Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

PUBLIC NOTICE
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER RESOURCES/ SURFACE WATER DISCHARGE PERMIT PROGRAM
1 WINTER STREET
BOSTON, MA 02108
TEL#: (617) 292 -5500

Notice is hereby given that the following Tentative Determination to Issue Antidegradation Authorization To Discharge To an Outstanding Resource Water is being processed and the following actions being proposed thereon pursuant to the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53) and 314 CMR 2.06, 3.00 and 4.00:

NAME OF SITE : 175 Wyman Street
SITE OWNER : Hewlett Packard, Inc.
SITE OPERATOR (if different than owner) : GZA GeoEnvironmental, Inc.
NPDES PERMIT NUMBER ASSIGNED BY EPA : MAG910002
MASSDEP TRANSMITTAL NUMBER : X275620
NAME OF RECEIVING WATER(S) AND TOWN : Cambridge Reservoir, Cambridge, MA
PERMIT AUTHORITY FOR DISCHARGE : NPDES Remediation General Permit (RGP), effective April 8, 2017

PROPOSED ACTION: Tentative determination to issue Antidegradation Authorization To discharge to an Outstanding Resource Water discharge under the Remediation General Permit (RGP). Discharge is from ongoing and long term groundwater treatment with discharge to Cambridge Reservoir, an Outstanding Resource Water (ORW).

A copy of the Notice of Intent (NOI), applicant's justification for authorization, and Tentative Determination to Issue Antidegradation Authorization To Discharge To an Outstanding Resource Water

(draft decision by MassDEP) are available here: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities under "MassDEP Permits & Approvals".

Comments on the proposed action or requests for a public hearing thereon pursuant to 314 CMR 2.07 must be filed with MassDEP either by U.S. mail to: MassDEP, Regulatory Comment Box, 1 Winter Street, 5th floor, Boston, MA 02108, or by email to dep.talks@mass.gov (include "BASF Plainville RGP" in the subject line). All comments should include the sender's full name and address. Comments must be submitted by January 25, 2019. The public comment period is thirty (30) days after publication of this notice.

Lealdon Langley, Director
Wetlands and Wastewater Program
Department of Environmental Protection

Tentative Determination to Issue Antidegradation Authorization To Discharge To an Outstanding Resource Water Fact Sheet

I. APPLICANT, FACILITY INFORMATION, and DISCHARGE INFORMATION

Name and Address of site:

175 Wyman Street
Waltham, MA 02451

Name and Address of Site Owner:

GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
Norwood, MA 02062

Discharge Information:

Discharge from the Site has been ongoing under NPDES Remediation General Permits (RGPs) since 2005. Following EPA Authorization according to the 2017 RGP, the groundwater containment and treatment system (GCTS) will continue to discharge to an on-property storm drain which eventually flows into an off-property storm water retention area, which discharges to the Cambridge Reservoir. The Massachusetts Surface Water Quality Standards (MASWQS) at 314 CMR 4.05 and 4.06 designate the Cambridge Reservoir as an Inland Water, Class A Public Water Supply, which is protected as an Outstanding Resource Water.

II. LIMITATIONS AND CONDITIONS

Discharge permit limitations are as listed in the 2017 Remediation General Permit (RGP) and are in conformance with 314 CMR 4.00, Massachusetts Surface Water Quality Standards (MASWQS.)

The applicant has demonstrated that an Antidegradation Authorization To Discharge To an Outstanding Resource Water (314 CMR 4.04(3)) may be issued by the Department of Environmental Protection pursuant to 314 CMR 4.04(5)(b).

III. MASSDEP AUTHORIZATION BASIS AND PERMITTING REQUIREMENT

MASWQS and the RGP state that discharges to ORWs in Massachusetts are ineligible for coverage unless an Antidegradation Authorization is granted by MassDEP. Therefore, as described in the Request for Authorization letter dated July 16, 2018, GZA GeoEnvironmental, Inc. submitted a description of how the project would demonstrate compliance with the MASWQS requirements for Antidegradation Authorization listed in 314 CMR 4.04(5)(a)(2) through 4.04(5)(a)(4).

Coverage under the 2017 RGP is required for this discharge in accordance with the Massachusetts Clean Water Act, M.G.L. c. 21, §§ 26-53; 314 CMR 3.03; and 314 CMR 4.00.

EPA's Authorization to discharge includes effluent limitations based on the location of discharge, aquatic life and human health protection criteria, and the MASWQS.

IV. COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISIONS

The public comment period for this authorization was published in the MEPA Environmental Monitor on December 26, 2018 and will extend until January 25, 2019. The public comment period is thirty (30) days following the date of publication.

A final decision on the issuance/denial of this permit will be made after the public notice period, and review of any comments received during this period.

V. STATE CONTACT INFORMATION

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m. Monday through Friday excluding holidays, from:

Jennifer Wood
MassDEP
Bureau of Water Resources
1 Winter Street
Boston, MA 02108
617-654-6536
Jennifer.Wood@state.ma.us

Lealdon Langley, Director
Wetlands and Wastewater Program
Department of Environmental Protection

_____
DATE

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

[Draft for Public Comment Only]

TENTATIVE DETERMINATION TO ISSUE ANTIDEGRADATION AUTHORIZATION TO DISCHARGE TO AN OUTSTANDING RESOURCE WATER

NAME OF SITE	: 175 Wyman Street
SITE OWNER	: Hewlett Packard, Inc.
SITE OPERATOR (if different than owner)	: GZA GeoEnvironmental, Inc.
NPDES PERMIT NUMBER ASSIGNED BY EPA	: MAG910002
MASSDEP TRANSMITTAL NUMBER	: X275620
NAME OF RECEIVING WATER(S) AND TOWN	: Cambridge Reservoir, Cambridge, MA
PERMIT AUTHORITY FOR DISCHARGE	: NPDES Remediation General Permit (RGP), effective April 8, 2017

The 2017 RGP was issued by both the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) on March 9, 2017, with an effective date of April 8, 2017 and is available for sites located in Massachusetts and New Hampshire that discharge 1.0 million gallons per day or less as a result of remediation activities from eight general categories including collection structure dewatering/remediation.

As required by the RGP, GZA GeoEnvironmental, Inc. submitted a Notice of Intent (NOI) on June 27, 2017 requesting discharge to Cambridge Reservoir, which MassDEP classifies as an Outstanding Resource Water (ORW). Section 1.3 of the 2017 RGP states that discharges to ORWs are ineligible for coverage unless an Antidegradation Authorization is granted by MassDEP, and therefore MassDEP was required to perform an additional review in accordance with the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards (314 CMR 4.04) and MassDEP policy, "Implementation Procedures For The Antidegradation Provisions of the Massachusetts Surface Water Quality Standards,

314 CMR 4.00" ("the Policy") prior to Antidegradation Authorization of the discharge. Also, according to 314 CMR 4.04(5)(c), "Where an authorization Is at issue, the Department shall circulate a public notice in accordance with 314 CMR 2.06. Said notice shall state an authorization is under consideration by the Department, and indicate the Department's tentative determination. The applicant shall have the burden of justifying the authorization. Any authorization granted pursuant to 314 CMR 4.04 shall not extend beyond the expiration date of the permit."

Based on the NOI and additional information dated July 16, 2018, provided by GZA GeoEnvironmental, Inc. and pursuant to the authority granted by Chapter 21, Sections 26-53 of the Massachusetts General Laws, as amended, 314 CMR 2.00, and 314 CMR 4.00, MassDEP tentatively determined to issue the following Antidegradation Authorization To Discharge To an ORW.

MassDEP's Antidegradation Authorization does not provide final authorization for the discharge. With the completion of Antidegradation Authorization, the EPA can proceed with Authorization to discharge under the 2017 RGP.

Project Description

As described in the NOI, discharge from a groundwater containment and treatment system (GCTS) was installed at 175 Wyman Street, Waltham ("the Site") in 1997 to treat trichloroethene (TCE)-affected groundwater associated with the Site. Coverage under the RGP was initially issued by the United States Environmental Protection Agency (EPA) on September 22, 2005 for discharges associated with the treatment system. The discharge is ongoing and long term and operates at a maximum effluent flow of 70 gallons per minute (gpm) and an average effluent flow of 30 gpm. The NOI is proposing the continued operation of the GCTS and associated discharge.

The NOI states the following:
"The Site consists primarily of an approximately 27.5-acre parcel located on the easterly side of Route 128 (Interstate Route 95) at 175 Wyman Street, in the north central section of Waltham."

"HP used the Site from 1959 to 1995 for the manufacture of medical equipment. New owners of the property undertook a significant redevelopment of the property in 2008 with demolition of prior buildings, construction of two new buildings, and other associated improvements consisting of parking, landscaping, and a stormwater retention basin."

"A GCTS designed to remove volatile organic compounds (VOCs) from the groundwater has been operating at the Site since September 19, 1997. The Site is governed under the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) under Release Tracking Number 3-13311. The GCTS consists of six groundwater recovery wells, a flow equalization tank, a tray aerator, a bag filtration system, liquid-phase granular activated carbon/ion exchange adsorption unit and two vapor-phase granular activated carbon adsorption units, and associated instrumentation and controls."

"Treated groundwater is discharged to an on-property storm drain which eventually flows into an off-property storm water retention area, which in turn discharges to the Cambridge Reservoir".

Project Site

From the Site, discharge from the treatment system flows into an on-property storm drain which eventually flows into an off-property storm water retention area, which in turn discharges to the Cambridge Reservoir, which according to Massachusetts Surface Water Quality Standards 314 CMR 4.05 and 4.06 (MASWQS), is classified an Inland Water, Class A Public Water Supply and therefore also an Outstanding Resource Water.

Jurisdiction

The 2017 RGP authorization will include pollutant effluent limits based on submitted groundwater data and water quality criteria for freshwater in the MASWQS, which reference USEPA's *National Water Quality Criteria: 2002*, and available dilution at the point of discharge. The 2017 NOI included a Dilution Factor of 1 for the point of discharge based on low flow conditions.

In the previous EPA authorization for this Site dated May 25, 2011 ("2011 EPA Authorization") EPA allowed the Site to discharge according to the RGP issued on September 9, 2010 "2010 RGP". Since an NOI was submitted for the 2017 RGP, the Site continues to operate according the requirements put forth in the 2011 EPA Authorization. The 2011 EPA Authorization included monthly effluent limitations or monitoring for inorganics, VOCs, metal, fuel-related, and other parameters. The 2011 EPA Authorization is located at the following web link: https://www3.epa.gov/region1/npdes/remediation/noi/2010/FormerHewlettPackardFacility2010NOI.pdf.

MASWQS and the RGP state that discharges to ORWs in Massachusetts are ineligible for coverage unless an Antidegradation Authorization is granted by MassDEP. As described in the Request for Authorization letter dated July 16, 2018, GZA GeoEnvironmental, Inc. submitted a description of how the project would demonstrate compliance with the MASWQS requirements for Antidegradation Authorization listed in 314 CMR 4.04(5)(a)(2) through 4.04(5)(a)(4). These responses are paraphrased below.

- Item 1, based on 314 CMR 4.04(5)(a)(2):
  Are there less environmentally damaging alternative sites for the discharge, sources of disposal, or methods to eliminate the discharge that are reasonably available or feasible?
  - Response: The discharge is associated with a groundwater remediation system, which is subject to the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). As such, some of the elements of this question (relocation of activity, alternative methods of production or operation, etc.) are not applicable. The MCP, 310 CMR 40.0040 (specifically sections 40.0041 through 40.0045), outlines options for the management of discharges from remedial systems (referred to as "Remedial Wastewater"). The three categories for the discharge of Remedial Wastewater are Ground Surface and Subsurface Discharge, POTW Discharge, and Surface Water Discharge.

Ground Surface and Subsurface Discharge are not feasible because of shallow bedrock and low permeable overburden soil, and the presence of several subsurface drainage structures on site. Also, POTW Discharge is not a possibility because the nearest treatment facility prohibits the discharge of groundwater.

Accordingly, the feasible option for the discharge generated from the groundwater remediation system on the Site is to surface water.

- Item 2, based on 314 CMR 4.04(5)(a)(3):
  To the maximum extent feasible, are the discharge and activity designed and conducted to minimize adverse impacts on water quality, including implementation of source reduction practices?
  - Response: The existing groundwater remediation system utilizes six recovery wells to mitigate the off-Site migration of Site-related groundwater contaminants. The treatment of recovered groundwater utilizes applicable treatment components to remove Site-related contaminants (predominately TCE, cis-1,2-dichloroethene, and tetrachloroethene) plus metals (predominantly copper, iron, lead, selenium, and zinc) also present in the groundwater. The groundwater treatment system was reviewed by EPA and discharge of the treated water is authorized by EPA under the NPDES RGP. EPA imposed conditions are conservative and ensure that the discharge of treated groundwater does not result in exceedances of water quality standards for drinking water or for aquatic life. Nutrients, toxics, and hazardous substances are not utilized in the treatment process. As noted above, the discharge is associated with a groundwater remediation system, rather than an industrial process. The references to production processes, source reduction (in the sense implied), and raw materials do not apply. With respect to treatment technologies, process controls and system operation, it is GZA's opinion that the current system meets the requirements of the RGP and the MCP.

- Item 3, based on 314 CMR 4.04(5)(a)(4):
  Will the discharge impair existing uses of the receiving water or result in a level of water quality less than the specified for the Class?
  - Response: The existing discharge is subject to discharge limits set by EPA as to not impair the existing uses of the receiving water. As stipulated by the EPA, the discharge water is sampled and analyzed monthly to ensure compliance. Beginning in 1999, semiannual sampling for Site-related contaminants of surface water from the reservoir near the point of discharge has been performed. Since that time there was one occasion (June 2007) when a contaminant (TCE) was detected in the surface water; however, the reported concentrations (<1 ug/L) were below drinking water standards (5 ug/L).

- Item 4
  Since expiration of the previous RGP on September 9, 2015, did discharge from the facility meet the requirements of the 2010 NOI?

- Response: Since September 9, 2015, the effluent from the groundwater remediation system exceeded the discharge limits once. The exceedance was for TCE during the March 2016 monthly sampling event. The system was deactivated and the exceedance (13 ug/L vs. discharge limit of 5 ug/L) was reported to EPA. Corrective actions were performed and on March 30, 2016, the system was reactivated, and an effluent sample was collected confirming compliance with the discharge limits. These results were also communicated to the EPA. With this one exception the discharge from the remediation system has been in compliance since September 2015.

Conclusion

The NOI and Request for Authorization have sufficiently defined the nature and general elements of the project for the purposes of MassDEP review and demonstrated that impact on the ORW will be minimized to the extent practicable. Based on review of the documents provided and comments received, MassDEP determined that the discharge meets the requirements for authorization listed in 314 CMR 4.04(5)(b) and 314 CMR 4.04(5)(a)2-4 and is proposing to authorize the discharge, subject to the terms and conditions of EPA's authorization to discharge under the RGP.

_____ _____

Lealdon Langley, Director **[Date]**
Wetlands and Wastewater Program
Department of Environmental Protection

Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

249 Vanderbilt Avenue
Norwood, MA 02062
T: 781.278.3700
F: 781.278.5701
F: 781.278.5702
www.gza.com

June 27, 2017
File No. 01.0015522.17

United States Environmental Protection Agency – Region 1
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: Submittal of Notice of Intent (NOI)
Remediation General Permit - Authorization #MAG910002
175 Wyman Street
Waltham, Massachusetts

To Whom It May Concern:

GZA GeoEnvironmental, Inc. (GZA), on behalf of our client, HP, Inc. (HP), is submitting the attached Notice of Intent (NOI) form (Appendix A) for a Remediation General Permit (RGP) for the 175 Wyman Street project (the Site). A groundwater containment and treatment system (GCTS) was installed at the Site in 1997 to treat trichloroethene (TCE)-affected groundwater associated with the Site. Coverage under the National Pollutant Discharge Elimination System (NPDES) RGP was initially issued by the United States Environmental Protection Agency (EPA) on September 22, 2005 for discharges associated with the treatment system. With submission of this NOI, we are proposing the continued operation of the GCTS and associated discharge.

BACKGROUND

The Site consists primarily of an approximately 27.5-acre parcel located on the easterly side of Route 128 (Interstate Route 95) at 175 Wyman Street, in the north central section of Waltham (Figure 1 - Locus Plan). HP used the Site from 1959 to 1995 for the manufacture of medical equipment. New owners of the property undertook a significant redeveloped of the property in 2008 with demolition of prior buildings, construction of two new buildings, with other associated improvements consisting of parking, landscaping, and a stormwater retention basin.

As indicated previously, a GCTS designed to remove volatile organic compounds (VOCs) from the groundwater has been operating at the Site since September 19, 1997. The Site is governed under the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) under Release Tracking Number 3-13311. The GCTS consists of six groundwater recovery wells, a flow equalization tank, a tray aerator, a bag filtration system, liquid-phase granular activated carbon/ion exchange adsorption unit and two vapor-phase granular activated carbon adsorption units, and associated instrumentation and controls. A process flow diagram is illustrated in Figure 2.

