:	Soldiers Field Rd
City/Town:	Boston
Village/Neighborhood:	Allston - Brighton; Allston
Local No:	JL
Year Constructed:	C 1974
Architect(s):	Thompson, Benjamin
Architectural Style(s):	Not researched
Use(s):	Apartment House
Significance:	Architecture; Education
Area(s):	<a href="#">BOS.JL: Harvard Business School</a>
Designation(s):	<>

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Inventory No:	BOS.8361
Historic Name:	Harvard Business School - Mellon Hall
Common Name:	
Address:	Soldiers Field Rd
City/Town:	Boston
Village/Neighborhood:	Allston - Brighton; Allston
Local No:	JL
Year Constructed:	1926
Architect(s):	McKim, Mead and White
Architectural Style(s):	Colonial Revival
Use(s):	Classroom
Significance:	Architecture; Education
Area(s):	<a href="#">BOS.JL: Harvard Business School</a>
Designation(s):	<>

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Inventory No:	BOS.8366
Historic Name:	Harvard Business School - Baker Library
Common Name:	
Address:	Soldiers Field Rd
City/Town:	Boston
Village/Neighborhood:	Allston - Brighton; Allston
Local No:	JL
Year Constructed:	1927
Architect(s):	McKim, Mead and White
Architectural Style(s):	Classical Revival; Colonial Revival
Use(s):	Library
Significance:	Architecture; Education
Area(s):	<a href="#">BOS.JL: Harvard Business School</a>
Designation(s):	<>

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National Register of Historic Places Program: Research

*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.*

To search for properties listed in the National Register use the

National Register of Historic Places database

Since its inception in 1966, more than 80,000 properties have been listed in the National Register. Together these records hold information on more than 1.4 million individual resources--buildings, sites, districts, structures, and objects--and therefore provide a link to the country's heritage at the national, state, and local levels.

The Documentation consists of

- National Register registration form, which provides a physical description of the place, information about its history and significance, and a bibliography.
- Photographs
- Maps (We are plotting our properties into [Google Earth layers](#))
- Use of photographs and forms is available under Fair Use, see our [Content and Copyright](#) page for more information

Examine sample National Register nominations by looking at our [Sample Nominations](#) page or a highlighted property in our [weekly list](#).

Research our Collection:

- We are currently digitizing our records and have put many of them online in our [database at: http://nrhp.focus.nps.gov/](http://nrhp.focus.nps.gov/)
- Our database contains digitized files for National Historic Landmarks, National Park properties that are listed in the National Register, Multiple Property (MPS) Covers, and the files for many states.
- The [download center](#) has many useful finding aids: for historic contexts (MPS Covers), all listed properties, and Determinations of Eligibility.
- Visit our archives. Open Monday through Friday 9:00am to noon. For security reasons, an appointment is necessary to access our building. To schedule an appointment please contact Jeff Joeckel: 202-354-2225 or [e-mail](#)
- Many State Historic Preservation Offices (SHPOs) have digitized their files and put them online. The depth of information available varies from state to state, but ranges from basic locational information to searchable databases with downloadable narrative descriptions and photos. You can check their websites to see if they have the information you need. [List of SHPOs extended information](#).

• Request copies of individual nominations either via [e-mail](#) please include your mailing address and the property name, county, and state. or postal mail:  
National Register of Historic Places  
National Park Service  
1849 C St., NW (MS 2280)  
Washington, DC 20240

Please note, due to irradiation of USPS mail in Washington, DC, we recommend sending official correspondence to us by direct or overnight mail at the following address:

1201 Eye St., NW  
8th Floor (MS 2280)  
Washington, DC 20005

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Last Updated: 06/12/2011 1:00 PM



## **APPENDIX E**

### **Laboratory Data Reports**



## ANALYTICAL REPORT

Lab Number:	L1205141
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Andrew Chan
Phone:	(617) 886-7490
Project Name:	TATA HALL
Project Number:	37646-100
Report Date:	03/29/12

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](http://www.alphalab.com)



**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1205141-01	HA-T3B (OW)	BOSTON, MA	03/27/12 11:55
L1205141-02	TB-03272012	BOSTON, MA	03/27/12 00:00

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

### 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.

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

---

### Report Submission

At the client's request, the Dissolved Metals analysis of sample "HA-T3B(OW) was cancelled, and sample "TB-03272012" was placed on hold.

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

**Case Narrative (continued)**

Chlorine, Total Residual

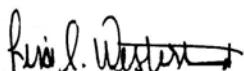
L1205141-01 has an elevated detection limit due to the dilution required by the sample matrix.

Cyanide, Total

The WG525740-4 MS recovery, performed on L1205141-01, is above the acceptance criteria (112%); 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:



Lisa Westerlind

Title: Technical Director/Representative

Date: 03/29/12



# ORGANICS

# **VOLATILES**

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

**Lab ID:** L1205141-01  
**Client ID:** HA-T3B (OW)  
**Sample Location:** BOSTON, MA  
**Matrix:** Water  
**Analytical Method:** 1,8260B  
**Analytical Date:** 03/29/12 12:09  
**Analyst:** PD

**Date Collected:** 03/27/12 11:55  
**Date Received:** 03/27/12  
**Field Prep:** None

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:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

Lab ID: L1205141-01  
 Client ID: HA-T3B (OW)  
 Sample Location: BOSTON, MA

Date Collected: 03/27/12 11:55  
 Date Received: 03/27/12  
 Field Prep: None

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
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
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

Lab ID: L1205141-01

Date Collected: 03/27/12 11:55

Client ID: HA-T3B (OW)

Date Received: 03/27/12

Sample Location: BOSTON, MA

Field Prep: None

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

## 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	127		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	104		70-130



**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

Lab ID: L1205141-01  
Client ID: HA-T3B (OW)  
Sample Location: BOSTON, MA  
Matrix: Water  
Analytical Method: 1,8260B(M)  
Analytical Date: 03/29/12 12:09  
Analyst: PD

Date Collected: 03/27/12 11:55  
Date Received: 03/27/12  
Field Prep: None

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:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