Treated groundwater is discharged to an on-property storm drain which eventually flows into an off-property storm water retention area, which in turn discharges to the Cambridge Reservoir as shown on Figure 3. This discharge is currently performed in accordance with the following permits and approvals: coverage under the NPDES Remediation General Permit (Authorization #MAG910002); approval from the City of Cambridge Water Department; and a Massachusetts Highway Department (MHD) access permit (for discharge to the stormwater retention pond). Copies of these permits and approvals are included in Appendix B. In addition, copies of semi-annual status reports, including operational status of the GCTS and water quality monitoring of

the influent and effluent, are provided to the City of Cambridge Water Department and the Massachusetts Department of Environmental Protection.

NOTICE OF INTENT

This NOI application also includes the following items:

- Summary of historically believed present parameters of the influent groundwater is included in Table 1 and laboratory analytical results of the source water are included as Appendix C (note: because of the high concentration of some volatile organic compounds the detection limit of other compounds is elevated to above applicable effluent limits);
- Laboratory analytical results for the receiving water area are included as Appendix D;
- Calculation sheets for establishing effluent limitations are included as Appendix E;
- Review of Areas of Critical Environmental Concern indicate that the proposed discharge is not to an ACEC and a review of Federally Listed Endangered and Threatened Species in Massachusetts indicated that the Northern Long-eared Bat is located state-wide. However, this species is not likely to be present at the Site additionally the discharge does not impact habitat. In addition, review of the US Fish and Wildlife's online Information for Planning and Consultation (IPaC) service, indicated that federally listed species were not likely to be present within the action area of site activities (see Appendix F);
- Review of the Massachusetts Geographic Information Systems (MassGIS) DEP Priority Resources Map of Waltham shows that there are no ACECs and no habitats for Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site (Figure 4). Therefore, permit eligibility meets "Criterion A"; and
- Review of the electronic Massachusetts Cultural Resource Information System database, made available through Massachusetts Historical Commission, found that the are no properties listed or eligible for listing on the National Registry of Historic Places under the National Historic Preservation Act. Therefore, there will be no impact associated with this discharge to such properties. The documentation of this review can be found in Appendix G.

Please do not hesitate to contact the undersigned at (781) 278-3700 if you have any questions or require further information.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

John A. Colbert, P.E.
Senior Project Manager

Patrick F. Sheehan, P.E.
Consultant/Reviewer

William R. Norman, LSP
Principal

Enclosures:

Table: Table 1 – Summary of Historically Believed Present Parameters - Influent Groundwater Analytical Results

Figures: Figure 1 - Site Locus Map
Figure 2 - Groundwater Containment and Treatment System Process Flow Diagram
Figure 3 – Site Plan
Figure 4 – Site Scoring Map Showing 500 Foot & ½ Mile Radii

Appendices: Appendix A - Notice of Intent Form
Appendix B – Discharge Approval Letters
Appendix C – Influent Laboratory Analytical Report
Appendix D – Receiving Water Laboratory Analytical Report
Appendix E – Calculation Sheets for Effluent Limitations
Appendix F - ACEC and Federally Listed Endangered and Threatened Species in Massachusetts Evaluation
Appendix G – MACRIS Search Results

TABLES

TABLE 1
SUMMARY OF HISTORICALLY BELIEVED PRESENT PARAMETERS
INFLUENT GROUNDWATER ANALYTICAL RESULTS

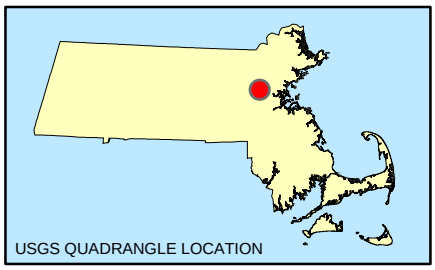
Notice of Intent Application
175 Wyman Street, Waltham, Massachusetts

Sample Collection Date	System Influent Samples							
	TCE (ppb)	PCE (ppb)	DCE (ppb)	Fe (ppb)	Zn (ppb)	Cu (ppb)	Pb (ppb)	Se (ppb)
7/14/2016	6,600	50	*25*	343	53.1	52.4	7.6	*2.5*
8/11/2016	5,400	*25*	*25*	162	11.5	10.2	1.3	*5.0*
9/9/2016	4,600	*25*	*25*	144	11.0	8.5	1.2	*2.5*
10/6/2016	6,400	*25*	*25*	1,300	57.3	55	7.8	*2.5*
11/10/2016	8,200	59	*25*	1,410	78.6	38	6.9	*2.5*
12/8/2016	7,800	52	*25*	765	56.2	33	4.4	*2.5*
1/13/2017	9,300	65	*25*	3,690	25.5	51.4	25.3	*2.5*
2/8/2017	8,100	*25*	*25*	58	*5.0*	8	*0.5*	*2.5*
3/9/2017	6,400	*25*	*25*	538	43.1	17	1.6	*2.5*
4/7/2017	7,300	55	*25*	494	13.0	9	*0.5*	*2.5*
5/4/2017	7,400	59	*25*	95	11.3	7	*0.25*	*2.5*
5/4/2017	7,200	57	*25*	107	*6.73*	5.16	*0.25*	*2.5*
6/8/2017	7,400	47	*25*	116	16.3	8	*0.5*	*2.5*
Average	7,085	44	25	709	29.9	23	4.5	2.7
95th percentile	9,027	**69**	25	**2295**	**68.7**	**54.2**	**15.4**	3.8

Notes:

1. Samples analyzed for VOCs via EPA Method 8260 and samples analyzed for metals via EPA Method 3005/6020 or 200.7.
2. Concentrations in *italics* represent half of the reported detection limit and concentrations with *italics* and *underline* are reported as estimated.
3. TCE = Trichloroethylene; PCE = Tetrachloroethylene; DCE = cis-1,2-Dichloroethylene; Fe = iron; Zn = zinc; Cu = copper; Pb = Lead; Se = Selenium.
4. For a complete list of target analytes and detection limits, see attached laboratory data sheets.
5. Two sets of samples were collected on May 4, 2017 to statisfy the NOI application and compliance with the existing RGP permit.
6. Calculated concentrations in bold have been used to represent influent concentrations to calculate water quality effluent standards.

FIGURES



SOURCE : SCANNED USGS TOPOGRAPHIC QUADRANGLES
SCANNED BY THE MASSACHUSETTS EXECUTIVE OFFICE OF
ENVIRONMENTAL AFFAIRS, MASSGIS. DISTRIBUTED JUNE, 2001.

Data Supplied by :

0 1,000 2,000 4,000 6,000 Feet

N W E S

PROJ. MGR.: JAC
DESIGNED BY: WAD
REVIEWED BY: WRN
OPERATOR: EMD

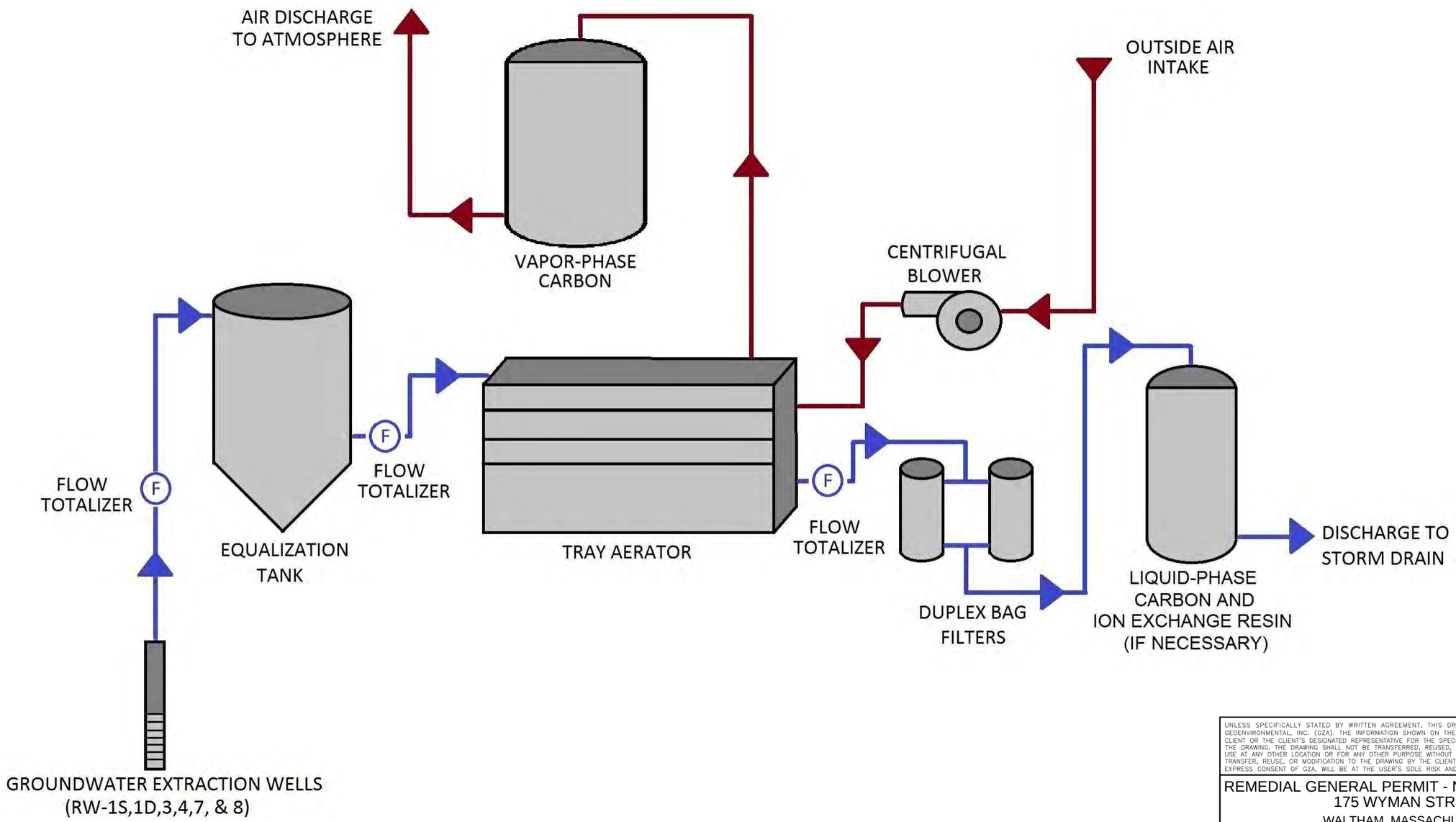
DATE: 06-21-2017

LOCUS PLAN

175 WYMAN STREET
WALTHAM, MASSACHUSETTS

JOB NO.
15522.17

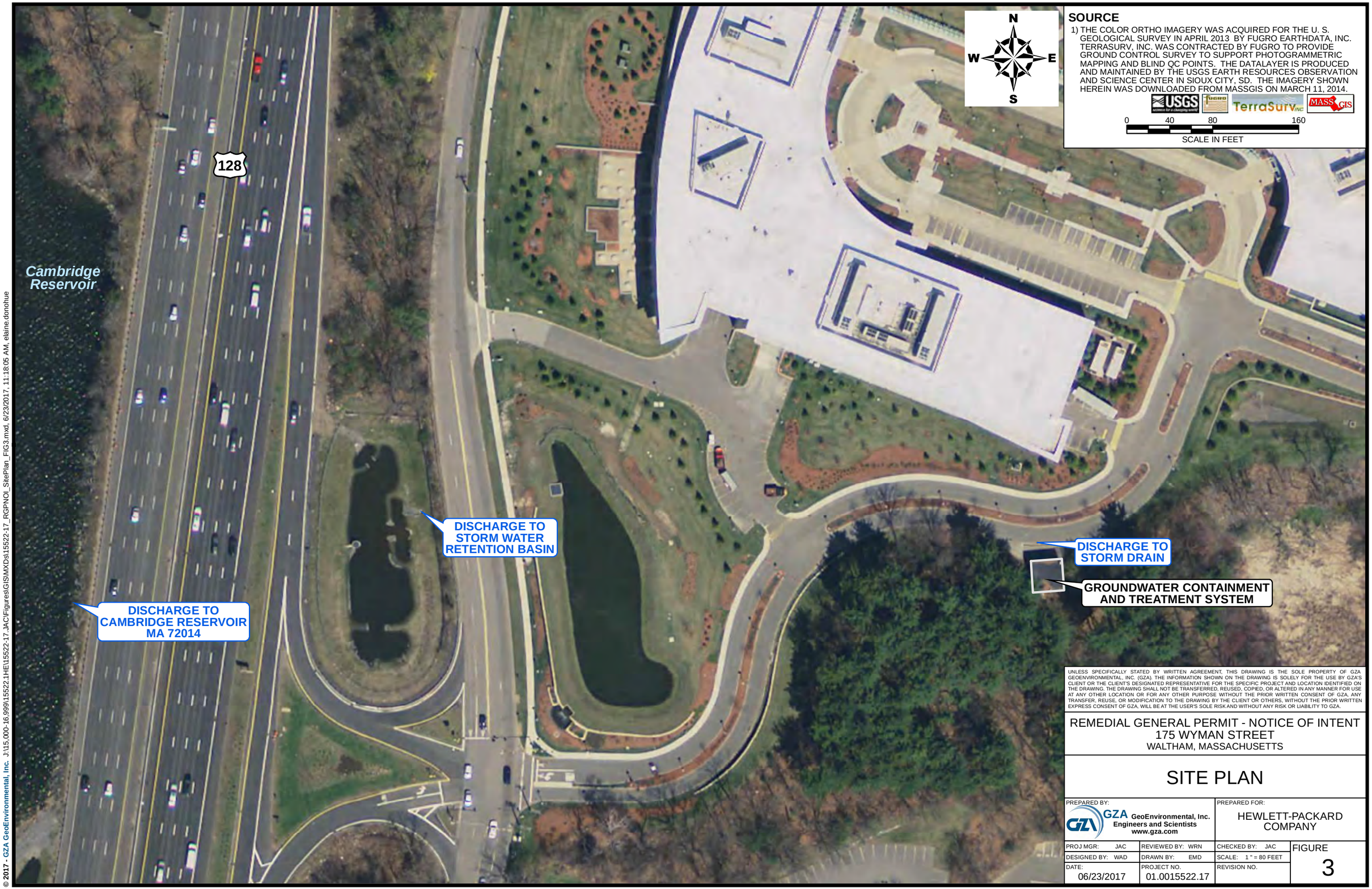
FIGURE NO.
1



REMEDIAL GENERAL PERMIT - NOTICE OF INTENT
175 WYMAN STREET
WALTHAM, MASSACHUSETTS

GROUNDWATER CONTAINMENT
AND TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		HEWLETT-PACKARD COMPANY	
PROJ MGR: JAC	REVIEWED BY: WRN	CHECKED BY: JAC	FIGURE
DESIGNED BY: WAD	DRAWN BY: WAD	SCALE: N.T.S.	2
DATE: 06-21-2017	PROJECT NO. 01.0015522.17	REVISION NO.	



SOURCE

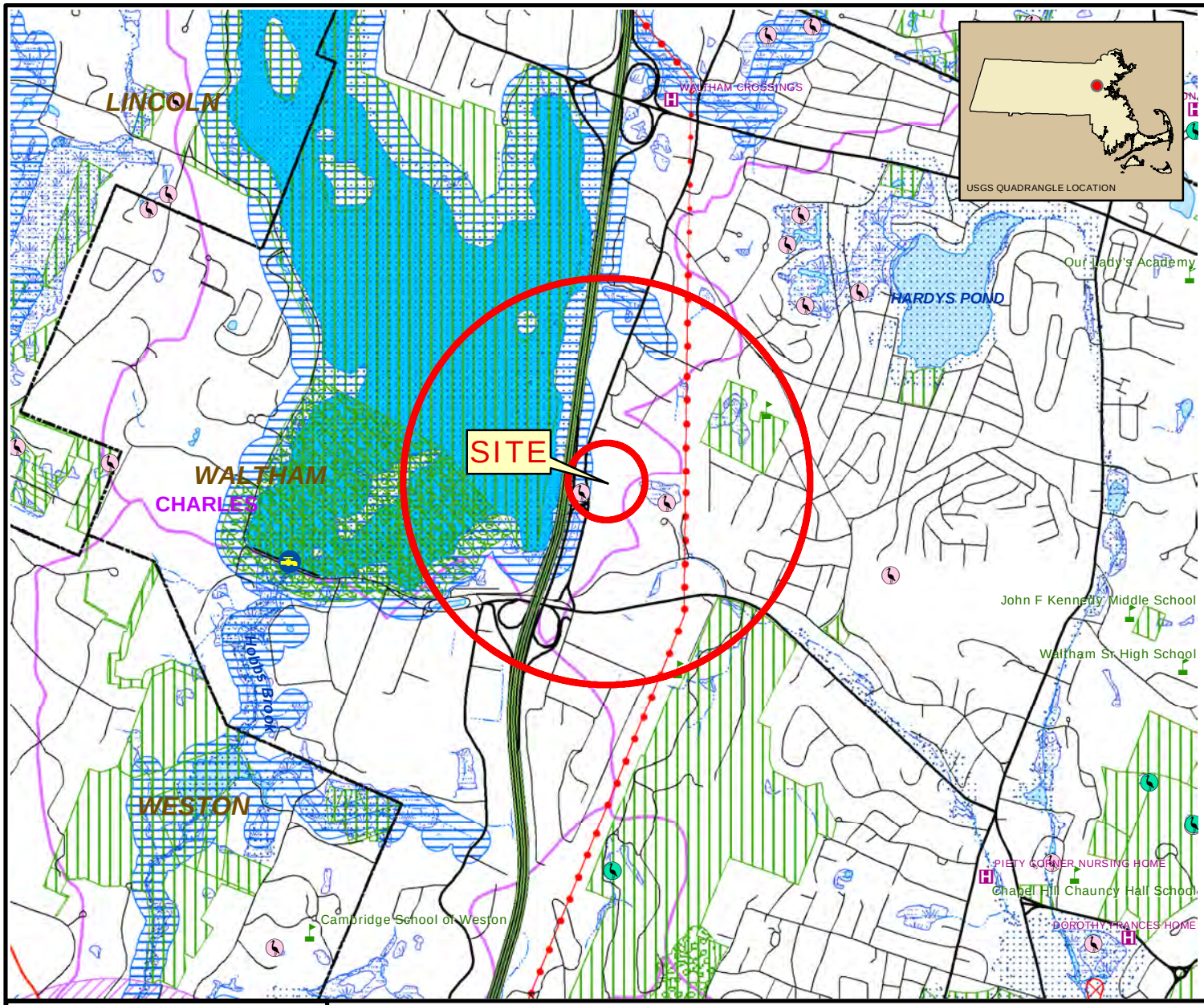
1) THE COLOR ORTHO IMAGERY WAS ACQUIRED FOR THE U. S. GEOLOGICAL SURVEY IN APRIL 2013 BY FUGRO EARTHDATA, INC. TERRASURV, INC. WAS CONTRACTED BY FUGRO TO PROVIDE GROUND CONTROL SURVEY TO SUPPORT PHOTOGRAMMETRIC MAPPING AND BLIND QC POINTS. THE DATALAYER IS PRODUCED AND MAINTAINED BY THE USGS EARTH RESOURCES OBSERVATION AND SCIENCE CENTER IN SIOUX CITY, SD. THE IMAGERY SHOWN HEREIN WAS DOWNLOADED FROM MASSGIS ON MARCH 11, 2014.

0 40 80 160
SCALE IN FEET

REMEDIAL GENERAL PERMIT - NOTICE OF INTENT
175 WYMAN STREET
WALTHAM, MASSACHUSETTS

SITE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: HEWLETT-PACKARD COMPANY	
PROJ MGR: JAC	REVIEWED BY: WRN	CHECKED BY: JAC	FIGURE
DESIGNED BY: WAD	DRAWN BY: EMD	SCALE: 1 " = 80 FEET	3
DATE: 06/23/2017	PROJECT NO. 01.0015522.17	REVISION NO.	



DEP MCP 21e LEGEND

- Public Water Supply Well: Community GW, Community SW, Emergency SW, Non-Community
- Zone II's
- Interim Wellhead Protection Areas (IWPA's)
- Zone A
- Sole Source Aquifers
- Solid Waste Sites
- Protected Openspace
- Areas of Critical Environmental Concern
- NHESP Estimated Habitats of Rare Wildlife: Use with MA Wetlands Protection Act (310 CMR 10.12)
- NHESP Priority Habitats of State-Listed Rare Species: Use with MA Wetlands Protection Act (310 CMR 10.12)
- NHESP Vernal Pools: Certified, Potential
- Drainage Subbasins
- Massachusetts Major Basins
- MassDEP Regions
- Town Boundaries
- County Boundaries

Aquifers, By Yield

- High Yield - Potential Source
- Medium Yield - Potential Source
- Low Yield - Potential Source

Non-Potential Drinking Water Souce Area

- High Yield - Non Potential Source
- Medium Yield - Non Potenital Source

FEMA Floodplains

- 100 Year Floodplain

Hydrography

- Lake, Pond, Wide River, Impoundment
- Reservoir (with PWSID)
- Wetlands: Marsh, Wooded Swamp
- Saltwater Wetlands; Cranberry Bog
- Tidal Flats, Shoals

Rivers and Streams

- Stream
- Intermittent Stream
- Shoreline
- Man-Made Shoreline
- Dam

EOT-OTP Roads, Transmission Lines

- Limited Access Highway
- Multi-Lane Highway, Unlimited Access
- Other Numbered Highway
- Major Road - Connector
- Minor Street or Road
- Railroad Lines
- Aqueducts
- Powerline
- Pipeline
- Airport
- Track
- Trail

Source Data Supplied by MassGIS (June 2017)

N W E S

0 1,000 2,000

SCALE IN FEET

SITE SCORING MAP SHOWING 500 FOOT & 1/2 MILE RADII

(RTN 3-13311)
175 WYMAN STREET
WALTHAM, MASSACHUSETTS

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

JOB NO. 15522.17

PROJ. MGR.: JAC
DESIGNED BY.: SJB
REVIEWED BY.: WRN
OPERATOR.: EMD
DATE: 06-23-2017

FIGURE NO. 4

APPENDIX A

NOTICE OF INTENT FORM

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

1. Name of site:	Site address: Street:		
	City:	State:	Zip:
2. Site owner	Contact Person:		
	Telephone:	Email:	
	Mailing address: Street:		
Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private ☐ Other; if so, specify:	City:	State:	Zip:
3. Site operator, if different than owner	Contact Person:		
	Telephone:	Email:	
	Mailing address: Street:		
	City:	State:	Zip:
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply: ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): ☐ MA Chapter 21e; list RTN(s): ☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:	☐ CERCLA ☐ UIC Program ☐ POTW Pretreatment ☐ CWA Section 404	

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ☐ Yes ☐ No Are sensitive receptors present near the site? (check one): ☐ Yes ☐ No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.		
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.		
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.		
6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ☐ Yes ☐ No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No		

C. Source water information:

1. Source water(s) is (check any that apply):			
☐ Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ The receiving water ☐ A surface water other than the receiving water; if so, indicate waterbody:	☐ Potable water; if so, indicate municipality or origin: ☐ Other; if so, specify:

2. Source water contaminants:	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ☐ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ☐ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ☐ New discharge ☐ New source	
Outfall(s):	Outfall location(s): (Latitude, Longitude)
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: ☐ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ☐ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No	
Provide the expected start and end dates of discharge(s) (month/year): Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ☐ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="4">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
☐ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>☐ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia								Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	---
Antimony								206 µg/L	
Arsenic								104 µg/L	
Cadmium								10.2 µg/L	
Chromium III								323 µg/L	
Chromium VI								323 µg/L	
Copper								242 µg/L	
Iron								5,000 µg/L	
Lead								160 µg/L	
Mercury								0.739 µg/L	
Nickel								1,450 µg/L	
Selenium								235.8 µg/L	
Silver								35.1 µg/L	
Zinc								420 µg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX								100 µg/L	---
Benzene								5.0 µg/L	---
1,4 Dioxane								200 µg/L	---
Acetone								7.97 mg/L	---
Phenol								1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride								4.4 µg/L	
1,2 Dichlorobenzene								600 µg/L	---
1,3 Dichlorobenzene								320 µg/L	---
1,4 Dichlorobenzene								5.0 µg/L	---
Total dichlorobenzene								763 µg/L in NH	---
1,1 Dichloroethane								70 µg/L	---
1,2 Dichloroethane								5.0 µg/L	---
1,1 Dichloroethylene								3.2 µg/L	---
Ethylene Dibromide								0.05 µg/L	---
Methylene Chloride								4.6 µg/L	---
1,1,1 Trichloroethane								200 µg/L	---
1,1,2 Trichloroethane								5.0 µg/L	---
Trichloroethylene								5.0 µg/L	---
Tetrachloroethylene								5.0 µg/L	
cis-1,2 Dichloroethylene								70 µg/L	---
Vinyl Chloride								2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates								190 µg/L	
Diethylhexyl phthalate								101 µg/L	
Total Group I PAHs								1.0 µg/L	---
Benzo(a)anthracene								As Total PAHs	
Benzo(a)pyrene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs								100 µg/L	---
Naphthalene								20 µg/L	---
E. Halogenated SVOCs									
Total PCBs								0.000064 µg/L	---
Pentachlorophenol								1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons								5.0 mg/L	---
Ethanol								Report mg/L	---
Methyl-tert-Butyl Ether								70 µg/L	
tert-Butyl Alcohol								120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether								90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ☐ Separation/Filtration ☐ Other; if so, specify:

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.

Identify each major treatment component (check any that apply):
☐ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ☐ Media filter
☐ Chemical feed tank ☐ Air stripping unit ☐ Bag filter ☐ Other; if so, specify:

Indicate if either of the following will occur (check any that apply):
☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Is use of a flow meter feasible? (check one): ☐ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	
Provide the average effluent flow in gpm.	
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ☐ Yes ☐ No

F. Chemical and additive information

1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:

2. Provide the following information for each chemical/additive, using attachments, if necessary:

a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): ☐ Yes ☐ No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): ☐ Yes ☐ No

G. Endangered Species Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

☐ **FWS Criterion A**: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".

☐ **FWS Criterion B**: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ☐ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No

☐ **FWS Criterion C**: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ☐ the operator ☐ EPA ☐ Other; if so, specify:

☐ **NMFS Criterion**: A determination made by EPA is affirmed by the operator that the discharges and related activities will have "no effect" or are "not likely to adversely affect" any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ☐ Yes ☐ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ☐ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ☐ Yes ☐ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

☐ **Criterion A**: No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.

☐ **Criterion B**: Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.

☐ **Criterion C**: Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ☐ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ☐ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ☐ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ☐ Yes ☐ No

J. Certification requirement

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 gathered and evaluated 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of the discharge.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 6/27/17
Print Name and Title: William R. Norman, Principal, LSP, GZA GeoEnvironmental, Inc.	

APPENDIX B

DISCHARGE APPROVAL LETTERS

CITY OF CAMBRIDGE

MASSACHUSETTS

WATER DEPARTMENT
250 FRESH POND PARKWAY
CAMBRIDGE, MASS. 02138

617-349-4770

September 15, 1997

William Norman, L.S.P.
Principal
GZA GeoEnvironmental, Inc.
320 Needham Street
Newton Upper Falls, MA 02164

Re: Request for Approval
Groundwater Treatment System Discharge
175 Wyman Street
Waltham, Massachusetts

Dear Mr. ~~Norman~~ Bill:

The Cambridge Water Department (CWD) would like to acknowledge the tremendous efforts that you and your staff have made in the development and implementation of the groundwater remediation program for the above referenced site. Your early inclusion of the CWD in the design process, as well as your efforts to address our water quality concerns are very much appreciated.

As requested in your letter of April 28, 1997, the CWD does approve the discharge of treated groundwater into Hobbs Brook Reservoir as part of the implementation of the Immediate Response Action Plan for this site. As part of this approval the CWD would like to receive copies of all analytical test results for water quality samples collected and be notified within 24 hours of a controller-initiated shutdown of the system and any corrective actions that are being taken or considered.

Please call me if you have any questions regarding this approval.

Very truly yours,

Chip Norton

Chip Norton
Watershed Manager

cc: Michael Nicoloro, CWD
Cambridge Water Board
Paul Dadak, Hewlett Packard
Kyle MacAfee, DEP-NERO

Permit No. 496-0271

PERMIT - WALTHAM

Subject to all the terms, conditions, and restrictions printed or written below, and on the reverse side hereof, permission is hereby granted to GZA Geoenvironmental, Inc. to enter upon the State Highway known as northbound Route 128/ Interstate 95 at the Wyman Street interchange for the purpose of discharging treated groundwater from the aquifer surrounding the Hewlett Packard Facility on Wyman Street into the State owned drainage system and detention pond via an on-site stormwater catch basin.

This Permit requires periodic inspection of the detention pond to ensure conformance with the National Pollution Discharge Elimination System Permit Exclusion.

Any and all technical data derived from the afore-mentioned operation shall be forwarded to the MHD District Four Environmental Engineer.

WORK HOURS: 9:00 A.M. thru 3:00 P.M. Monday thru Friday

Provisions shall be made for the safety and protection of any Pedestrian Traffic during the work period.

The work will be performed as per plans on file at the Massachusetts Highway Department District Four Permits Office.

The Grantee shall notify the District Permits Engineer at (617) 648-6100, two (2) days prior to the start of work.

The Grantee shall make contact with the Area Contract Specialist III via Pager Telephone Number #617-644-3602, forty-eight hours prior to start of work. No work shall be authorized without said notification.

A copy of this permit must be on the job site at all times for inspection. Failure to have this permit available will result in suspension of the rights granted by this permit.

This permit is issued with the stipulation that it may be modified or revoked at any time at the discretion of the District Four Highway Director or his representative without rendering said Department or the Commonwealth of Massachusetts liable in any way.

Free flow of traffic shall be maintained at all times.

When in the opinion of the Engineer, this operation constitutes a hazard to traffic in any area, the Grantee may be required to suspend operations during certain hours and to remove his equipment from the roadway.

The Grantee will be responsible for any damage caused by his operation to curbing, structures, roadway, etc..

The Grantee shall be responsible for any ponding of water which may develop within the State Highway Layout, caused by this work.

No work shall be authorized during snow, sleet, or ice storms and subsequent snow removal operations. No bituminous concrete shall be installed between November 15, 199 and April 15, 199 .

The Highway surface shall be kept clean of debris at all times and shall be thoroughly cleaned at the completion of this permit.

At the completion of this permit, all disturbed areas shall be restored to a condition equal or similar to that which existed prior to the work.

The Grantee shall indemnify and save harmless the Commonwealth and its Highway Department against all suits, claims or liability of every name and nature arising at any time out of or in consequence of the acts of the Grantee in the performance of the work covered by this permit and or failure to comply with terms and conditions of the permit whether by themselves or their employees or subcontractors.

APPLICANT'S REPRESENTATIVE: Pat Sheehan
TELEPHONE NUMBER: 617-630-6190

(SEE OTHER SIDE FOR ADDITIONAL CONDITIONS)

No work shall be done under this permit until the Grantee shall have communicated with and received instructions from the District Highway Director of the Massachusetts Highway Department at 519 Appleton Street, Arlington, Ma. 02174.

This permit shall be void unless the work herein contemplated shall have been completed before June 11, 1997.

Dated at Arlington this 11th day of June, 1996.

Massachusetts Highway Department,

By

Sherman Eidelman, P.E.
District Highway Director

WJD

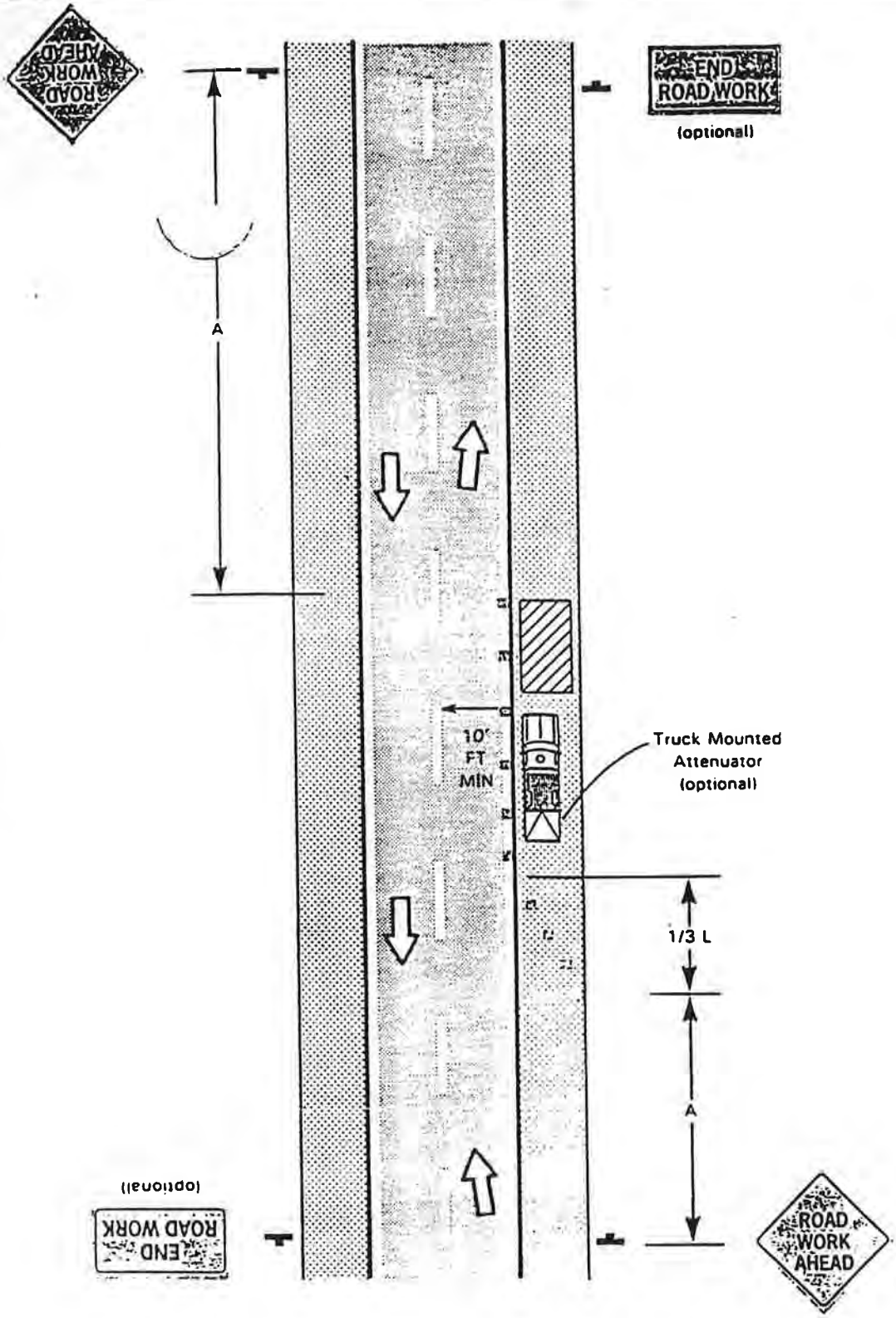


Figure TA-6. Shoulder work with minor encroachment

APPENDIX C

INFLUENT LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

Lab Number:	L1621793
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	07/22/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1621793-01	INF	WATER	WALTHAM, MA	07/14/16 09:30	07/14/16
L1621793-02	MID	WATER	WALTHAM, MA	07/14/16 09:30	07/14/16
L1621793-03	EFF	WATER	WALTHAM, MA	07/14/16 09:30	07/14/16