Lab ID: L1205141-01  
Client ID: HA-T3B (OW)  
Sample Location: BOSTON, MA  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 03/28/12 12:52  
Analyst: SH

Date Collected: 03/27/12 11:55  
Date Received: 03/27/12  
Field Prep: None  
Extraction Date: 03/28/12 08:45

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

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 14,504.1

Analytical Date: 03/28/12 10:04

Analyst: SH

Extraction Date: 03/28/12 08:45

Parameter	Result	Qualifier	Units	RL	MDL
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG525496-1					
1,2-Dibromoethane	ND		ug/l	0.010	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260B(M)  
Analytical Date: 03/29/12 11:35  
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG525895-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260B  
 Analytical Date: 03/29/12 11:35  
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG525896-3					
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: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260B  
 Analytical Date: 03/29/12 11:35  
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG525896-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
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	--
Hexachlorobutadiene	ND		ug/l	0.50	--





Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260B  
 Analytical Date: 03/29/12 11:35  
 Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG525896-3					
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	126		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG525496-2								
1,2-Dibromoethane	101		-		70-130	-		20
1,2-Dibromo-3-chloropropane	105		-		70-130	-		20

Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG525895-1 WG525895-2								
1,4-Dioxane	94		86		70-130	9		25

# Lab Control Sample Analysis

## Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525896-1 WG525896-2								
Methylene chloride	98		105		70-130	7		20
1,1-Dichloroethane	104		109		70-130	5		20
Chloroform	108		117		70-130	8		20
Carbon tetrachloride	87		86		63-132	1		20
1,2-Dichloropropane	104		112		70-130	7		20
Dibromochloromethane	97		97		63-130	0		20
1,1,2-Trichloroethane	110		113		70-130	3		20
Tetrachloroethene	96		99		70-130	3		20
Chlorobenzene	96		97		75-130	1		25
Trichlorofluoromethane	133		142		62-150	7		20
1,2-Dichloroethane	124		127		70-130	2		20
1,1,1-Trichloroethane	92		95		67-130	3		20
Bromodichloromethane	110		115		67-130	4		20
trans-1,3-Dichloropropene	87		85		70-130	2		20
cis-1,3-Dichloropropene	87		90		70-130	3		20
1,1-Dichloropropene	101		108		70-130	7		20
Bromoform	104		99		54-136	5		20
1,1,2,2-Tetrachloroethane	118		121		67-130	3		20
Benzene	101		107		70-130	6		25
Toluene	94		97		70-130	3		25
Ethylbenzene	103		104		70-130	1		20

# **Lab Control Sample Analysis** **Batch Quality Control**

**Project Name:** TATA HALL

**Project Number:** 37646-100

**Lab Number:** L1205141

**Report Date:** 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525896-1 WG525896-2								
Chloromethane	49	Q	46	Q	64-130	6		20
Bromomethane	125		134		39-139	7		20
Vinyl chloride	112		119		55-140	6		20
Chloroethane	107		113		55-138	5		20
1,1-Dichloroethene	93		100		61-145	7		25
trans-1,2-Dichloroethene	96		103		70-130	7		20
Trichloroethene	103		106		70-130	3		25
1,2-Dichlorobenzene	108		107		70-130	1		20
1,3-Dichlorobenzene	106		107		70-130	1		20
1,4-Dichlorobenzene	106		106		70-130	0		20
Methyl tert butyl ether	87		90		63-130	3		20
p/m-Xylene	100		102		70-130	2		20
o-Xylene	100		102		70-130	2		20
cis-1,2-Dichloroethene	96		107		70-130	11		20
Dibromomethane	117		123		70-130	5		20
1,4-Dichlorobutane	113		112		70-130	1		20
1,2,3-Trichloropropane	120		121		64-130	1		20
Styrene	98		100		70-130	2		20
Dichlorodifluoromethane	75		77		36-147	3		20
Acetone	123		122		58-148	1		20
Carbon disulfide	77		83		51-130	8		20

# Lab Control Sample Analysis

## Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525896-1 WG525896-2								
2-Butanone	132		137		63-138	4		20
Vinyl acetate	92		93		70-130	1		20
4-Methyl-2-pentanone	110		112		59-130	2		20
2-Hexanone	130		126		57-130	3		20
Ethyl methacrylate	94		91		70-130	3		20
Acrylonitrile	111		116		70-130	4		20
Bromochloromethane	102		107		70-130	5		20
Tetrahydrofuran	117		123		58-130	5		20
2,2-Dichloropropane	64		62	Q	63-133	3		20
1,2-Dibromoethane	106		106		70-130	0		20
1,3-Dichloropropane	108		114		70-130	5		20
1,1,1,2-Tetrachloroethane	101		100		64-130	1		20
Bromobenzene	107		108		70-130	1		20
n-Butylbenzene	118		120		53-136	2		20
sec-Butylbenzene	103		104		70-130	1		20
tert-Butylbenzene	104		106		70-130	2		20
o-Chlorotoluene	114		116		70-130	2		20
p-Chlorotoluene	113		114		70-130	1		20
1,2-Dibromo-3-chloropropane	113		107		41-144	5		20
Hexachlorobutadiene	92		94		63-130	2		20
Isopropylbenzene	99		101		70-130	2		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525896-1 WG525896-2								
p-Isopropyltoluene	111		112		70-130	1		20
Naphthalene	108		109		70-130	1		20
n-Propylbenzene	111		113		69-130	2		20
1,2,3-Trichlorobenzene	106		105		70-130	1		20
1,2,4-Trichlorobenzene	107		108		70-130	1		20
1,3,5-Trimethylbenzene	109		111		64-130	2		20
1,2,4-Trimethylbenzene	109		111		70-130	2		20
trans-1,4-Dichloro-2-butene	95		93		70-130	2		20
Ethyl ether	104		110		59-134	6		20
tert-Butyl Alcohol	94		78		70-130	19		20
Tertiary-Amyl Methyl Ether	86		86		66-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	125		128		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	104		105		70-130
Dibromofluoromethane	105		109		70-130



# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525496-3 QC Sample: L1205011-01 Client ID: MS Sample												
1,2-Dibromoethane	ND	0.257	0.276	107		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	0.257	0.257	100		-	-		70-130	-		20

# SEMIVOLATILES

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

**Lab ID:** L1205141-01  
**Client ID:** HA-T3B (OW)  
**Sample Location:** BOSTON, MA  
**Matrix:** Water  
**Analytical Method:** 1,8270C  
**Analytical Date:** 03/29/12 10:47  
**Analyst:** JB

**Date Collected:** 03/27/12 11:55  
**Date Received:** 03/27/12  
**Field Prep:** None  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 03/28/12 22:47

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
NitrosoDiPhenylAmine(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:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

Lab ID: L1205141-01  
 Client ID: HA-T3B (OW)  
 Sample Location: BOSTON, MA

Date Collected: 03/27/12 11:55  
 Date Received: 03/27/12  
 Field Prep: None

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	43		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	66		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	107		41-149

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

**Lab ID:** L1205141-01  
**Client ID:** HA-T3B (OW)  
**Sample Location:** BOSTON, MA  
**Matrix:** Water  
**Analytical Method:** 1,8270C-SIM  
**Analytical Date:** 03/29/12 10:30  
**Analyst:** JC

**Date Collected:** 03/27/12 11:55  
**Date Received:** 03/27/12  
**Field Prep:** None  
**Extraction Method:** EPA 3510C  
**Extraction Date:** 03/28/12 22:44

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	38		21-120
Phenol-d6	25		10-120
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	49		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	70		41-149



Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C-SIM  
 Analytical Date: 03/29/12 09:09  
 Analyst: JC

Extraction Method: EPA 3510C  
 Extraction Date: 03/28/12 22:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG525715-1					
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: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C-SIM  
 Analytical Date: 03/29/12 09:09  
 Analyst: JC

Extraction Method: EPA 3510C  
 Extraction Date: 03/28/12 22:44

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG525715-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	56		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	87		41-149

Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C  
 Analytical Date: 03/29/12 09:28  
 Analyst: JB

Extraction Method: EPA 3510C  
 Extraction Date: 03/28/12 22:47

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG525717-1					
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Isophorone	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	2.0	--
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	2.0	--
Bis(2-Ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--



Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270C  
 Analytical Date: 03/29/12 09:28  
 Analyst: JB

Extraction Method: EPA 3510C  
 Extraction Date: 03/28/12 22:47

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG525717-1					
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
P-Chloro-M-Cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	99		10-120
4-Terphenyl-d14	124		41-149

# **Lab Control Sample Analysis** Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG525715-2 WG525715-3								
Acenaphthene	63		63		37-111	0		40
2-Chloronaphthalene	65		69		40-140	6		40
Fluoranthene	85		86		40-140	1		40
Hexachlorobutadiene	54		59		40-140	9		40
Naphthalene	64		67		40-140	5		40
Benzo(a)anthracene	81		88		40-140	8		40
Benzo(a)pyrene	80		84		40-140	5		40
Benzo(b)fluoranthene	82		87		40-140	6		40
Benzo(k)fluoranthene	73		77		40-140	5		40
Chrysene	74		79		40-140	7		40
Acenaphthylene	67		69		40-140	3		40
Anthracene	74		74		40-140	0		40
Benzo(ghi)perylene	77		84		40-140	9		40
Fluorene	62		62		40-140	0		40
Phenanthrene	76		78		40-140	3		40
Dibenzo(a,h)anthracene	80		87		40-140	8		40
Indeno(1,2,3-cd)Pyrene	77		82		40-140	6		40
Pyrene	85		88		26-127	3		40
1-Methylnaphthalene	54		57		40-140	5		40
2-Methylnaphthalene	75		77		40-140	3		40
Pentachlorophenol	75		74		9-103	1		40

# **Lab Control Sample Analysis** Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG525715-2 WG525715-3								
Hexachlorobenzene	77		75		40-140	3		40
Hexachloroethane	59		61		40-140	3		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		48		21-120
Phenol-d6	36		38		10-120
Nitrobenzene-d5	66		67		23-120
2-Fluorobiphenyl	62		64		15-120
2,4,6-Tribromophenol	92		94		10-120
4-Terphenyl-d14	94		97		41-149

# Lab Control Sample Analysis

## Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525717-2 WG525717-3								
Benzidine	59		27			74	Q	30
1,2,4-Trichlorobenzene	70		75		39-98	7		30
Bis(2-chloroethyl)ether	74		78		40-140	5		30
1,2-Dichlorobenzene	71		73		40-140	3		30
1,3-Dichlorobenzene	64		69		40-140	8		30
1,4-Dichlorobenzene	65		68		36-97	5		30
3,3'-Dichlorobenzidine	179	Q	181	Q	40-140	1		30
2,4-Dinitrotoluene	130	Q	125	Q	24-96	4		30
2,6-Dinitrotoluene	114		118		40-140	3		30
Azobenzene	121		121		40-140	0		30
4-Chlorophenyl phenyl ether	98		102		40-140	4		30
4-Bromophenyl phenyl ether	120		121		40-140	1		30
Bis(2-chloroisopropyl)ether	84		90		40-140	7		30
Bis(2-chloroethoxy)methane	81		86		40-140	6		30
Hexachlorocyclopentadiene	20	Q	23	Q	40-140	14		30
Isophorone	85		88		40-140	3		30
Nitrobenzene	93		96		40-140	3		30
NitrosoDiPhenylAmine(NDPA)/DPA	175	Q	176	Q	40-140	1		30
Bis(2-Ethylhexyl)phthalate	116		117		40-140	1		30
Butyl benzyl phthalate	128		124		40-140	3		30
Di-n-butylphthalate	115		113		40-140	2		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525717-2 WG525717-3								
Di-n-octylphthalate	118		119		40-140	1		30
Diethyl phthalate	117		116		40-140	1		30
Dimethyl phthalate	109		108		40-140	1		30
Aniline	41		33	Q	40-140	22		30
4-Chloroaniline	83		79		40-140	5		30
2-Nitroaniline	115		112		52-143	3		30
3-Nitroaniline	98		98		25-145	0		30
4-Nitroaniline	106		106		51-143	0		30
Dibenzofuran	92		95		40-140	3		30
n-Nitrosodimethylamine	48		46			4		30
2,4,6-Trichlorophenol	114		120		30-130	5		30
P-Chloro-M-Cresol	110	Q	114	Q	23-97	4		30
2-Chlorophenol	84		84		27-123	0		30
2,4-Dichlorophenol	102		106		30-130	4		30
2,4-Dimethylphenol	90		94		30-130	4		30
2-Nitrophenol	90		96		30-130	6		30
4-Nitrophenol	74		76		10-80	3		30
2,4-Dinitrophenol	81		83		20-130	2		30
4,6-Dinitro-o-cresol	105		106		20-164	1		30
Phenol	45		45		12-110	0		30
2-Methylphenol	81		84		30-130	4		30