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: Melissa Cripps

Title: Technical Director/Representative

Date: 07/22/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/16 13:15
Analyst: PD

Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	50		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	6600		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1621793

Project Number: 01.0015522.16 **Report Date:** 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-01 D Date Collected: 07/14/16 09:30

Client ID: INF Date Received: 07/14/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/16 13:52
Analyst: PD

Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.63		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: HP WALTHAM **Lab Number:** L1621793

Project Number: 01.0015522.16 **Report Date:** 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-02 Date Collected: 07/14/16 09:30

Client ID: MID Date Received: 07/14/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	97		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/16 14:29
Analyst: PD

Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-03
Client ID: EFF
Sample Location: WALTHAM, MA
Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	97		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/16 12:02
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG914991-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/16 12:02
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG914991-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG914991-3 WG914991-4								
Methylene chloride	95		100		70-130	5		20
1,1-Dichloroethane	100		110		70-130	10		20
Chloroform	93		98		70-130	5		20
Carbon tetrachloride	79		84		63-132	6		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	120		120		70-130	0		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	110		110		75-130	0		25
Trichlorofluoromethane	81		83		62-150	2		20
1,2-Dichloroethane	93		96		70-130	3		20
1,1,1-Trichloroethane	80		85		67-130	6		20
Bromodichloromethane	93		93		67-130	0		20
trans-1,3-Dichloropropene	84		88		70-130	5		20
cis-1,3-Dichloropropene	89		88		70-130	1		20
1,1-Dichloropropene	92		97		70-130	5		20
Bromoform	98		99		54-136	1		20
1,1,2,2-Tetrachloroethane	120		130		67-130	8		20
Benzene	100		100		70-130	0		25
Toluene	110		120		70-130	9		25
Ethylbenzene	110		110		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG914991-3 WG914991-4								
Chloromethane	90		89		64-130	1		20
Bromomethane	49		50		39-139	2		20
Vinyl chloride	98		98		55-140	0		20
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	84		92		61-145	9		25
trans-1,2-Dichloroethene	93		100		70-130	7		20
Trichloroethene	94		98		70-130	4		25
1,2-Dichlorobenzene	120		120		70-130	0		20
1,3-Dichlorobenzene	120		120		70-130	0		20
1,4-Dichlorobenzene	120		120		70-130	0		20
Methyl tert butyl ether	86		92		63-130	7		20
p/m-Xylene	110		115		70-130	4		20
o-Xylene	115		120		70-130	4		20
cis-1,2-Dichloroethene	99		110		70-130	11		20
Dibromomethane	100		100		70-130	0		20
1,4-Dichlorobutane	130		130		70-130	0		20
1,2,3-Trichloropropane	120		120		64-130	0		20
Styrene	115		125		70-130	8		20
Dichlorodifluoromethane	60		60		36-147	0		20
Acetone	130		120		58-148	8		20
Carbon disulfide	95		100		51-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1621793
Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG914991-3 WG914991-4								
2-Butanone	120		130		63-138	8		20
Vinyl acetate	93		100		70-130	7		20
4-Methyl-2-pentanone	120		**140**	Q	59-130	15		20
2-Hexanone	120		120		57-130	0		20
Ethyl methacrylate	99		110		70-130	11		20
Acrylonitrile	130		**140**	Q	70-130	7		20
Bromochloromethane	100		110		70-130	10		20
Tetrahydrofuran	130		130		58-130	0		20
2,2-Dichloropropane	**62**	Q	67		63-133	8		20
1,2-Dibromoethane	100		110		70-130	10		20
1,3-Dichloropropane	110		120		70-130	9		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	110		120		70-130	9		20
n-Butylbenzene	120		120		53-136	0		20
sec-Butylbenzene	120		120		70-130	0		20
tert-Butylbenzene	110		110		70-130	0		20
o-Chlorotoluene	120		110		70-130	9		20
p-Chlorotoluene	110		110		70-130	0		20
1,2-Dibromo-3-chloropropane	110		110		41-144	0		20
Hexachlorobutadiene	100		100		63-130	0		20
Isopropylbenzene	110		120		70-130	9		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG914991-3 WG914991-4								
p-Isopropyltoluene	120		120		70-130	0		20
Naphthalene	130		**140**	Q	70-130	7		20
n-Propylbenzene	120		120		69-130	0		20
1,2,3-Trichlorobenzene	130		130		70-130	0		20
1,2,4-Trichlorobenzene	120		120		70-130	0		20
1,3,5-Trimethylbenzene	110		120		64-130	9		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	110		110		70-130	0		20
Ethyl ether	100		110		59-134	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	106		109		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	95		97		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1621793
Project Number:	01.0015522.16	**Report Date:**	07/22/16

SAMPLE RESULTS

Lab ID:	L1621793-01	Date Collected:	07/14/16 09:30
Client ID:	INF	Date Received:	07/14/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0524		mg/l	0.0020	--	1	07/19/16 11:40	07/19/16 16:35	EPA 3005A	1,6020A	AM
Iron, Total	0.343		mg/l	0.050	--	1	07/19/16 11:40	07/19/16 18:36	EPA 3005A	19,200.7	AB
Lead, Total	0.0076		mg/l	0.0020	--	1	07/19/16 11:40	07/19/16 16:35	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.010	--	1	07/19/16 11:40	07/19/16 16:35	EPA 3005A	1,6020A	AM
Zinc, Total	0.0531		mg/l	0.0200	--	1	07/19/16 11:40	07/19/16 16:35	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1621793
Project Number:	01.0015522.16	**Report Date:**	07/22/16

SAMPLE RESULTS

Lab ID:	L1621793-03	Date Collected:	07/14/16 09:30
Client ID:	EFF	Date Received:	07/14/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0028		mg/l	0.0010	--	1	07/19/16 11:40	07/19/16 16:48	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	07/19/16 11:40	07/19/16 20:08	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.0010	--	1	07/19/16 11:40	07/19/16 16:48	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	07/19/16 11:40	07/19/16 16:48	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	07/19/16 11:40	07/19/16 16:48	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1621793

Project Number: 01.0015522.16 **Report Date:** 07/22/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG914908-1										
Iron, Total	ND		mg/l	0.050	--	1	07/19/16 11:40	07/19/16 18:24	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG914909-1										
Copper, Total	ND		mg/l	0.0010	--	1	07/19/16 11:40	07/19/16 17:07	1,6020A	AM
Lead, Total	ND		mg/l	0.0010	--	1	07/19/16 11:40	07/19/16 17:07	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	07/19/16 11:40	07/19/16 17:07	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	07/19/16 11:40	07/19/16 17:07	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG914908-2								
Iron, Total	93		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG914909-2								
Copper, Total	98		-		80-120	-		
Lead, Total	110		-		80-120	-		
Selenium, Total	111		-		80-120	-		
Zinc, Total	102		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG914908-4 QC Sample: L1621793-01 Client ID: INF												
Iron, Total	0.343	1	1.25	91		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG914909-4 QC Sample: L1621793-01 Client ID: INF												
Copper, Total	0.0524	0.25	0.2909	95		-	-		75-125	-		20
Lead, Total	0.0076	0.51	0.5358	104		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.121	101		-	-		75-125	-		20
Zinc, Total	0.0531	0.5	0.4935	88		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG914908-3 QC Sample: L1621793-01 Client ID: INF						
Iron, Total	0.343	0.369	mg/l	7		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG914909-3 QC Sample: L1621793-01 Client ID: INF						
Copper, Total	0.0524	0.0491	mg/l	6		20
Lead, Total	0.0076	0.0080	mg/l	5		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.0531	0.0468	mg/l	13		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	590		mg/l	10	--	10	-	07/15/16 19:30	1,9251	LA

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

SAMPLE RESULTS

Lab ID: L1621793-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 07/14/16 09:30
Date Received: 07/14/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	590		mg/l	10	--	10	-	07/15/16 19:32	1,9251	LA

Project Name: HP WALTHAM **Lab Number:** L1621793

Project Number: 01.0015522.16 **Report Date:** 07/22/16

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): 01,03 Batch: WG914063-1										
Chloride	ND		mg/l	1.0	--	1	-	07/15/16 19:11	1,9251	LA

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1621793

Report Date: 07/22/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG914063-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

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): 01,03 QC Batch ID: WG914063-4 QC Sample: L1621675-03 Client ID: MS Sample												
Chloride	5.8	20	26	101		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG914063-3 QC Sample: L1621675-03 Client ID: DUP Sample						
Chloride	5.8	6.1	mg/l	5		7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1621793
Report Date: 07/22/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1621793-01A	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-01B	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-01C	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-01D	Plastic 120ml HNO3 preserved	A	<2	2.5	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1621793-01E	Plastic 60ml unpreserved	A	7	2.5	Y	Absent	CL-9251(28)
L1621793-02A	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-02B	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-02C	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-03A	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-03B	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-03C	Vial HCl preserved	A	N/A	2.5	Y	Absent	8260(14)
L1621793-03D	Plastic 120ml HNO3 preserved	A	<2	2.5	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1621793-03E	Plastic 60ml unpreserved	A	8	2.5	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1621793
Project Number:	01.0015522.16	**Report Date:**	07/22/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1621793

Project Number: 01.0015522.16 **Report Date:** 07/22/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1621793
Project Number: 01.0015522.16 **Report Date:** 07/22/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl, Caprolactam
EPA 8270D-SIM Isotope Dilution: SCM: 1,4-Dioxane
SM 2540D: TSS
SM2540G: SCM: Percent Solids
EPA 1631E: SCM: Mercury
EPA 7474: SCM: Mercury
EPA 8081B: NPW and SCM: Mirex, Hexachlorobenzene.
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA 8270-SIM: NPW and SCM: Alkylated PAHs.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene, n-Butylbenzene, n-Propylbenzene, sec-Butylbenzene, tert-Butylbenzene.
Biological Tissue Matrix: ***8270D-SIM; 3050B; 3051A; 7471B; 8081B; 8082A; 6020A:*** Lead***; 8270D:*** bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Pentachlorophenol.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F,**
EPA 353.2: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/14/16

ALPHA Job #: L1621743

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA

Address: 249 Vanderbilt Ave
Norwood Ma 02062

Phone: 781-983-1357

Email: wdavis@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham

Project Location: Waltham Ma.

Project #: 01.0015522.16

Project Manager: J. Colbert

ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☒ 8260 ☐ 624 ☐ 524.2 ☐ 8260-10 L.L.
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Chloride
Metals: Pb, Cu, Fe, Se, Zn

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Chloride	Metals					Sample Comments	TOTAL # BOTTLES
21793-01	INF	7/14/16	930am	GW	BD	X								X	X						5
02	MID	↓	945am	↓	↓	X															3
03	EFF	↓	1000am	↓	↓	X								X	X						5

Container Type	V									P	P				
Preservative	HCL									/	HNO3				

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	7/14/16 10am	[illegible] AAL	7/14/16 13:38
[illegible] AAL	7/14/16 14:15	[illegible]	7/14/16 1415

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1625352
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	1552216
Report Date:	08/19/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1625352-01	INF	WATER	WALTHAM, MA	08/11/16 10:20	08/12/16
L1625352-02	MID	WATER	WALTHAM, MA	08/11/16 10:27	08/12/16
L1625352-03	EFF	WATER	WALTHAM, MA	08/11/16 10:40	08/12/16
L1625352-04	TRIP BLANK	WATER	WALTHAM, MA	08/11/16 00:00	08/12/16

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: HP WALTHAM **Lab Number:** L1625352
Project Number: 1552216 **Report Date:** 08/19/16

Case Narrative (continued)

Sample Receipt

A Trip Blank was received in the laboratory, but not listed on the Chain of Custody, and was not analyzed.

The sample collection times were obtained from the container labels.

Chloride

The WG923271-4 MS recovery (150%), performed on L1625352-01, does not apply because the sample concentration is greater than four times the spike amount added.

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: Cristin Walker

Title: Technical Director/Representative Date: 08/19/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 1552216
Lab Number: L1625352
Report Date: 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/15/16 13:40
Analyst: PD

Date Collected: 08/11/16 10:20
Date Received: 08/12/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	5400		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-01 D Date Collected: 08/11/16 10:20

Client ID: INF Date Received: 08/12/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	96		70-130

Project Name: HP WALTHAM
Project Number: 1552216
Lab Number: L1625352
Report Date: 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/15/16 14:12
Analyst: PD

Date Collected: 08/11/16 10:27
Date Received: 08/12/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.92		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: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-02 Date Collected: 08/11/16 10:27

Client ID: MID Date Received: 08/12/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 1552216
Lab Number: L1625352
Report Date: 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 08/15/16 14:45
Analyst: PD

Date Collected: 08/11/16 10:40
Date Received: 08/12/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-03 Date Collected: 08/11/16 10:40

Client ID: EFF Date Received: 08/12/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/16 12:34
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG922875-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 08/15/16 12:34
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG922875-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG922875-3 WG922875-4								
Methylene chloride	100		94		70-130	6		20
1,1-Dichloroethane	86		79		70-130	8		20
Chloroform	92		85		70-130	8		20
Carbon tetrachloride	91		85		63-132	7		20
1,2-Dichloropropane	81		77		70-130	5		20
Dibromochloromethane	92		86		63-130	7		20
1,1,2-Trichloroethane	98		89		70-130	10		20
2-Chloroethylvinyl ether	86		82		70-130	5		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	100		96		75-130	4		25
Trichlorofluoromethane	99		74		62-150	**29**	Q	20
1,2-Dichloroethane	80		75		70-130	6		20
1,1,1-Trichloroethane	97		88		67-130	10		20
Bromodichloromethane	91		84		67-130	8		20
trans-1,3-Dichloropropene	80		74		70-130	8		20
cis-1,3-Dichloropropene	81		77		70-130	5		20
1,1-Dichloropropene	89		84		70-130	6		20
Bromoform	100		98		54-136	2		20
1,1,2,2-Tetrachloroethane	94		91		67-130	3		20
Benzene	95		88		70-130	8		25
Toluene	100		93		70-130	7		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG922875-3 WG922875-4								
Ethylbenzene	99		92		70-130	7		20
Chloromethane	**38**	Q	**38**	Q	64-130	0		20
Bromomethane	87		80		39-139	8		20
Vinyl chloride	62		58		55-140	7		20
Chloroethane	70		61		55-138	14		20
1,1-Dichloroethene	110		100		61-145	10		25
trans-1,2-Dichloroethene	110		99		70-130	11		20
Trichloroethene	96		90		70-130	6		25
1,2-Dichlorobenzene	100		97		70-130	3		20
1,3-Dichlorobenzene	100		97		70-130	3		20
1,4-Dichlorobenzene	100		96		70-130	4		20
Methyl tert butyl ether	100		92		63-130	8		20
p/m-Xylene	105		95		70-130	10		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	100		98		70-130	2		20
Dibromomethane	97		91		70-130	6		20
1,4-Dichlorobutane	77		74		70-130	4		20
Iodomethane	**33**	Q	**44**	Q	70-130	**29**	Q	20
1,2,3-Trichloropropane	86		83		64-130	4		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	88		98		36-147	11		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG922875-3 WG922875-4								
Acetone	80		68		58-148	16		20
Carbon disulfide	92		82		51-130	11		20
2-Butanone	75		70		63-138	7		20
Vinyl acetate	**60**	Q	**56**	Q	70-130	7		20
4-Methyl-2-pentanone	67		64		59-130	5		20
2-Hexanone	68		64		57-130	6		20
Ethyl methacrylate	86		83		70-130	4		20
Acrolein	78		73		70-130	7		20
Acrylonitrile	82		76		70-130	8		20
Bromochloromethane	120		110		70-130	9		20
Tetrahydrofuran	70		65		58-130	7		20
2,2-Dichloropropane	85		77		63-133	10		20
1,2-Dibromoethane	100		99		70-130	1		20
1,3-Dichloropropane	90		85		70-130	6		20
1,1,1,2-Tetrachloroethane	100		99		64-130	1		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	94		86		53-136	9		20
sec-Butylbenzene	100		95		70-130	5		20
tert-Butylbenzene	110		99		70-130	11		20
o-Chlorotoluene	96		90		70-130	6		20
p-Chlorotoluene	94		88		70-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG922875-3 WG922875-4								
1,2-Dibromo-3-chloropropane	88		89		41-144	1		20
Hexachlorobutadiene	100		96		63-130	4		20
Isopropylbenzene	100		99		70-130	1		20
p-Isopropyltoluene	100		96		70-130	4		20
Naphthalene	88		84		70-130	5		20
n-Propylbenzene	100		92		69-130	8		20
1,2,3-Trichlorobenzene	98		93		70-130	5		20
1,2,4-Trichlorobenzene	100		92		70-130	8		20
1,3,5-Trimethylbenzene	100		93		64-130	7		20
1,3,5-Trichlorobenzene	100		94		70-130	6		20
1,2,4-Trimethylbenzene	100		95		70-130	5		20
trans-1,4-Dichloro-2-butene	**67**	Q	**62**	Q	70-130	8		20
Halothane	110		100		70-130	10		20
Ethyl ether	100		74		59-134	**30**	Q	20
Methyl Acetate	**68**	Q	**62**	Q	70-130	9		20
Ethyl Acetate	74		74		70-130	0		20
Isopropyl Ether	**69**	Q	**64**	Q	70-130	8		20
Cyclohexane	83		77		70-130	8		20
Tert-Butyl Alcohol	88		84		70-130	5		20
Ethyl-Tert-Butyl-Ether	86		80		70-130	7		20
Tertiary-Amyl Methyl Ether	96		91		66-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG922875-3 WG922875-4								
1,4-Dioxane	106		112		56-162	6		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		100		70-130	10		20
Methyl cyclohexane	100		93		70-130	7		20
p-Diethylbenzene	100		93		70-130	7		20
4-Ethyltoluene	100		98		70-130	2		20
1,2,4,5-Tetramethylbenzene	100		98		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	82		81		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	101		101		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1625352
Project Number:	1552216	**Report Date:**	08/19/16

SAMPLE RESULTS

Lab ID:	L1625352-01	Date Collected:	08/11/16 10:20
Client ID:	INF	Date Received:	08/12/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0102		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 16:51	EPA 3005A	1,6020A	TT
Iron, Total	0.162		mg/l	0.050	--	1	08/15/16 07:45	08/15/16 14:22	EPA 3005A	19,200.7	JH
Lead, Total	0.0013		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 16:51	EPA 3005A	1,6020A	TT
Selenium, Total	ND		mg/l	0.005	--	1	08/15/16 07:45	08/17/16 16:51	EPA 3005A	1,6020A	TT
Zinc, Total	0.0115		mg/l	0.0100	--	1	08/15/16 07:45	08/17/16 16:51	EPA 3005A	1,6020A	TT

Project Name:	HP WALTHAM	**Lab Number:**	L1625352
Project Number:	1552216	**Report Date:**	08/19/16

SAMPLE RESULTS

Lab ID:	L1625352-03	Date Collected:	08/11/16 10:40
Client ID:	EFF	Date Received:	08/12/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0020		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 16:54	EPA 3005A	1,6020A	TT
Iron, Total	ND		mg/l	0.050	--	1	08/15/16 07:45	08/15/16 14:18	EPA 3005A	19,200.7	JH
Lead, Total	ND		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 16:54	EPA 3005A	1,6020A	TT
Selenium, Total	ND		mg/l	0.005	--	1	08/15/16 07:45	08/17/16 16:54	EPA 3005A	1,6020A	TT
Zinc, Total	ND		mg/l	0.0100	--	1	08/15/16 07:45	08/17/16 16:54	EPA 3005A	1,6020A	TT

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG922717-1										
Copper, Total	ND		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 15:44	1,6020A	TT
Lead, Total	ND		mg/l	0.0010	--	1	08/15/16 07:45	08/17/16 15:44	1,6020A	TT
Selenium, Total	ND		mg/l	0.005	--	1	08/15/16 07:45	08/17/16 15:44	1,6020A	TT
Zinc, Total	ND		mg/l	0.0100	--	1	08/15/16 07:45	08/17/16 15:44	1,6020A	TT

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG922718-1										
Iron, Total	ND		mg/l	0.050	--	1	08/15/16 07:45	08/15/16 11:55	19,200.7	JH

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG922717-2								
Copper, Total	103		-		80-120	-		
Lead, Total	106		-		80-120	-		
Selenium, Total	115		-		80-120	-		
Zinc, Total	95		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG922718-2								
Iron, Total	95		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG922717-3 WG922717-4 QC Sample: L1625257-05 Client ID: MS Sample												
Copper, Total	ND	0.25	0.2524	101		0.2672	107		75-125	6		20
Lead, Total	ND	0.51	0.5679	111		0.6011	118		75-125	6		20
Selenium, Total	ND	0.12	0.132	110		0.134	112		75-125	2		20
Zinc, Total	ND	0.5	0.4973	99		0.5174	103		75-125	4		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG922718-4 QC Sample: L1625425-01 Client ID: MS Sample												
Iron, Total	0.355	1	1.09	**74**	Q	-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 08/11/16 10:20
Date Received: 08/12/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	580		mg/l	10	--	10	-	08/17/16 17:57	1,9251	MR

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

SAMPLE RESULTS

Lab ID: L1625352-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 08/11/16 10:40
Date Received: 08/12/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	580		mg/l	10	--	10	-	08/17/16 18:03	1,9251	MR

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

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): 01,03 Batch: WG923271-1										
Chloride	ND		mg/l	1.0	--	1	-	08/17/16 17:13	1,9251	MR

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG923271-2								
Chloride	107		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

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): 01,03 QC Batch ID: WG923271-4 QC Sample: L1625352-01 Client ID: INF												
Chloride	580	20	610	**150**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG923271-3 QC Sample: L1625352-01 Client ID: INF						
Chloride	580	590	mg/l	2		7

Project Name: HP WALTHAM
Project Number: 1552216

Lab Number: L1625352
Report Date: 08/19/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1625352-01A	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-01B	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-01C	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-01D	Plastic 250ml HNO3 preserved	A	<2	5.3	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1625352-01E	Plastic 60ml unpreserved	A	7	5.3	Y	Absent	CL-9251(28)
L1625352-02A	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-02B	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-02C	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-03A	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-03B	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-03C	Vial HCl preserved	A	N/A	5.3	Y	Absent	8260(14)
L1625352-03D	Plastic 250ml HNO3 preserved	A	<2	5.3	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1625352-03E	Plastic 60ml unpreserved	A	7	5.3	Y	Absent	CL-9251(28)
L1625352-04A	Vial HCl preserved	A	N/A	5.3	Y	Absent	HOLD-8260(14)
L1625352-04B	Vial HCl preserved	A	N/A	5.3	Y	Absent	HOLD-8260(14)

*Values in parentheses indicate holding time in days

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1625352

Project Number: 1552216 **Report Date:** 08/19/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1625352
Project Number: 1552216 **Report Date:** 08/19/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 8/12/16

ALPHA Job #: L1625352

ALPHA Analytical Laboratories
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: 299 Vanderbilt Ave
Address: Norwood, MA
GZA
Phone: 781 983 1357
Email: william.daue@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham
Project Location: Waltham, MA
Project #: 15522.16
Project Manager: John Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☑ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☑ 8260 ☐ 624 ☐ 524.2 ☐ PID 1,4-D
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
chloride
metals: pb, fe, se, zn, cu

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	chloride	metals					Sample Comments	TOTAL # BOTTLES
25352.01	INF	8/11/16		GW	GWM	X								X	X						5
.02	MID	↓		↓	↓	X															3
.03	EFF					X								X	X						5

Container Type	V										P	P							
Preservative	B										A	C							

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/11/16 1647	[signature]	8/12/16 1150
[signature]	8/12/16 1720	[signature]	8/12/16 17:20

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1628422
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	09/19/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1628422-01	INF	WATER	WALTHAM, MA	09/09/16 10:00	09/09/16
L1628422-02	MID	WATER	WALTHAM, MA	09/09/16 09:45	09/09/16
L1628422-03	EFF	WATER	WALTHAM, MA	09/09/16 09:30	09/09/16

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: Lura L Troy

Title: Technical Director/Representative

Date: 09/19/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1628422
Report Date: 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/16/16 17:31
Analyst: BD

Date Collected: 09/09/16 10:00
Date Received: 09/09/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	4600		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-01 D Date Collected: 09/09/16 10:00

Client ID: INF Date Received: 09/09/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1628422
Report Date: 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/16/16 16:22
Analyst: BD

Date Collected: 09/09/16 09:45
Date Received: 09/09/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-02 Date Collected: 09/09/16 09:45

Client ID: MID Date Received: 09/09/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1628422
Report Date: 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/16/16 16:57
Analyst: BD

Date Collected: 09/09/16 09:30
Date Received: 09/09/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-03 Date Collected: 09/09/16 09:30

Client ID: EFF Date Received: 09/09/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/16/16 11:38
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG933166-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/16/16 11:38
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG933166-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG933166-3 WG933166-4								
Methylene chloride	110		100		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		110		63-132	9		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	83		82		63-130	1		20
1,1,2-Trichloroethane	93		92		70-130	1		20
2-Chloroethylvinyl ether	110		100		70-130	10		20
Tetrachloroethene	98		94		70-130	4		20
Chlorobenzene	100		98		75-130	2		25
Trichlorofluoromethane	97		91		62-150	6		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	110		100		67-130	10		20
Bromodichloromethane	110		110		67-130	0		20
trans-1,3-Dichloropropene	85		84		70-130	1		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
1,1-Dichloropropene	110		100		70-130	10		20
Bromoform	74		74		54-136	0		20
1,1,2,2-Tetrachloroethane	87		87		67-130	0		20
Benzene	110		110		70-130	0		25
Toluene	100		97		70-130	3		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG933166-3 WG933166-4								
Ethylbenzene	100		100		70-130	0		20
Chloromethane	76		72		64-130	5		20
Bromomethane	94		83		39-139	12		20
Vinyl chloride	96		92		55-140	4		20
Chloroethane	110		100		55-138	10		20
1,1-Dichloroethene	93		91		61-145	2		25
trans-1,2-Dichloroethene	110		100		70-130	10		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	92		91		70-130	1		20
1,3-Dichlorobenzene	97		95		70-130	2		20
1,4-Dichlorobenzene	95		94		70-130	1		20
Methyl tert butyl ether	100		100		63-130	0		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,4-Dichlorobutane	96		96		70-130	0		20
Iodomethane	80		80		70-130	0		20
1,2,3-Trichloropropane	88		89		64-130	1		20
Styrene	110		105		70-130	5		20
Dichlorodifluoromethane	65		60		36-147	8		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG933166-3 WG933166-4								
Acetone	74		71		58-148	4		20
Carbon disulfide	87		82		51-130	6		20
2-Butanone	85		91		63-138	7		20
Vinyl acetate	96		97		70-130	1		20
4-Methyl-2-pentanone	76		79		59-130	4		20
2-Hexanone	76		74		57-130	3		20
Ethyl methacrylate	80		80		70-130	0		20
Acrolein	78		78		70-130	0		20
Acrylonitrile	90		94		70-130	4		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	82		84		58-130	2		20
2,2-Dichloropropane	130		130		63-133	0		20
1,2-Dibromoethane	92		93		70-130	1		20
1,3-Dichloropropane	94		93		70-130	1		20
1,1,1,2-Tetrachloroethane	100		97		64-130	3		20
Bromobenzene	98		97		70-130	1		20
n-Butylbenzene	100		96		53-136	4		20
sec-Butylbenzene	100		99		70-130	1		20
tert-Butylbenzene	100		96		70-130	4		20
o-Chlorotoluene	95		100		70-130	5		20
p-Chlorotoluene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG933166-3 WG933166-4								
1,2-Dibromo-3-chloropropane	68		69		41-144	1		20
Hexachlorobutadiene	94		87		63-130	8		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		98		70-130	2		20
Naphthalene	**64**	Q	**66**	Q	70-130	3		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	**63**	Q	**65**	Q	70-130	3		20
1,2,4-Trichlorobenzene	82		82		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	95		90		70-130	5		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
trans-1,4-Dichloro-2-butene	92		89		70-130	3		20
Halothane	100		100		70-130	0		20
Ethyl ether	94		97		59-134	3		20
Methyl Acetate	92		92		70-130	0		20
Ethyl Acetate	93		98		70-130	5		20
Isopropyl Ether	110		110		70-130	0		20
Cyclohexane	100		94		70-130	6		20
Tert-Butyl Alcohol	92		100		70-130	8		20
Ethyl-Tert-Butyl-Ether	110		110		70-130	0		20
Tertiary-Amyl Methyl Ether	100		100		66-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1628422

Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG933166-3 WG933166-4								
1,4-Dioxane	82		78		56-162	5		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	98		93		70-130	5		20
Methyl cyclohexane	100		99		70-130	1		20
p-Diethylbenzene	100		97		70-130	3		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	98		95		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	96		94		70-130
4-Bromofluorobenzene	106		106		70-130
Dibromofluoromethane	102		104		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1628422
Project Number:	01.0015522.16	**Report Date:**	09/19/16

SAMPLE RESULTS

Lab ID:	L1628422-01	Date Collected:	09/09/16 10:00
Client ID:	INF	Date Received:	09/09/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00845		mg/l	0.00100	--	1	09/13/16 08:35	09/13/16 12:56	EPA 3005A	1,6020A	BV
Iron, Total	0.144		mg/l	0.050	--	1	09/13/16 08:35	09/13/16 21:33	EPA 3005A	19,200.7	PS
Lead, Total	0.00119		mg/l	0.00100	--	1	09/13/16 08:35	09/13/16 12:56	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	09/13/16 08:35	09/13/16 12:56	EPA 3005A	1,6020A	BV
Zinc, Total	0.01098		mg/l	0.01000	--	1	09/13/16 08:35	09/13/16 12:56	EPA 3005A	1,6020A	BV

Project Name:	HP WALTHAM	**Lab Number:**	L1628422
Project Number:	01.0015522.16	**Report Date:**	09/19/16

SAMPLE RESULTS

Lab ID:	L1628422-03	Date Collected:	09/09/16 09:30
Client ID:	EFF	Date Received:	09/09/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00281		mg/l	0.00100	--	1	09/13/16 08:35	09/13/16 13:00	EPA 3005A	1,6020A	BV
Iron, Total	ND		mg/l	0.050	--	1	09/13/16 08:35	09/13/16 21:38	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00100	--	1	09/13/16 08:35	09/13/16 13:00	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	09/13/16 08:35	09/13/16 13:00	EPA 3005A	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	09/13/16 08:35	09/13/16 13:00	EPA 3005A	1,6020A	BV

Project Name: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG931259-1										
Iron, Total	ND		mg/l	0.050	--	1	09/13/16 08:35	09/13/16 19:10	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG931262-1										
Copper, Total	ND		mg/l	0.00100	--	1	09/13/16 08:35	09/13/16 12:26	1,6020A	BV
Lead, Total	ND		mg/l	0.00050	--	1	09/13/16 08:35	09/13/16 12:26	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	09/13/16 08:35	09/13/16 12:26	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	09/13/16 08:35	09/13/16 12:26	1,6020A	BV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG931259-2								
Iron, Total	96		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG931262-2								
Copper, Total	104		-		80-120	-		
Lead, Total	110		-		80-120	-		
Selenium, Total	108		-		80-120	-		
Zinc, Total	105		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG931259-4 QC Sample: L1628464-01 Client ID: MS Sample												
Iron, Total	5.50	1	6.21	**71**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG931262-4 QC Sample: L1628464-01 Client ID: MS Sample												
Copper, Total	0.0061	0.25	0.2580	101		-	-		75-125	-		20
Lead, Total	0.00206	0.51	0.5503	107		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.137	114		-	-		75-125	-		20
Zinc, Total	0.0111	0.5	0.5135	100		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG931259-3 QC Sample: L1628464-01 Client ID: DUP Sample						
Iron, Total	5.50	5.61	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG931262-3 QC Sample: L1628464-01 Client ID: DUP Sample						
Lead, Total	0.00206	0.00209	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 09/09/16 10:00
Date Received: 09/09/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	550		mg/l	10	--	10	-	09/13/16 21:26	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

SAMPLE RESULTS

Lab ID: L1628422-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 09/09/16 09:30
Date Received: 09/09/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	560		mg/l	10	--	10	-	09/13/16 21:28	1,9251	ML

Project Name: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

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): 01,03 Batch: WG931519-1										
Chloride	ND		mg/l	1.0	--	1	-	09/13/16 21:05	1,9251	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1628422

Report Date: 09/19/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG931519-2								
Chloride	103		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

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): 01,03 QC Batch ID: WG931519-4 QC Sample: L1628252-01 Client ID: MS Sample												
Chloride	ND	20	21	105		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG931519-3 QC Sample: L1628252-01 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1628422
Report Date: 09/19/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1628422-01A	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-01B	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-01C	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-01D	Plastic 250ml HNO3 preserved	A	<2	5.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1628422-01E	Plastic 60ml unpreserved	A	7	5.8	Y	Absent	CL-9251(28)
L1628422-02A	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-02B	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-02C	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-03A	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-03B	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-03C	Vial HCl preserved	A	N/A	5.8	Y	Absent	8260(14)
L1628422-03D	Plastic 250ml HNO3 preserved	A	<2	5.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1628422-03E	Plastic 60ml unpreserved	A	7	5.8	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1628422
Project Number:	01.0015522.16	**Report Date:**	09/19/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1628422

Project Number: 01.0015522.16 **Report Date:** 09/19/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1628422
Project Number: 01.0015522.16 **Report Date:** 09/19/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 9/9/16

ALPHA Job #: L1628422

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave
Norwood Ma. 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma.
Project #: 01.0015522.16
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2 (80-10 list); SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Chloride; metals: Pb, Se, Cu, Zn, Fe