# **Lab Control Sample Analysis** Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG525717-2 WG525717-3								
3-Methylphenol/4-Methylphenol	74		77		30-130	4		30
2,4,5-Trichlorophenol	123		127		30-130	3		30
Benzoic Acid	21		20			5		30
Benzyl Alcohol	90		93			3		30
Carbazole	100		98		55-144	2		30
Pyridine	37		25		10-66	39	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	59		59		21-120
Phenol-d6	44		43		10-120
Nitrobenzene-d5	93		95		23-120
2-Fluorobiphenyl	97		99		15-120
2,4,6-Tribromophenol	123	Q	122	Q	10-120
4-Terphenyl-d14	141		138		41-149

# PCBS

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12**SAMPLE RESULTS**

**Lab ID:** L1205141-01  
**Client ID:** HA-T3B (OW)  
**Sample Location:** BOSTON, MA  
**Matrix:** Water  
**Analytical Method:** 5,608  
**Analytical Date:** 03/28/12 21:29  
**Analyst:** SH

**Date Collected:** 03/27/12 11:55  
**Date Received:** 03/27/12  
**Field Prep:** None  
**Extraction Method:** EPA 608  
**Extraction Date:** 03/28/12 04:06  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/28/12  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/28/12

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	90		30-150
Decachlorobiphenyl	93		30-150

**Project Name:** TATA HALL**Lab Number:** L1205141**Project Number:** 37646-100**Report Date:** 03/29/12

### Method Blank Analysis Batch Quality Control

Analytical Method: 5,608  
 Analytical Date: 03/28/12 20:23  
 Analyst: SH

Extraction Method: EPA 608  
 Extraction Date: 03/28/12 01:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/28/12  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/28/12

Parameter	Result	Qualifier	Units	RL	MDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG525486-1					
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 1268	ND		ug/l	0.250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	94		30-150
Decachlorobiphenyl	104		30-150

# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525486-3 QC Sample: L1205136-01 Client ID: MS Sample												
Aroclor 1016	ND	2	1.52	76		-	-		40-140	-		50
Aroclor 1260	ND	2	1.67	84		-	-		40-140	-		50

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
2,4,5,6-Tetrachloro-m-xylene	91				30-150
Decachlorobiphenyl	81				30-150

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** TATA HALL**Project Number:** 37646-100**Lab Number:** L1205141**Report Date:** 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG525486-2								
Aroclor 1016	73		-		40-140	-		50
Aroclor 1260	79		-		40-140	-		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	84				30-150
Decachlorobiphenyl	96				30-150

# Lab Duplicate Analysis

## Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525486-4 QC Sample: L1205136-01 Client ID: DUP Sample						
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	84		96		30-150
Decachlorobiphenyl	80		83		30-150



## METALS

Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

## SAMPLE RESULTS

Lab ID: L1205141-01

Date Collected: 03/27/12 11:55

Client ID: HA-T3B (OW)

Date Received: 03/27/12

Sample Location: BOSTON, MA

Field Prep: None

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.0010	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Arsenic, Total	0.0101		mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Chromium, Total	0.0006		mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Copper, Total	0.0007		mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Iron, Total	19		mg/l	0.05	--	1	03/28/12 10:30	03/29/12 10:12	EPA 3005A	19,200.7	AI
Lead, Total	ND		mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Mercury, Total	ND		mg/l	0.0002	--	1	03/28/12 13:10	03/29/12 10:11	EPA 245.1	3,245.1	KL
Nickel, Total	0.0031		mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Selenium, Total	0.002		mg/l	0.001	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Silver, Total	ND		mg/l	0.0004	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM
Zinc, Total	0.0131		mg/l	0.0050	--	1	03/28/12 10:30	03/28/12 21:45	EPA 3005A	1,6020	BM



Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG525528-1									
Mercury, Total	ND	mg/l	0.0002	--	1	03/28/12 13:10	03/29/12 09:47	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
Total Metals - Westborough Lab for sample(s): 01 Batch: WG525534-1									
Iron, Total	ND	mg/l	0.05	--	1	03/28/12 10:30	03/29/12 09:54	19,200.7	AI

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG525588-1									
Antimony, Total	ND	mg/l	0.0010	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Arsenic, Total	ND	mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Cadmium, Total	ND	mg/l	0.0002	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Chromium, Total	ND	mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Copper, Total	ND	mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Lead, Total	ND	mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Nickel, Total	ND	mg/l	0.0005	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Selenium, Total	ND	mg/l	0.001	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Silver, Total	ND	mg/l	0.0004	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM
Zinc, Total	ND	mg/l	0.0050	--	1	03/28/12 10:30	03/28/12 21:32	1,6020	BM

### Prep Information

Digestion Method: EPA 3005A



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG525528-2								
Mercury, Total	100		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG525534-2								
Iron, Total	100		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG525588-2								
Antimony, Total	89		-		80-120	-		
Arsenic, Total	106		-		80-120	-		
Cadmium, Total	105		-		80-120	-		
Chromium, Total	99		-		80-120	-		
Copper, Total	103		-		80-120	-		
Lead, Total	103		-		80-120	-		
Nickel, Total	102		-		80-120	-		
Selenium, Total	106		-		80-120	-		
Silver, Total	96		-		80-120	-		
Zinc, Total	104		-		80-120	-		

# **Matrix Spike Analysis** **Batch Quality Control**

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525528-4 QC Sample: L1205136-01 Client ID: MS Sample												
Mercury, Total	ND	0.001	0.0012	116		-	-		70-130	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525534-4 QC Sample: L1205136-01 Client ID: MS Sample												
Iron, Total	1.1	1	2.1	100		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525588-4 QC Sample: L1205141-01 Client ID: HA-T3B (OW)												
Antimony, Total	ND	0.5	0.5170	103		-	-		80-120	-		20
Arsenic, Total	0.0101	0.12	0.1409	109		-	-		80-120	-		20
Cadmium, Total	ND	0.051	0.0559	110		-	-		80-120	-		20
Chromium, Total	0.0006	0.2	0.2053	102		-	-		80-120	-		20
Copper, Total	0.0007	0.25	0.2584	103		-	-		80-120	-		20
Lead, Total	ND	0.51	0.5436	106		-	-		80-120	-		20
Nickel, Total	0.0031	0.5	0.5152	102		-	-		80-120	-		20
Selenium, Total	0.002	0.12	0.130	107		-	-		80-120	-		20
Silver, Total	ND	0.05	0.0501	100		-	-		80-120	-		20
Zinc, Total	0.0131	0.5	0.5321	104		-	-		80-120	-		20

**Project Name:** TATA HALL  
**Project Number:** 37646-100

## Lab Duplicate Analysis

Batch Quality Control

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525528-3 QC Sample: L1205136-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525588-3 QC Sample: L1205141-01 Client ID: HA-T3B (OW)						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.0101	0.0101	mg/l	1		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.0006	0.0006	mg/l	5		20
Copper, Total	0.0007	0.0006	mg/l	8		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.0031	0.0030	mg/l	1		20
Selenium, Total	0.002	0.002	mg/l	11		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.0131	0.0133	mg/l	2		20

# **INORGANICS & MISCELLANEOUS**



Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205141

Report Date: 03/29/12

## SAMPLE RESULTS

Lab ID: L1205141-01

Client ID: HA-T3B (OW)

Sample Location: BOSTON, MA

Matrix: Water

Date Collected: 03/27/12 11:55

Date Received: 03/27/12

Field Prep: None

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	39		mg/l	5.0	NA	1	-	03/28/12 16:55	30,2540D	DW
Cyanide, Total	0.037		mg/l	0.005	--	1	03/28/12 21:10	03/29/12 15:55	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.10	--	5	-	03/27/12 21:44	30,4500CL-D	ML
TPH	ND		mg/l	4.00	--	1	03/27/12 18:00	03/29/12 13:15	74,1664A	JO
Phenolics, Total	ND		mg/l	0.03	--	1	03/28/12 18:00	03/29/12 00:40	4,420.1	TP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	03/27/12 21:00	03/27/12 21:39	30,3500CR-D	JT
Anions by Ion Chromatography - Westborough Lab										
Chloride	300		mg/l	5.0	--	10	-	03/28/12 18:05	44,300.0	AU



Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

### 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: WG525421-2										
TPH	ND		mg/l	4.00	--	1	03/27/12 18:00	03/29/12 13:15	74,1664A	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG525449-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	03/27/12 21:00	03/27/12 21:25	30,3500CR-D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG525467-2										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	03/27/12 21:44	30,4500CL-D	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG525555-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	03/28/12 16:55	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG525740-1										
Cyanide, Total	ND		mg/l	0.005	--	1	03/28/12 21:10	03/29/12 15:14	30,4500CN-CE	JO
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG525747-1										
Chloride	ND		mg/l	0.50	--	1	-	03/28/12 17:16	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG525756-1										
Phenolics, Total	ND		mg/l	0.03	--	1	03/28/12 18:00	03/29/12 00:32	4,420.1	TP

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG525421-1								
TPH	85		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG525449-2								
Chromium, Hexavalent	102		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG525467-1								
Chlorine, Total Residual	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG525740-2								
Cyanide, Total	106		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG525747-2								
Chloride	95		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG525756-2								
Phenolics, Total	91		-		82-111	-		12

# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

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: WG525421-3 QC Sample: L1204961-02 Client ID: MS Sample												
TPH	ND	20.4	16.5	81		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525449-4 QC Sample: L1205141-01 Client ID: HA-T3B (OW)												
Chromium, Hexavalent	ND	0.1	0.100	100		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525740-4 QC Sample: L1205141-01 Client ID: HA-T3B (OW)												
Cyanide, Total	0.037	0.2	0.262	112	Q	-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525747-3 QC Sample: L1205141-01 Client ID: HA-T3B (OW)												
Chloride	300	100	380	87		-	-		40-151	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525756-3 QC Sample: L1204928-11 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.76	95		-	-		77-124	-		12

# Lab Duplicate Analysis

## Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525421-4 QC Sample: L1205061-03 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525449-3 QC Sample: L1205141-01 Client ID: HA-T3B (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525467-3 QC Sample: L1205141-01 Client ID: HA-T3B (OW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525555-2 QC Sample: L1204851-03 Client ID: DUP Sample						
Solids, Total Suspended	280	300	mg/l	7		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525740-3 QC Sample: L1205141-01 Client ID: HA-T3B (OW)						
Cyanide, Total	0.037	0.038	mg/l	1		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525747-4 QC Sample: L1205141-01 Client ID: HA-T3B (OW)						
Chloride	300	290	mg/l	3		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG525756-4 QC Sample: L1204928-06 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		12