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Chloride	metals				Sample Comments	TOTAL # BOTTLES
28422.01	INF	9/9/16	1000am	GW	RD	X								X	X					5
.02	MID	↓	945am	GW	RD	X														3
.03	EFF	↓	930am	GW	RD	X								X	X					5
Container Type						V								P	P					
Preservative						HCL								/	HNO3					

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	9/9/16 1350	MCM AA	9/9/16 1730
MCM	9/9/16 1640	[illegible] NL	9/9/16 1640

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1631900
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	John Colbert
Phone:	(781) 278-3700
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	10/13/16

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), ME (MA00030), PA (68-02089), VA (460194), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), USFWS (Permit #LE2069641), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1631900-01	INF	WATER	WALTHAM, MA	10/06/16 00:00	10/06/16
L1631900-02	MID	WATER	WALTHAM, MA	10/06/16 00:00	10/06/16
L1631900-03	EFF	WATER	WALTHAM, MA	10/06/16 00:00	10/06/16

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: Lura L Troy

Title: Technical Director/Representative

Date: 10/13/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1631900
Report Date: 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/11/16 16:36
Analyst: PD

Date Collected: 10/06/16 00:00
Date Received: 10/06/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	6400		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-01 D Date Collected: 10/06/16 00:00
Client ID: INF Date Received: 10/06/16
Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	95		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1631900
Report Date: 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/11/16 16:01
Analyst: PD

Date Collected: 10/06/16 00:00
Date Received: 10/06/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	4.0		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: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-02 Date Collected: 10/06/16 00:00

Client ID: MID Date Received: 10/06/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1631900
Report Date: 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/12/16 13:04
Analyst: PD

Date Collected: 10/06/16 00:00
Date Received: 10/06/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.91		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: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-03 Date Collected: 10/06/16 00:00

Client ID: EFF Date Received: 10/06/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	83		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	91		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/11/16 12:33
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG941196-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/11/16 12:33
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG941196-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	100		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/12/16 12:08
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG941471-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/12/16 12:08
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG941471-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	92		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG941196-3 WG941196-4								
Methylene chloride	93		96		70-130	3		20
1,1-Dichloroethane	96		100		70-130	4		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	96		99		70-130	3		20
Dibromochloromethane	89		91		63-130	2		20
1,1,2-Trichloroethane	97		100		70-130	3		20
2-Chloroethylvinyl ether	89		95		70-130	7		20
Tetrachloroethene	94		97		70-130	3		20
Chlorobenzene	98		100		75-130	2		25
Trichlorofluoromethane	85		88		62-150	3		20
1,2-Dichloroethane	97		100		70-130	3		20
1,1,1-Trichloroethane	99		100		67-130	1		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	89		92		70-130	3		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	95		98		70-130	3		20
Bromoform	86		88		54-136	2		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG941196-3 WG941196-4								
Ethylbenzene	100		100		70-130	0		20
Chloromethane	**48**	Q	**48**	Q	64-130	0		20
Bromomethane	80		94		39-139	16		20
Vinyl chloride	70		69		55-140	1		20
Chloroethane	90		94		55-138	4		20
1,1-Dichloroethene	86		90		61-145	5		25
trans-1,2-Dichloroethene	98		100		70-130	2		20
Trichloroethene	100		100		70-130	0		25
1,2-Dichlorobenzene	97		87		70-130	11		20
1,3-Dichlorobenzene	99		100		70-130	1		20
1,4-Dichlorobenzene	99		100		70-130	1		20
Methyl tert butyl ether	99		100		63-130	1		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	100		105		70-130	5		20
cis-1,2-Dichloroethene	98		100		70-130	2		20
Dibromomethane	99		100		70-130	1		20
1,4-Dichlorobutane	100		110		70-130	10		20
Iodomethane	74		78		70-130	5		20
1,2,3-Trichloropropane	100		100		64-130	0		20
Styrene	105		110		70-130	5		20
Dichlorodifluoromethane	62		70		36-147	12		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG941196-3 WG941196-4								
Acetone	65		71		58-148	9		20
Carbon disulfide	82		100		51-130	20		20
2-Butanone	79		85		63-138	7		20
Vinyl acetate	89		92		70-130	3		20
4-Methyl-2-pentanone	82		82		59-130	0		20
2-Hexanone	70		74		57-130	6		20
Ethyl methacrylate	86		91		70-130	6		20
Acrolein	73		80		70-130	9		20
Acrylonitrile	85		91		70-130	7		20
Bromochloromethane	100		110		70-130	10		20
Tetrahydrofuran	74		80		58-130	8		20
2,2-Dichloropropane	120		120		63-133	0		20
1,2-Dibromoethane	99		100		70-130	1		20
1,3-Dichloropropane	97		100		70-130	3		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	96		98		53-136	2		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	99		100		70-130	1		20
p-Chlorotoluene	110		110		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG941196-3 WG941196-4								
1,2-Dibromo-3-chloropropane	66		84		41-144	**24**	Q	20
Hexachlorobutadiene	81		86		63-130	6		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	76		80		70-130	5		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	**63**	Q	**67**	Q	70-130	6		20
1,2,4-Trichlorobenzene	75		78		70-130	4		20
1,3,5-Trimethylbenzene	100		110		64-130	10		20
1,3,5-Trichlorobenzene	84		88		70-130	5		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	95		100		70-130	5		20
Halothane	95		99		70-130	4		20
Ethyl ether	97		99		59-134	2		20
Methyl Acetate	84		91		70-130	8		20
Ethyl Acetate	85		90		70-130	6		20
Isopropyl Ether	93		97		70-130	4		20
Cyclohexane	84		89		70-130	6		20
Tert-Butyl Alcohol	106		116		70-130	9		20
Ethyl-Tert-Butyl-Ether	100		110		70-130	10		20
Tertiary-Amyl Methyl Ether	97		100		66-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1631900

Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG941196-3 WG941196-4								
1,4-Dioxane	94		104		56-162	10		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	87		88		70-130	1		20
Methyl cyclohexane	87		91		70-130	4		20
p-Diethylbenzene	99		100		70-130	1		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	81		100		70-130	**21**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		103		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	113		109		70-130
Dibromofluoromethane	101		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG941471-3 WG941471-4								
Methylene chloride	89		100		70-130	12		20
1,1-Dichloroethane	96		94		70-130	2		20
Chloroform	97		98		70-130	1		20
Carbon tetrachloride	89		88		63-132	1		20
1,2-Dichloropropane	91		92		70-130	1		20
Dibromochloromethane	88		93		63-130	6		20
1,1,2-Trichloroethane	93		97		70-130	4		20
Tetrachloroethene	93		92		70-130	1		20
Chlorobenzene	92		94		75-130	2		25
Trichlorofluoromethane	87		84		62-150	4		20
1,2-Dichloroethane	85		86		70-130	1		20
1,1,1-Trichloroethane	97		96		67-130	1		20
Bromodichloromethane	92		93		67-130	1		20
trans-1,3-Dichloropropene	85		88		70-130	3		20
cis-1,3-Dichloropropene	85		87		70-130	2		20
1,1-Dichloropropene	96		94		70-130	2		20
Bromoform	93		94		54-136	1		20
1,1,2,2-Tetrachloroethane	96		100		67-130	4		20
Benzene	99		98		70-130	1		25
Toluene	100		100		70-130	0		25
Ethylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG941471-3 WG941471-4								
Chloromethane	80		78		64-130	3		20
Bromomethane	54		66		39-139	20		20
Vinyl chloride	84		80		55-140	5		20
Chloroethane	96		90		55-138	6		20
1,1-Dichloroethene	94		91		61-145	3		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	99		98		70-130	1		25
1,2-Dichlorobenzene	91		93		70-130	2		20
1,3-Dichlorobenzene	95		95		70-130	0		20
1,4-Dichlorobenzene	90		92		70-130	2		20
Methyl tert butyl ether	86		90		63-130	5		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	99		100		70-130	1		20
Dibromomethane	89		91		70-130	2		20
1,4-Dichlorobutane	97		98		70-130	1		20
Iodomethane	80		**69**	Q	70-130	15		20
1,2,3-Trichloropropane	97		97		64-130	0		20
Styrene	95		100		70-130	5		20
Dichlorodifluoromethane	78		75		36-147	4		20
Acetone	98		96		58-148	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG941471-3 WG941471-4								
Carbon disulfide	96		93		51-130	3		20
2-Butanone	85		94		63-138	10		20
Vinyl acetate	95		95		70-130	0		20
4-Methyl-2-pentanone	72		76		59-130	5		20
2-Hexanone	66		69		57-130	4		20
Ethyl methacrylate	73		76		70-130	4		20
Acrolein	72		71		70-130	1		20
Acrylonitrile	87		90		70-130	3		20
Bromochloromethane	90		92		70-130	2		20
Tetrahydrofuran	84		82		58-130	2		20
2,2-Dichloropropane	90		92		63-133	2		20
1,2-Dibromoethane	89		93		70-130	4		20
1,3-Dichloropropane	90		94		70-130	4		20
1,1,1,2-Tetrachloroethane	86		89		64-130	3		20
Bromobenzene	97		98		70-130	1		20
n-Butylbenzene	94		92		53-136	2		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	92		89		70-130	3		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	110		110		70-130	0		20
1,2-Dibromo-3-chloropropane	82		88		41-144	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG941471-3 WG941471-4								
Hexachlorobutadiene	100		100		63-130	0		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	**68**	Q	**69**	Q	70-130	1		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	77		78		70-130	1		20
1,2,4-Trichlorobenzene	71		73		70-130	3		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,3,5-Trichlorobenzene	98		97		70-130	1		20
1,2,4-Trimethylbenzene	100		110		70-130	10		20
trans-1,4-Dichloro-2-butene	93		94		70-130	1		20
Halothane	98		98		70-130	0		20
Ethyl ether	86		85		59-134	1		20
Methyl Acetate	95		97		70-130	2		20
Ethyl Acetate	87		87		70-130	0		20
Isopropyl Ether	96		97		70-130	1		20
Cyclohexane	89		85		70-130	5		20
Tert-Butyl Alcohol	**50**	Q	**58**	Q	70-130	15		20
Ethyl-Tert-Butyl-Ether	92		94		70-130	2		20
Tertiary-Amyl Methyl Ether	91		94		66-130	3		20
1,4-Dioxane	82		84		56-162	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG941471-3 WG941471-4								
1,1,2-Trichloro-1,2,2-Trifluoroethane	85		80		70-130	6		20
Methyl cyclohexane	88		84		70-130	5		20
p-Diethylbenzene	92		91		70-130	1		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	93		91		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	78		78		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	107		108		70-130
Dibromofluoromethane	88		88		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1631900
Project Number:	01.0015522.16	**Report Date:**	10/13/16

SAMPLE RESULTS

Lab ID:	L1631900-01	Date Collected:	10/06/16 00:00
Client ID:	INF	Date Received:	10/06/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0550		mg/l	0.0010	--	1	10/10/16 09:50	10/11/16 16:26	EPA 3005A	1,6020A	AM
Iron, Total	1.30		mg/l	0.050	--	1	10/10/16 09:50	10/10/16 15:35	EPA 3005A	19,200.7	PS
Lead, Total	0.0078		mg/l	0.0010	--	1	10/10/16 09:50	10/11/16 16:26	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	10/10/16 09:50	10/11/16 16:26	EPA 3005A	1,6020A	AM
Zinc, Total	0.0573		mg/l	0.0100	--	1	10/10/16 09:50	10/11/16 16:26	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1631900
Project Number:	01.0015522.16	**Report Date:**	10/13/16

SAMPLE RESULTS

Lab ID:	L1631900-03	Date Collected:	10/06/16 00:00
Client ID:	EFF	Date Received:	10/06/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0032		mg/l	0.0010	--	1	10/10/16 09:50	10/11/16 16:29	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	10/10/16 09:50	10/10/16 15:40	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.0010	--	1	10/10/16 09:50	10/11/16 16:29	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	10/10/16 09:50	10/11/16 16:29	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	10/10/16 09:50	10/11/16 16:29	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG940447-1										
Copper, Total	ND		mg/l	0.0010	--	1	10/10/16 09:50	10/11/16 09:05	1,6020A	AM
Lead, Total	ND		mg/l	0.0005	--	1	10/10/16 09:50	10/11/16 09:05	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	10/10/16 09:50	10/11/16 09:05	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	10/10/16 09:50	10/11/16 09:05	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG940449-1										
Iron, Total	ND		mg/l	0.050	--	1	10/10/16 09:50	10/10/16 15:11	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG940447-2								
Copper, Total	108		-		80-120	-		
Lead, Total	113		-		80-120	-		
Selenium, Total	92		-		80-120	-		
Zinc, Total	102		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG940449-2								
Iron, Total	89		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG940447-4 QC Sample: L1631700-02 Client ID: MS Sample												
Copper, Total	ND	0.25	0.2461	98		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5449	107		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.047	**0**	Q	-	-		75-125	-		20
Zinc, Total	0.3394	0.5	0.8721	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG940449-4 QC Sample: L1631700-02 Client ID: MS Sample												
Iron, Total	1.50	1	2.44	94		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG940447-3 QC Sample: L1631700-02 Client ID: DUP Sample						
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.3394	0.3770	mg/l	10		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG940449-3 QC Sample: L1631700-02 Client ID: DUP Sample						
Iron, Total	1.50	1.50	mg/l	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 10/06/16 00:00
Date Received: 10/06/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	550		mg/l	10	--	10	-	10/12/16 17:22	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

SAMPLE RESULTS

Lab ID: L1631900-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 10/06/16 00:00
Date Received: 10/06/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	580		mg/l	10	--	10	-	10/12/16 17:27	1,9251	ML

Project Name: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

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): 01,03 Batch: WG941238-1										
Chloride	ND		mg/l	1.0	--	1	-	10/12/16 17:12	1,9251	ML

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG941238-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

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): 01,03 QC Batch ID: WG941238-4 QC Sample: L1632018-01 Client ID: MS Sample												
Chloride	110	20	120	**50**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG941238-3 QC Sample: L1632018-01 Client ID: DUP Sample						
Chloride	110	100	mg/l	**10**	Q	7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1631900
Report Date: 10/13/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1631900-01A	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-01B	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-01C	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-01D	Plastic 250ml HNO3 preserved	A	<2	16.6	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1631900-01E	Plastic 60ml unpreserved	A	7	16.6	Y	Absent	CL-9251(28)
L1631900-02A	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-02B	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-02C	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-03A	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-03B	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-03C	Vial HCl preserved	A	N/A	16.6	Y	Absent	8260(14)
L1631900-03D	Plastic 250ml HNO3 preserved	A	<2	16.6	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1631900-03E	Plastic 60ml unpreserved	A	7	16.6	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1631900
Project Number:	01.0015522.16	**Report Date:**	10/13/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1631900

Project Number: 01.0015522.16 **Report Date:** 10/13/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1631900
Project Number: 01.0015522.16 **Report Date:** 10/13/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 10/6/16

ALPHA Job #: L1631900

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.16
Project Manager: J. Colbert
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: GZA
Address: 249 Vanderbilt Ave Norwood Ma. 02062
Phone: 781-987-1357
Email: wdavis@gza.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2 (8010 List)
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Metals: Pb, Cu, Fe, Se, Zn
Chloride

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: 8260	SVOC: ABN	SVOC: PAH	METALS: MCP 13	METALS: MCP 14	METALS: RCRA5	METALS: RCRA8	EPH: Ranges & Targets	VPH: Ranges & Targets	PCB	TPH: Quant Only	Metals: Pb, Cu, Fe, Se, Zn	Chloride				Sample Comments	TOTAL # BOTTLES
31900.01	INF	10/6/16		GW	BN	X										X	X						5
.02	MID	↓		↓	↓	X																	3
.03	EFF	↓		↓	↓	X										X	X						5
Container Type						V										P	P						
Preservative						HCL										NaOH	✓						

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Bill [illegible]	10/6/16 1101am	[illegible]	10/6/16 11:01

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1636726
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	11/18/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1636726-01	INF	WATER	WALTHAM, MA	11/10/16 09:40	11/11/16
L1636726-02	MID	WATER	WALTHAM, MA	11/10/16 10:00	11/11/16
L1636726-03	EFF	WATER	WALTHAM, MA	11/10/16 10:20	11/11/16

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: 11/18/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/16 13:51
Analyst: KD

Date Collected: 11/10/16 09:40
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	59		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	8200		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1636726

Project Number: 01.0015522.16 **Report Date:** 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-01 D Date Collected: 11/10/16 09:40

Client ID: INF Date Received: 11/11/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/16 14:25
Analyst: KD

Date Collected: 11/10/16 10:00
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.88		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: HP WALTHAM **Lab Number:** L1636726

Project Number: 01.0015522.16 **Report Date:** 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-02 Date Collected: 11/10/16 10:00

Client ID: MID Date Received: 11/11/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	102		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/16 15:00
Analyst: KD

Date Collected: 11/10/16 10:20
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM **Lab Number:** L1636726

Project Number: 01.0015522.16 **Report Date:** 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-03 Date Collected: 11/10/16 10:20

Client ID: EFF Date Received: 11/11/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	100		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/16 11:32
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG952218-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/16 11:32
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG952218-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	2.7	--
Naphthalene	ND		ug/l	2.5	--