Project Name: TATA HALL

Lab Number: L1205141

Project Number: 37646-100

Report Date: 03/29/12

## 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(*)
L1205141-01A	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260-SIM(14),8260(14)
L1205141-01B	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260-SIM(14),8260(14)
L1205141-01C	Vial Na2S2O3 preserved	A	N/A	4.0	Y	Absent	504(14)
L1205141-01D	Vial Na2S2O3 preserved	A	N/A	4.0	Y	Absent	504(14)
L1205141-01E	Amber 1000ml unpreserved	A	7	4.0	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1205141-01F	Amber 1000ml unpreserved	A	7	4.0	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1205141-01G	Amber 1000ml unpreserved	A	7	4.0	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1205141-01H	Amber 1000ml unpreserved	A	7	4.0	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1205141-01I	Amber 1000ml Na2S2O3	A	7	4.0	Y	Absent	PCB-608(7)
L1205141-01J	Amber 1000ml Na2S2O3	A	7	4.0	Y	Absent	PCB-608(7)
L1205141-01K	Amber 1000ml HCl preserved	A	N/A	4.0	Y	Absent	TPH-1664(28)
L1205141-01L	Amber 1000ml HCl preserved	A	N/A	4.0	Y	Absent	TPH-1664(28)
L1205141-01M	Amber 1000ml H2SO4 preserved	A	<2	4.0	Y	Absent	TPHENOL-420(28)
L1205141-01O	Plastic 1000ml unpreserved	A	7	4.0	Y	Absent	TSS-2540(7)
L1205141-01P	Plastic 500ml unpreserved	A	7	4.0	Y	Absent	CL-300(28),TRC-4500(1)
L1205141-01Q	Plastic 500ml unpreserved	A	7	4.0	Y	Absent	HEXCR-3500(1)
L1205141-01R	Plastic 250ml NaOH preserved	A	>12	4.0	Y	Absent	TCN-4500(14)
L1205141-01S	Plastic 250ml HNO3 preserved	A	<2	4.0	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)
L1205141-01T	Plastic 250ml HNO3 preserved	A	<2	4.0	Y	Absent	-
L1205141-02A	Vial HCl preserved	A	N/A	4.0	Y	Absent	HOLD(14)
L1205141-02B	Vial Na2S2O3 preserved	A	N/A	4.0	Y	Absent	HOLD(14)

## Container Comments

\*Values in parentheses indicate holding time in days



**Project Name:** TATA HALL**Project Number:** 37646-100**Lab Number:** L1205141**Report Date:** 03/29/12**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
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**Container Comments**

L1205141-01T

\*Values in parentheses indicate holding time in days



**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

## 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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

**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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205141  
**Report Date:** 03/29/12

## 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 January 30, 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, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, 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), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))

*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, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)

*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, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### 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, 4500NH3-H, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 8081, 8082, 8330, 8151A, 624, 8260, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

*Solid Waste/Soil* (Inorganic Parameters: 9010B, 9012A, 9014A, 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.)

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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, 245.2, 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, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, 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. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050C, 9065,1311, 1312, 3005A, 3050B. Organic Parameters: SW-846 3540C, 3546, 3550B, 3580A, 3630C, 5030B, 5035, 8260B, 8270C, 8330, 8151A, 8015B, 8082, 8081A.)

**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, 245.2, 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, SM4500F-BC, EPA 200.7, 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, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 6020, 6020A, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, 4500CN-CE, EPA 245.1, 245.2, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8081A, 8081B, 8082, 8082A, 8151A, 8330, NJ OQA-QAM-025 Rev.7, NJ EPH.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846, 6010B, 6010C, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9045C, 9050A, 9065. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3545, 3546, 3550B, 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, 4500H-B, 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, LACHAT 10-107-04-1-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 9010B, 9030B.. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8015B, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.**

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. **NELAP Accredited.**  
*Drinking Water* (Organic Parameters: EPA 524.2, 504.1)

*Non-Potable Water* (Inorganic Parameters: EPA 1312, 200.7, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P, BE. Organic Parameters: EPA 3510C, 3005A, 3630C, 5030B, 625, 624, 608, 8081A, 8081B, 8082, 802A, 8151A, 8260B, 8270C, 8270D, 8330)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3050B, 3060A, 6010B, 6010C, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH<sub>3</sub>-H. Organic Parameters: 3540C, 3546, 3580A, 3630C, 5035, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8330)

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

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, 4500NH<sub>3</sub>-H, 4500NO<sub>2</sub>B, 4500P-E, 4500 S<sup>2-</sup>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.**

*Non-Potable Water* (Inorganic Parameters: EPA 3005A, 3015, 1312, 6010B, 6010C, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X. Organic Parameters: EPA 8260B)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 3050B, 1311, 1312, 6010B, 6010C, 9030B, 9010B, 9012A, 9014. Organic Parameters: EPA 5035, 5030B, 8260B.)

**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, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO<sub>3</sub>-F, 5220D, 5310C, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8270C, 8330A, 625, 8082, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9010, 9012A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8270C, 8330A/B-prep, 8082, 8081A, 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, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix.





## ANALYTICAL REPORT

Lab Number:	L1205360
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Andrew Chan
Phone:	(617) 886-7490
Project Name:	TATA HALL
Project Number:	37646-100
Report Date:	04/02/12

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.

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



**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1205360-01	HA-T3B (OW)	BOSTON, MA	03/27/12 11:55
L1205360-02	HA-T3B (OW)-FILTERED	BOSTON, MA	03/27/12 11:55



**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

### 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.

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


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### Report Submission

At the client's request, sample "HA-T3B (OW)-FILTERED" was re-logged beyond the 24-hour holding time for filtration.

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: 04/02/12

# **INORGANICS & MISCELLANEOUS**

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205360

Report Date: 04/02/12

## SAMPLE RESULTS

Lab ID: L1205360-01

Client ID: HA-T3B (OW)

Sample Location: BOSTON, MA

Matrix: Water

Date Collected: 03/27/12 11:55

Date Received: 03/27/12

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Amenable	ND		mg/l	0.010	--	2	03/30/12 21:30	04/02/12 15:55	30,4500CN-G	JO
Cyanide, Physiologically Available	0.012		mg/l	0.005	--	1	04/02/12 11:30	04/02/12 17:32	64,9014(M)	JO



Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205360

Report Date: 04/02/12

## SAMPLE RESULTS

Lab ID: L1205360-02  
 Client ID: HA-T3B (OW)-FILTERED  
 Sample Location: BOSTON, MA  
 Matrix: Water

Date Collected: 03/27/12 11:55  
 Date Received: 03/27/12  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Amenable	ND		mg/l	0.010	--	2	03/30/12 21:30	04/02/12 15:55	30,4500CN-G	JO
Cyanide, Physiologically Available	0.015		mg/l	0.005	--	1	04/02/12 11:30	04/02/12 17:39	64,9014(M)	JO



**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

**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): 01-02 Batch: WG526268-1										
Cyanide, Amenable	ND		mg/l	0.010	--	2	03/30/12 21:30	04/02/12 15:55	30,4500CN-G	JO

General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG526514-3										
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	04/02/12 11:30	04/02/12 17:38	64,9014(M)	JO

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG526268-2								
Cyanide, Amenable	93		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG526514-1								
Cyanide, Physiologically Available	108		-		80-120	-		
General Chemistry - Westborough Lab NEGATIVE LCS Associated sample(s): 01-02 Batch: WG526514-2								
Cyanide, Physiologically Available	5		-		0-10	-		

# Matrix Spike Analysis

## Batch Quality Control

Project Name: TATA HALL

Project Number: 37646-100

Lab Number: L1205360

Report Date: 04/02/12

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): 01-02    QC Batch ID: WG526514-4    QC Sample: L1205360-02    Client ID: HA-T3B (OW)-FILTERED												
Cyanide, Physiologically Available	0.015	0.2	0.184	85		-	-		75-125	-		20

**Project Name:** TATA HALL  
**Project Number:** 37646-100

## Lab Duplicate Analysis

Batch Quality Control

**Lab Number:** L1205360  
**Report Date:** 04/02/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG526268-3 QC Sample: L1205360-02 Client ID: HA-T3B (OW)-FILTERED						
Cyanide, Amenable	ND	ND	mg/l	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG526514-5 QC Sample: L1205360-02 Client ID: HA-T3B (OW)-FILTERED						
Cyanide, Physiologically Available	0.015	0.014	mg/l	6		20



**Project Name:** TATA HALL**Lab Number:** L1205360**Project Number:** 37646-100**Report Date:** 04/02/12**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(*)
L1205360-01A	Plastic 250ml NaOH preserved	A	>12	4.0	Y	Absent	ACN-4500(14),PACN(14)
L1205360-02A	Plastic 250ml NaOH preserved spl	A	>12	4.0	Y	Absent	ACN-4500(14),PACN(14)
L1205360-02X	Amber 1000ml unpreserved	A	7	4.0	Y	Absent	FILTER()

**Container Comments**

L1205360-02X

\*Values in parentheses indicate holding time in days

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

## 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

- |           |   |
|-----------|---|
| <b>A</b>  | - Spectra identified as "Aldol Condensation Product".   |
| <b>B</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. |
| <b>C</b>  | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.  |
| <b>D</b>  | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.   |
| <b>E</b>  | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.  |
| <b>G</b>  | - 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.  |
| <b>H</b>  | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.  |
| <b>I</b>  | - 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.  |
| <b>M</b>  | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.  |
| <b>NJ</b> | - 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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

**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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205360  
**Report Date:** 04/02/12

## 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 January 30, 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, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, 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), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))

*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, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)

*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, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### 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, 4500NH3-H, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 8081, 8082, 8330, 8151A, 624, 8260, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

*Solid Waste/Soil* (Inorganic Parameters: 9010B, 9012A, 9014A, 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.)

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, 245.2, 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, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, 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. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050C, 9065,1311, 1312, 3005A, 3050B. Organic Parameters: SW-846 3540C, 3546, 3550B, 3580A, 3630C, 5030B, 5035, 8260B, 8270C, 8330, 8151A, 8015B, 8082, 8081A.)

**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, 245.2, 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, SM4500F-BC, EPA 200.7, 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, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 6020, 6020A, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, 4500CN-CE, EPA 245.1, 245.2, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8081A, 8081B, 8082, 8082A, 8151A, 8330, NJ OQA-QAM-025 Rev.7, NJ EPH.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846, 6010B, 6010C, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9045C, 9050A, 9065. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3545, 3546, 3550B, 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, 4500H-B, 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, LACHAT 10-107-04-1-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 9010B, 9030B.. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8015B, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.**

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. **NELAP Accredited.**  
*Drinking Water* (Organic Parameters: EPA 524.2, 504.1)

*Non-Potable Water* (Inorganic Parameters: EPA 1312, 200.7, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P, BE.  
Organic Parameters: EPA 3510C, 3005A, 3630C, 5030B, 625, 624, 608, 8081A, 8081B, 8082, 802A, 8151A, 8260B, 8270C, 8270D, 8330)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3050B, 3060A, 6010B, 6010C, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH<sub>3</sub>-H. Organic Parameters: 3540C, 3546, 3580A, 3630C, 5035, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8330)

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

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, 4500NH<sub>3</sub>-H, 4500NO<sub>2</sub>B, 4500P-E, 4500 S<sup>2-</sup> 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.**

*Non-Potable Water* (Inorganic Parameters: EPA 3005A, 3015, 1312, 6010B, 6010C, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X. Organic Parameters: EPA 8260B)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 3050B, 1311, 1312, 6010B, 6010C, 9030B, 9010B, 9012A, 9014. Organic Parameters: EPA 5035, 5030B, 8260B.)

**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, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO<sub>3</sub>-F, 5220D, 5310C, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8270C, 8330A, 625, 8082, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9010, 9012A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8270C, 8330A/B-prep, 8082, 8081A, 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, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix.







## ANALYTICAL REPORT

Lab Number:	L1205497
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Andrew Chan
Phone:	(617) 886-7490
Project Name:	TATA HALL
Project Number:	37646-100
Report Date:	04/03/12

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.

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**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1205497-01	HA-T3B (OW)	BOSTON, MA	03/27/12 11:55

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

### 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.

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


---

### Sample Receipt

The sample was Field Filtered for Dissolved Metals.

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: 04/03/12

## **METALS**

Project Name: TATA HALL

Lab Number: L1205497

Project Number: 37646-100

Report Date: 04/03/12

**SAMPLE RESULTS**

Lab ID: L1205497-01

Date Collected: 03/27/12 11:55

Client ID: HA-T3B (OW)

Date Received: 03/27/12

Sample Location: BOSTON, MA

Field Prep: See Narrative

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Westborough Lab											
Iron, Dissolved	19		mg/l	0.05	--	1	03/28/12 13:30	04/03/12 11:16	EPA 3005A	19,200.7	AI



Project Name: TATA HALL

Lab Number: L1205497

Project Number: 37646-100

Report Date: 04/03/12

## Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG526675-1										
Iron, Dissolved	ND		mg/l	0.05	--	1	03/28/12 13:30	04/03/12 11:10	19,200.7	AI

### Prep Information

Digestion Method: EPA 3005A

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** TATA HALL

**Project Number:** 37646-100

**Lab Number:** L1205497

**Report Date:** 04/03/12

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG526675-2								
Iron, Dissolved	99		-		85-115	-		

# **Matrix Spike Analysis** Batch Quality Control

**Project Name:** TATA HALL

**Lab Number:** L1205497

**Project Number:** 37646-100

**Report Date:** 04/03/12

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG526675-4 QC Sample: L1205497-01 Client ID: HA-T3B (OW)												
Iron, Dissolved	19	1	20	100		-	-		75-125	-		20



**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG526675-3 QC Sample: L1205497-01 Client ID: HA-T3B (OW)						
Iron, Dissolved	19	19	mg/l	0		20

**Project Name:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

## 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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

**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:** TATA HALL  
**Project Number:** 37646-100

**Lab Number:** L1205497  
**Report Date:** 04/03/12

## REFERENCES

- 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.

## 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 January 30, 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, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, 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), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))

*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, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)

*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, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### 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, 4500NH3-H, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 8081, 8082, 8330, 8151A, 624, 8260, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

*Solid Waste/Soil* (Inorganic Parameters: 9010B, 9012A, 9014A, 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.)

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, 245.2, 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, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, 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. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050C, 9065,1311, 1312, 3005A, 3050B. Organic Parameters: SW-846 3540C, 3546, 3550B, 3580A, 3630C, 5030B, 5035, 8260B, 8270C, 8330, 8151A, 8015B, 8082, 8081A.)

**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, 245.2, 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, SM4500F-BC, EPA 200.7, 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, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 6020, 6020A, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, 4500CN-CE, EPA 245.1, 245.2, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8081A, 8081B, 8082, 8082A, 8151A, 8330, NJ OQA-QAM-025 Rev.7, NJ EPH.)

*Solid & Chemical Materials* (Inorganic Parameters: SW-846, 6010B, 6010C, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9045C, 9050A, 9065. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3545, 3546, 3550B, 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, 4500H-B, 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, LACHAT 10-107-04-1-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 9010B, 9030B.. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B.)

*Solid & Hazardous Waste* (Inorganic Parameters: 1010, 1030, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8015B, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

**North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.**

**Pennsylvania Department of Environmental Protection** Certificate/Lab ID : 68-03671. **NELAP Accredited.**  
*Drinking Water* (Organic Parameters: EPA 524.2, 504.1)

*Non-Potable Water* (Inorganic Parameters: EPA 1312, 200.7, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P, BE. Organic Parameters: EPA 3510C, 3005A, 3630C, 5030B, 625, 624, 608, 8081A, 8081B, 8082, 802A, 8151A, 8260B, 8270C, 8270D, 8330)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3050B, 3060A, 6010B, 6010C, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH<sub>3</sub>-H. Organic Parameters: 3540C, 3546, 3580A, 3630C, 5035, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260B, 8270C, 8270D, 8330)

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

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, 4500NH<sub>3</sub>-H, 4500NO<sub>2</sub>B, 4500P-E, 4500 S<sup>2-</sup> 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.**

*Non-Potable Water* (Inorganic Parameters: EPA 3005A, 3015, 1312, 6010B, 6010C, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X. Organic Parameters: EPA 8260B)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 3050B, 1311, 1312, 6010B, 6010C, 9030B, 9010B, 9012A, 9014. Organic Parameters: EPA 5035, 5030B, 8260B.)

**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, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO<sub>3</sub>-F, 5220D, 5310C, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8270C, 8330A, 625, 8082, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

*Solid & Hazardous Waste* (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9010, 9012A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8270C, 8330A/B-prep, 8082, 8081A, 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, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix.

PAGE 1 OF 1

**Project Information**  
Project Name: ATTN

Hall

Project Location: Boston, MA

Project #: 37646-100

Project Manager: **Andrew Chaz**

ALF-HA CODE #

100

Date Due: 1/12/17 Time:

71616

**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)

Sample ID

3/27/12	11:55
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[illegible]

**PLEASE ANSWER QUESTIONS ABOVE!**

# IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01 (rev. 18-Jan-2010)

ALPHA Job #: ~~1205147~~

### Billing Information

<input type="checkbox"/> Saline as cited, 1110	FO#:
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Regulatory Requirements/Report Limits

State/Fed Program	Criteria
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# MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Are MCP Analytical Methods Required?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Are CT RCP (Reasonable Confidence Protocol)s Required?

SAMPLE HANDLING

ANALYSIS  
Dissolved  
TRL, CT  
TPH-1664  
ICN  
8260  
504  
RGP-608  
8270 / 8270-SIN  
Hex Cr  
Phenol  
Total RGP Met  
Dissolved RGP  
Filtration \_\_\_\_\_  
☐ Done  
☐ Not needed  
☐ Lab to do  
☐ Preservation  
☐ Lab to do  
(Please specify below)  
Sample Specific Comments  
AL #  
BOTTLES

		*	*					2
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Container Type	Preservative
P	A
P	A
P	A
P	B
P	E
V	R
V	H
A	H
A	A
P	A
P	D
P	C
P	C

Relinquished By: 1

Date/Time 3-1

Received By:

Date/Time

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.