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND	ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG952218-3 WG952218-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	90		86		63-132	5		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	98		96		63-130	2		20
1,1,2-Trichloroethane	99		96		70-130	3		20
2-Chloroethylvinyl ether	70		**67**	Q	70-130	4		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	120		110		62-150	9		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	95		93		67-130	2		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	**66**	Q	**67**	Q	70-130	2		20
cis-1,3-Dichloropropene	83		83		70-130	0		20
1,1-Dichloropropene	110		100		70-130	10		20
Bromoform	74		75		54-136	1		20
1,1,2,2-Tetrachloroethane	96		93		67-130	3		20
Benzene	110		110		70-130	0		25
Toluene	110		100		70-130	10		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG952218-3 WG952218-4								
Ethylbenzene	110		110		70-130	0		20
Chloromethane	93		90		64-130	3		20
Bromomethane	**140**	Q	**140**	Q	39-139	0		20
Vinyl chloride	120		110		55-140	9		20
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	110		110		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	100		99		70-130	1		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	80		84		63-130	5		20
p/m-Xylene	115		110		70-130	4		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,4-Dichlorobutane	97		93		70-130	4		20
Iodomethane	77		76		70-130	1		20
1,2,3-Trichloropropane	92		90		64-130	2		20
Styrene	115		110		70-130	4		20
Dichlorodifluoromethane	140		130		36-147	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG952218-3 WG952218-4								
Acetone	100		100		58-148	0		20
Carbon disulfide	100		97		51-130	3		20
2-Butanone	110		100		63-138	10		20
Vinyl acetate	81		86		70-130	6		20
4-Methyl-2-pentanone	86		87		59-130	1		20
2-Hexanone	97		92		57-130	5		20
Ethyl methacrylate	80		83		70-130	4		20
Acrolein	100		100		70-130	0		20
Acrylonitrile	110		110		70-130	0		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	110		110		58-130	0		20
2,2-Dichloropropane	**53**	Q	**55**	Q	63-133	4		20
1,2-Dibromoethane	94		95		70-130	1		20
1,3-Dichloropropane	98		100		70-130	2		20
1,1,1,2-Tetrachloroethane	90		90		64-130	0		20
Bromobenzene	99		96		70-130	3		20
n-Butylbenzene	110		110		53-136	0		20
sec-Butylbenzene	110		100		70-130	10		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG952218-3 WG952218-4								
1,2-Dibromo-3-chloropropane	72		71		41-144	1		20
Hexachlorobutadiene	100		96		63-130	4		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	110		100		70-130	10		20
Naphthalene	100		100		70-130	0		20
n-Propylbenzene	110		100		69-130	10		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trichlorobenzene	93		92		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	100		98		70-130	2		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
trans-1,4-Dichloro-2-butene	85		82		70-130	4		20
Halothane	100		100		70-130	0		20
Ethyl ether	110		110		59-134	0		20
Methyl Acetate	100		110		70-130	10		20
Ethyl Acetate	120		120		70-130	0		20
Isopropyl Ether	120		120		70-130	0		20
Cyclohexane	120		120		70-130	0		20
Tert-Butyl Alcohol	**62**	Q	72		70-130	15		20
Ethyl-Tert-Butyl-Ether	**58**	Q	**63**	Q	70-130	8		20
Tertiary-Amyl Methyl Ether	**64**	Q	68		66-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1636726

Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG952218-3 WG952218-4								
1,4-Dioxane	132		128		56-162	3		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	120		120		70-130	0		20
Methyl cyclohexane	120		110		70-130	9		20
p-Diethylbenzene	120		120		70-130	0		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		108		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	95		93		70-130
Dibromofluoromethane	103		102		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1636726
Project Number:	01.0015522.16	**Report Date:**	11/18/16

SAMPLE RESULTS

Lab ID:	L1636726-01	Date Collected:	11/10/16 09:40
Client ID:	INF	Date Received:	11/11/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0375		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 10:45	EPA 3005A	1,6020A	AM
Iron, Total	1.41		mg/l	0.050	--	1	11/15/16 19:06	11/17/16 13:02	EPA 3005A	19,200.7	PS
Lead, Total	0.0069		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 10:45	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	11/15/16 19:06	11/16/16 10:45	EPA 3005A	1,6020A	AM
Zinc, Total	0.0786		mg/l	0.0100	--	1	11/15/16 19:06	11/16/16 10:45	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 11/10/16 10:20
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0026		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 10:48	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	11/15/16 19:06	11/17/16 13:21	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 10:48	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	11/15/16 19:06	11/16/16 10:48	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	11/15/16 19:06	11/16/16 10:48	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1636726

Project Number: 01.0015522.16 **Report Date:** 11/18/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG952623-1										
Copper, Total	ND		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 08:54	1,6020A	AM
Lead, Total	ND		mg/l	0.0010	--	1	11/15/16 19:06	11/16/16 08:54	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	11/15/16 19:06	11/16/16 08:54	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	11/15/16 19:06	11/16/16 08:54	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG953145-1										
Iron, Total	ND		mg/l	0.050	--	1	11/15/16 19:06	11/17/16 12:24	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1636726

Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG952623-2								
Copper, Total	110		-		80-120	-		
Lead, Total	108		-		80-120	-		
Selenium, Total	113		-		80-120	-		
Zinc, Total	110		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG953145-2								
Iron, Total	92		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG952623-3 WG952623-4 QC Sample: L1636608-02 Client ID: MS Sample												
Copper, Total	0.0035	0.25	0.2848	112		0.2682	106		75-125	6		20
Lead, Total	ND	0.51	0.5379	105		0.5508	108		75-125	2		20
Selenium, Total	0.008	0.12	0.121	94		0.157	124		75-125	**26**	Q	20
Zinc, Total	ND	0.5	0.5440	109		0.5507	110		75-125	1		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG953145-3 WG953145-4 QC Sample: L1600011-87 Client ID: MS Sample												
Iron, Total	0.286	1	1.18	89		1.18	89		75-125	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 11/10/16 09:40
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	520		mg/l	10	--	10	-	11/11/16 22:48	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

SAMPLE RESULTS

Lab ID: L1636726-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 11/10/16 10:20
Date Received: 11/11/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	11/11/16 22:50	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1636726
Report Date: 11/18/16

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): 01,03 Batch: WG951626-1										
Chloride	ND		mg/l	1.0	--	1	-	11/11/16 22:01	1,9251	ML

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG951626-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

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): 01,03 QC Batch ID: WG951626-4 QC Sample: L1636611-02 Client ID: MS Sample												
Chloride	3.4	20	24	103		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG951626-3 QC Sample: L1636611-02 Client ID: DUP Sample						
Chloride	3.4	3.6	mg/l	6		7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1636726
Report Date: 11/18/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1636726-01A	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-01B	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-01C	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-01D	Plastic 250ml HNO3 preserved	A	<2	2.3	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1636726-01E	Plastic 60ml unpreserved	A	7	2.3	Y	Absent	CL-9251(28)
L1636726-02A	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-02B	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-02C	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-03A	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-03B	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-03C	Vial HCl preserved	A	N/A	2.3	Y	Absent	8260(14)
L1636726-03D	Plastic 250ml HNO3 preserved	A	<2	2.3	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1636726-03E	Plastic 60ml unpreserved	A	7	2.3	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1636726
Project Number:	01.0015522.16	**Report Date:**	11/18/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1636726

Project Number: 01.0015522.16 **Report Date:** 11/18/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1636726
Project Number: 01.0015522.16 **Report Date:** 11/18/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL
World Class Chemistry

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 11/11/16

ALPHA Job #: L1636726

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave
Norwood Ma. 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma.
Project #: 01.0015522.16
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods
☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ________ Criteria ________

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2 (8010 List)	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Metals Pb, Fe, Zn, Se, Cu	Chloride	Sample Comments	TOTAL # BOTTLES
36726-01	INF	11/10/16	940am	GW	BD	X								X	X		5
02	MID	↓	1000am	↓	BD	X											3
03	EFF	↓	1020am	↓	BD	X								X	X		5
Container Type						V								P	P		
Preservative						HCL								HNO3	/		

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	11/10/16 230pm	MSM AAL	11/11/16 1059
MSM	11/11/16 1207	AAL	11/11/16 1204

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1639882
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	12/15/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1639882-01	INF	WATER	WALTHAM, MA	12/08/16 10:56	12/08/16
L1639882-02	MID	WATER	WALTHAM, MA	12/08/16 10:45	12/08/16
L1639882-03	EFF	WATER	WALTHAM, MA	12/08/16 10:30	12/08/16

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: Melissa Cripps

Title: Technical Director/Representative

Date: 12/15/16

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1639882
Report Date: 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/13/16 18:17
Analyst: PD

Date Collected: 12/08/16 10:56
Date Received: 12/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	52		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	7800		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-01 D Date Collected: 12/08/16 10:56

Client ID: INF Date Received: 12/08/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1639882
Report Date: 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/13/16 18:52
Analyst: PD

Date Collected: 12/08/16 10:45
Date Received: 12/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	6.1		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: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-02 Date Collected: 12/08/16 10:45

Client ID: MID Date Received: 12/08/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	100		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1639882
Report Date: 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 12/14/16 11:41
Analyst: PK

Date Collected: 12/08/16 10:30
Date Received: 12/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.85		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: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-03 Date Collected: 12/08/16 10:30

Client ID: EFF Date Received: 12/08/16

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/13/16 11:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG960976-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/13/16 11:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG960976-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	101		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/14/16 09:47
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG961283-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 12/14/16 09:47
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG961283-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG960976-3 WG960976-4								
Methylene chloride	100		99		70-130	1		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	96		96		63-132	0		20
1,2-Dichloropropane	93		95		70-130	2		20
Dibromochloromethane	95		97		63-130	2		20
1,1,2-Trichloroethane	93		96		70-130	3		20
2-Chloroethylvinyl ether	**64**	Q	**64**	Q	70-130	0		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	99		100		67-130	1		20
Bromodichloromethane	99		100		67-130	1		20
trans-1,3-Dichloropropene	77		80		70-130	4		20
cis-1,3-Dichloropropene	84		86		70-130	2		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	75		77		54-136	3		20
1,1,2,2-Tetrachloroethane	91		94		67-130	3		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG960976-3 WG960976-4								
Ethylbenzene	110		110		70-130	0		20
Chloromethane	96		93		64-130	3		20
Bromomethane	**150**	Q	**140**	Q	39-139	7		20
Vinyl chloride	110		110		55-140	0		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	100		99		61-145	1		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		25
1,2-Dichlorobenzene	100		99		70-130	1		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	86		89		63-130	3		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	105		110		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	99		100		70-130	1		20
1,4-Dichlorobutane	97		100		70-130	3		20
Iodomethane	**66**	Q	72		70-130	9		20
1,2,3-Trichloropropane	92		92		64-130	0		20
Styrene	110		110		70-130	0		20
Dichlorodifluoromethane	120		120		36-147	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG960976-3 WG960976-4								
Acetone	130		93		58-148	**33**	Q	20
Carbon disulfide	96		90		51-130	6		20
2-Butanone	100		97		63-138	3		20
Vinyl acetate	91		97		70-130	6		20
4-Methyl-2-pentanone	81		82		59-130	1		20
2-Hexanone	94		95		57-130	1		20
Ethyl methacrylate	81		89		70-130	9		20
Acrolein	83		89		70-130	7		20
Acrylonitrile	100		100		70-130	0		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	110		100		58-130	10		20
2,2-Dichloropropane	73		73		63-133	0		20
1,2-Dibromoethane	90		94		70-130	4		20
1,3-Dichloropropane	94		97		70-130	3		20
1,1,1,2-Tetrachloroethane	93		94		64-130	1		20
Bromobenzene	96		98		70-130	2		20
n-Butylbenzene	120		110		53-136	9		20
sec-Butylbenzene	110		110		70-130	0		20
tert-Butylbenzene	110		100		70-130	10		20
o-Chlorotoluene	110		100		70-130	10		20
p-Chlorotoluene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG960976-3 WG960976-4								
1,2-Dibromo-3-chloropropane	70		71		41-144	1		20
Hexachlorobutadiene	99		97		63-130	2		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	92		92		70-130	0		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	85		87		70-130	2		20
1,2,4-Trichlorobenzene	87		87		70-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,3,5-Trichlorobenzene	98		97		70-130	1		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	86		90		70-130	5		20
Halothane	96		97		70-130	1		20
Ethyl ether	100		96		59-134	4		20
Methyl Acetate	100		110		70-130	10		20
Ethyl Acetate	120		120		70-130	0		20
Isopropyl Ether	120		120		70-130	0		20
Cyclohexane	110		110		70-130	0		20
Tert-Butyl Alcohol	**60**	Q	72		70-130	18		20
Ethyl-Tert-Butyl-Ether	85		86		70-130	1		20
Tertiary-Amyl Methyl Ether	82		82		66-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG960976-3 WG960976-4								
1,4-Dioxane	100		114		56-162	13		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		110		70-130	0		20
Methyl cyclohexane	110		110		70-130	0		20
p-Diethylbenzene	120		120		70-130	0		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114		115		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	102		103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG961283-3 WG961283-4								
Methylene chloride	94		90		70-130	4		20
1,1-Dichloroethane	94		92		70-130	2		20
Chloroform	95		91		70-130	4		20
Carbon tetrachloride	98		95		63-132	3		20
1,2-Dichloropropane	89		87		70-130	2		20
Dibromochloromethane	90		87		63-130	3		20
1,1,2-Trichloroethane	84		84		70-130	0		20
2-Chloroethylvinyl ether	**38**	Q	**40**	Q	70-130	5		20
Tetrachloroethene	97		93		70-130	4		20
Chlorobenzene	92		88		75-130	4		25
Trichlorofluoromethane	94		90		62-150	4		20
1,2-Dichloroethane	95		92		70-130	3		20
1,1,1-Trichloroethane	98		96		67-130	2		20
Bromodichloromethane	92		90		67-130	2		20
trans-1,3-Dichloropropene	81		79		70-130	3		20
cis-1,3-Dichloropropene	92		90		70-130	2		20
1,1-Dichloropropene	97		95		70-130	2		20
Bromoform	84		81		54-136	4		20
1,1,2,2-Tetrachloroethane	84		82		67-130	2		20
Benzene	95		92		70-130	3		25
Toluene	92		89		70-130	3		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG961283-3 WG961283-4								
Ethylbenzene	96		92		70-130	4		20
Chloromethane	84		77		64-130	9		20
Bromomethane	64		69		39-139	8		20
Vinyl chloride	90		85		55-140	6		20
Chloroethane	100		95		55-138	5		20
1,1-Dichloroethene	97		94		61-145	3		25
trans-1,2-Dichloroethene	96		93		70-130	3		20
Trichloroethene	94		91		70-130	3		25
1,2-Dichlorobenzene	91		88		70-130	3		20
1,3-Dichlorobenzene	93		90		70-130	3		20
1,4-Dichlorobenzene	91		87		70-130	4		20
Methyl tert butyl ether	95		93		63-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	95		92		70-130	3		20
Dibromomethane	90		88		70-130	2		20
1,4-Dichlorobutane	86		84		70-130	2		20
Iodomethane	**41**	Q	**45**	Q	70-130	9		20
1,2,3-Trichloropropane	88		85		64-130	3		20
Styrene	95		95		70-130	0		20
Dichlorodifluoromethane	98		96		36-147	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG961283-3 WG961283-4								
Acetone	100		81		58-148	**21**	Q	20
Carbon disulfide	98		93		51-130	5		20
2-Butanone	87		80		63-138	8		20
Vinyl acetate	91		89		70-130	2		20
4-Methyl-2-pentanone	70		70		59-130	0		20
2-Hexanone	65		63		57-130	3		20
Ethyl methacrylate	71		73		70-130	3		20
Acrolein	81		80		70-130	1		20
Acrylonitrile	86		86		70-130	0		20
Bromochloromethane	95		93		70-130	2		20
Tetrahydrofuran	84		81		58-130	4		20
2,2-Dichloropropane	110		100		63-133	10		20
1,2-Dibromoethane	89		88		70-130	1		20
1,3-Dichloropropane	89		87		70-130	2		20
1,1,1,2-Tetrachloroethane	93		88		64-130	6		20
Bromobenzene	92		89		70-130	3		20
n-Butylbenzene	99		93		53-136	6		20
sec-Butylbenzene	100		97		70-130	3		20
tert-Butylbenzene	99		94		70-130	5		20
o-Chlorotoluene	98		81		70-130	19		20
p-Chlorotoluene	97		92		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG961283-3 WG961283-4								
1,2-Dibromo-3-chloropropane	68		69		41-144	1		20
Hexachlorobutadiene	96		91		63-130	5		20
Isopropylbenzene	100		98		70-130	2		20
p-Isopropyltoluene	91		86		70-130	6		20
Naphthalene	**62**	Q	**66**	Q	70-130	6		20
n-Propylbenzene	100		98		69-130	2		20
1,2,3-Trichlorobenzene	74		78		70-130	5		20
1,2,4-Trichlorobenzene	82		82		70-130	0		20
1,3,5-Trimethylbenzene	100		95		64-130	5		20
1,3,5-Trichlorobenzene	96		92		70-130	4		20
1,2,4-Trimethylbenzene	100		96		70-130	4		20
trans-1,4-Dichloro-2-butene	**68**	Q	**66**	Q	70-130	3		20
Halothane	92		89		70-130	3		20
Ethyl ether	89		86		59-134	3		20
Methyl Acetate	84		85		70-130	1		20
Ethyl Acetate	87		90		70-130	3		20
Isopropyl Ether	96		94		70-130	2		20
Cyclohexane	100		99		70-130	1		20
Tert-Butyl Alcohol	90		96		70-130	6		20
Ethyl-Tert-Butyl-Ether	98		97		70-130	1		20
Tertiary-Amyl Methyl Ether	88		87		66-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1639882

Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG961283-3 WG961283-4								
1,4-Dioxane	98		114		56-162	15		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		100		70-130	0		20
Methyl cyclohexane	99		96		70-130	3		20
p-Diethylbenzene	99		92		70-130	7		20
4-Ethyltoluene	110		100		70-130	10		20
1,2,4,5-Tetramethylbenzene	95		91		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		104		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	102		103		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1639882
Project Number:	01.0015522.16	**Report Date:**	12/15/16

SAMPLE RESULTS

Lab ID:	L1639882-01	Date Collected:	12/08/16 10:56
Client ID:	INF	Date Received:	12/08/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0325		mg/l	0.0010	--	1	12/14/16 06:00	12/14/16 11:14	EPA 3005A	1,6020A	AM
Iron, Total	0.765		mg/l	0.050	--	1	12/14/16 06:00	12/14/16 19:49	EPA 3005A	19,200.7	PS
Lead, Total	0.0044		mg/l	0.0005	--	1	12/14/16 06:00	12/14/16 11:14	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	12/14/16 06:00	12/14/16 11:14	EPA 3005A	1,6020A	AM
Zinc, Total	0.0562		mg/l	0.0100	--	1	12/14/16 06:00	12/14/16 11:14	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1639882
Project Number:	01.0015522.16	**Report Date:**	12/15/16

SAMPLE RESULTS

Lab ID:	L1639882-03	Date Collected:	12/08/16 10:30
Client ID:	EFF	Date Received:	12/08/16
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0033		mg/l	0.0010	--	1	12/14/16 06:00	12/14/16 11:17	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	12/14/16 06:00	12/14/16 18:33	EPA 3005A	19,200.7	PS
Lead, Total	0.0012		mg/l	0.0005	--	1	12/14/16 06:00	12/14/16 11:17	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	12/14/16 06:00	12/14/16 11:17	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	12/14/16 06:00	12/14/16 11:17	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG960950-1										
Iron, Total	ND		mg/l	0.050	--	1	12/14/16 06:00	12/14/16 17:40	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG960952-1										
Copper, Total	ND		mg/l	0.0010	--	1	12/14/16 06:00	12/14/16 10:56	1,6020A	AM
Lead, Total	ND		mg/l	0.0005	--	1	12/14/16 06:00	12/14/16 10:56	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	12/14/16 06:00	12/14/16 10:56	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	12/14/16 06:00	12/14/16 10:56	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG960950-2								
Iron, Total	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG960952-2								
Copper, Total	106		-		80-120	-		
Lead, Total	104		-		80-120	-		
Selenium, Total	95		-		80-120	-		
Zinc, Total	92		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960950-3 QC Sample: L1639882-03 Client ID: EFF												
Iron, Total	ND	1	0.935	94		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960950-7 QC Sample: L1640318-01 Client ID: MS Sample												
Iron, Total	0.495	1	1.42	92		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960952-3 QC Sample: L1640318-01 Client ID: MS Sample												
Copper, Total	0.0027	0.25	0.2762	109		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5223	102		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.134	112		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.4999	100		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960950-4 QC Sample: L1639882-03 Client ID: EFF						
Iron, Total	ND	0.066	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960950-8 QC Sample: L1640318-01 Client ID: DUP Sample						
Iron, Total	0.495	0.510	mg/l	3		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG960952-4 QC Sample: L1640318-01 Client ID: DUP Sample						
Copper, Total	0.0027	0.0030	mg/l	10		20
Lead, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 12/08/16 10:56
Date Received: 12/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	500		mg/l	10	--	10	-	12/10/16 11:04	1,9251	MR

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

SAMPLE RESULTS

Lab ID: L1639882-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 12/08/16 10:30
Date Received: 12/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	500		mg/l	10	--	10	-	12/10/16 11:06	1,9251	MR

Project Name: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

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): 01,03 Batch: WG959916-1										
Chloride	ND		mg/l	1.0	--	1	-	12/10/16 09:45	1,9251	MR

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG959916-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

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): 01,03 QC Batch ID: WG959916-4 QC Sample: L1639879-03 Client ID: MS Sample												
Chloride	260	20	270	**50**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG959916-3 QC Sample: L1639879-03 Client ID: DUP Sample						
Chloride	260	260	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1639882
Report Date: 12/15/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1639882-01A	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-01B	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-01C	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-01D	Plastic 60ml unpreserved	A	7	2.8	Y	Absent	CL-9251(28)
L1639882-01E	Plastic 250ml HNO3 preserved	A	<2	2.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1639882-02A	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-02B	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-02C	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-03A	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-03B	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-03C	Vial HCl preserved	A	N/A	2.8	Y	Absent	8260(14)
L1639882-03D	Plastic 60ml unpreserved	A	7	2.8	Y	Absent	CL-9251(28)
L1639882-03E	Plastic 250ml HNO3 preserved	A	<2	2.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1639882
Project Number:	01.0015522.16	**Report Date:**	12/15/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1639882

Project Number: 01.0015522.16 **Report Date:** 12/15/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1639882
Project Number: 01.0015522.16 **Report Date:** 12/15/16

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: ***EPA 3050B***

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/8/16

ALPHA Job #: L1639882

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave, Norwood Ma 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.16
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☒ 8260 ☐ 624 ☐ 524.2 (8010 1,4-D)
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Metals: Cu, Fe, Pb, Se, Zn
Chloride

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Metals	Chloride					Sample Comments	TOTAL # BOTTLES
39882-01	INF	12/8/16	1056am	GW	BD	X								X	X						5
02	MID	↓	1045am	↓	↓	X															3
03	EFF	↓	1030am	↓	↓	X								X	X						5

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type	V								P	P					
Preservative	HCL								HNO3	✓					

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Bill [illegible]	12/8/16 1245pm	MSM [illegible]	12/8/16 1357
MSM	12/8/16 1415	[illegible]	12/8/16 1415

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1701299
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.16
Report Date:	01/20/17

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1701299-01	INF	WATER	WALTHAM, MA	01/13/17 10:15	01/13/17
L1701299-02	MID	WATER	WALTHAM, MA	01/13/17 10:20	01/13/17
L1701299-03	EFF	WATER	WALTHAM, MA	01/13/17 10:25	01/13/17

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Case Narrative (continued)

Report Submission

The project number was provided by the client.

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: Cristin Walker

Title: Technical Director/Representative

Date: 01/20/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1701299
Report Date: 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/17/17 12:15
Analyst: NL

Date Collected: 01/13/17 10:15
Date Received: 01/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	65		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	9300		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-01 D Date Collected: 01/13/17 10:15

Client ID: INF Date Received: 01/13/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1701299
Report Date: 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/17/17 12:47
Analyst: NL

Date Collected: 01/13/17 10:20
Date Received: 01/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	1.1		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: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-02 Date Collected: 01/13/17 10:20

Client ID: MID Date Received: 01/13/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16
Lab Number: L1701299
Report Date: 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/17/17 13:19
Analyst: NL

Date Collected: 01/13/17 10:25
Date Received: 01/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-03 Date Collected: 01/13/17 10:25

Client ID: EFF Date Received: 01/13/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/17/17 11:43
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG970441-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/17/17 11:43
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG970441-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG970441-3 WG970441-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	88		89		70-130	1		20
Chloroform	92		92		70-130	0		20
Carbon tetrachloride	90		92		63-132	2		20
1,2-Dichloropropane	87		87		70-130	0		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	98		97		70-130	1		20
2-Chloroethylvinyl ether	**23**	Q	**35**	Q	70-130	**41**	Q	20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	93		96		62-150	3		20
1,2-Dichloroethane	84		84		70-130	0		20
1,1,1-Trichloroethane	87		87		67-130	0		20
Bromodichloromethane	93		93		67-130	0		20
trans-1,3-Dichloropropene	83		83		70-130	0		20
cis-1,3-Dichloropropene	87		89		70-130	2		20
1,1-Dichloropropene	85		86		70-130	1		20
Bromoform	110		110		54-136	0		20
1,1,2,2-Tetrachloroethane	95		95		67-130	0		20
Benzene	95		98		70-130	3		25
Toluene	97		100		70-130	3		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG970441-3 WG970441-4								
Ethylbenzene	93		96		70-130	3		20
Chloromethane	89		92		64-130	3		20
Bromomethane	**150**	Q	**140**	Q	39-139	7		20
Vinyl chloride	90		92		55-140	2		20
Chloroethane	96		100		55-138	4		20
1,1-Dichloroethene	99		100		61-145	1		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	96		96		70-130	0		25
1,2-Dichlorobenzene	100		110		70-130	10		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	100		110		70-130	10		20
Methyl tert butyl ether	84		84		63-130	0		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	100		105		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	98		98		70-130	0		20
1,4-Dichlorobutane	86		87		70-130	1		20
Iodomethane	72		99		70-130	**32**	Q	20
1,2,3-Trichloropropane	87		88		64-130	1		20
Styrene	105		110		70-130	5		20
Dichlorodifluoromethane	77		77		36-147	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG970441-3 WG970441-4								
Acetone	87		86		58-148	1		20
Carbon disulfide	87		86		51-130	1		20
2-Butanone	83		88		63-138	6		20
Vinyl acetate	**69**	Q	71		70-130	3		20
4-Methyl-2-pentanone	79		80		59-130	1		20
2-Hexanone	70		70		57-130	0		20
Ethyl methacrylate	80		83		70-130	4		20
Acrolein	**63**	Q	**69**	Q	70-130	9		20
Acrylonitrile	92		95		70-130	3		20
Bromochloromethane	120		120		70-130	0		20
Tetrahydrofuran	81		82		58-130	1		20
2,2-Dichloropropane	79		80		63-133	1		20
1,2-Dibromoethane	93		97		70-130	4		20
1,3-Dichloropropane	89		89		70-130	0		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	110		110		70-130	0		20
n-Butylbenzene	94		95		53-136	1		20
sec-Butylbenzene	97		98		70-130	1		20
tert-Butylbenzene	99		100		70-130	1		20
o-Chlorotoluene	98		100		70-130	2		20
p-Chlorotoluene	97		98		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG970441-3 WG970441-4								
1,2-Dibromo-3-chloropropane	86		86		41-144	0		20
Hexachlorobutadiene	85		91		63-130	7		20
Isopropylbenzene	99		100		70-130	1		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	79		82		70-130	4		20
n-Propylbenzene	97		97		69-130	0		20
1,2,3-Trichlorobenzene	83		85		70-130	2		20
1,2,4-Trichlorobenzene	87		88		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
trans-1,4-Dichloro-2-butene	82		83		70-130	1		20
Halothane	100		100		70-130	0		20
Ethyl ether	120		110		59-134	9		20
Methyl Acetate	100		100		70-130	0		20
Ethyl Acetate	83		87		70-130	5		20
Isopropyl Ether	86		86		70-130	0		20
Cyclohexane	84		87		70-130	4		20
Tert-Butyl Alcohol	90		94		70-130	4		20
Ethyl-Tert-Butyl-Ether	82		82		70-130	0		20
Tertiary-Amyl Methyl Ether	80		83		66-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG970441-3 WG970441-4								
1,4-Dioxane	104		106		56-162	2		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		100		70-130	0		20
Methyl cyclohexane	97		95		70-130	2		20
p-Diethylbenzene	93		97		70-130	4		20
4-Ethyltoluene	100		110		70-130	10		20
1,2,4,5-Tetramethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	84		82		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	103		101		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1701299
Project Number:	01.0015522.16	**Report Date:**	01/20/17

SAMPLE RESULTS

Lab ID:	L1701299-01	Date Collected:	01/13/17 10:15
Client ID:	INF	Date Received:	01/13/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0514		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 14:51	EPA 3005A	1,6020A	AM
Iron, Total	3.69		mg/l	0.050	--	1	01/17/17 12:22	01/17/17 22:22	EPA 3005A	19,200.7	AB
Lead, Total	0.0253		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 14:51	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	01/17/17 12:22	01/18/17 14:51	EPA 3005A	1,6020A	AM
Zinc, Total	0.0255		mg/l	0.0100	--	1	01/17/17 12:22	01/18/17 14:51	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1701299
Project Number:	01.0015522.16	**Report Date:**	01/20/17

SAMPLE RESULTS

Lab ID:	L1701299-03	Date Collected:	01/13/17 10:25
Client ID:	EFF	Date Received:	01/13/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.0034		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 14:57	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	01/17/17 12:22	01/17/17 22:59	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 14:57	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	01/17/17 12:22	01/18/17 14:57	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	01/17/17 12:22	01/18/17 14:57	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG970242-1										
Copper, Total	ND		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 12:10	1,6020A	AM
Lead, Total	ND		mg/l	0.0010	--	1	01/17/17 12:22	01/18/17 12:10	1,6020A	AM
Selenium, Total	ND		mg/l	0.005	--	1	01/17/17 12:22	01/18/17 12:10	1,6020A	AM
Zinc, Total	ND		mg/l	0.0100	--	1	01/17/17 12:22	01/18/17 12:10	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG970247-1										
Iron, Total	ND		mg/l	0.050	--	1	01/17/17 12:22	01/17/17 22:01	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1701299

Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG970242-2								
Copper, Total	108		-		80-120	-		
Lead, Total	115		-		80-120	-		
Selenium, Total	110		-		80-120	-		
Zinc, Total	105		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG970247-2								
Iron, Total	85		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG970242-3 QC Sample: L1701299-01 Client ID: INF												
Copper, Total	0.0514	0.25	0.3320	112		-	-		75-125	-		20
Lead, Total	0.0253	0.51	0.6016	113		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.148	123		-	-		75-125	-		20
Zinc, Total	0.0255	0.5	0.5683	108		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG970247-3 QC Sample: L1701299-01 Client ID: INF												
Iron, Total	3.69	1	4.49	80		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG970242-4 QC Sample: L1701299-01 Client ID: INF						
Copper, Total	0.0514	0.0522	mg/l	1		20
Lead, Total	0.0253	0.0269	mg/l	6		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.0255	0.0264	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG970247-4 QC Sample: L1701299-01 Client ID: INF						
Iron, Total	3.69	3.77	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 01/13/17 10:15
Date Received: 01/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	01/17/17 20:34	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

SAMPLE RESULTS

Lab ID: L1701299-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 01/13/17 10:25
Date Received: 01/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	550		mg/l	10	--	10	-	01/17/17 20:37	1,9251	ML

Project Name: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

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): 01,03 Batch: WG970402-1										
Chloride	ND		mg/l	1.0	--	1	-	01/17/17 20:49	1,9251	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.16

Lab Number: L1701299

Report Date: 01/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG970402-2								
Chloride	103		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

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): 01,03 QC Batch ID: WG970402-4 QC Sample: L1701412-01 Client ID: MS Sample												
Chloride	2000	20	2000	**0**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG970402-3 QC Sample: L1701412-01 Client ID: DUP Sample						
Chloride	2000	2000	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.16

Lab Number: L1701299
Report Date: 01/20/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1701299-01A	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-01B	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-01C	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-01D	Plastic 250ml HNO3 preserved	A	<2	4.0	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1701299-01E	Plastic 60ml unpreserved	A	7	4.0	Y	Absent	CL-9251(28)
L1701299-02A	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-02B	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-02C	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-03A	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-03B	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-03C	Vial HCl preserved	A	N/A	4.0	Y	Absent	8260(14)
L1701299-03D	Plastic 250ml HNO3 preserved	A	<2	4.0	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1701299-03E	Plastic 60ml unpreserved	A	7	4.0	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1701299
Project Number:	01.0015522.16	**Report Date:**	01/20/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1701299

Project Number: 01.0015522.16 **Report Date:** 01/20/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1701299
Project Number: 01.0015522.16 **Report Date:** 01/20/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/13/17

ALPHA Job #: L1701099

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: HP Waltham
Project Location: Waltham, MA
Project #: 15522.16
Project Manager: John Colbert
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: GZA
Address: 249 Vanderbilt Ave Norwood MA
Phone: 781-983-1357
Email: william.davis@gza.com

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Chloride	metals: Pb, Se, Zn, Fe, Cu					Sample Comments	TOTAL # BOTTLES
01099 -01	INF	1/13/17	10:15	GW	GMM	X								X	X						5
02	MID	↓	10:20	↓	↓	X															3
03	EFF	↓	10:25	↓	↓	X								X	X						5

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type	V									P	P				
Preservative	B									A	C				

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	16:15 1/13/17	AAL	1/13/17 12:32
AAL	1/13/17 16:20		1/13/17 1620

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1704019
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	02/15/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704019-01	INF	WATER	WALTHAM, MA	02/08/17 12:05	02/08/17
L1704019-02	MID	WATER	WALTHAM, MA	02/08/17 11:55	02/08/17
L1704019-03	EFF	WATER	WALTHAM, MA	02/08/17 11:48	02/08/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name:	HP WALTHAM	**Lab Number:**	L1704019
Project Number:	01.0015522.17	**Report Date:**	02/15/17

Case Narrative (continued)

Chloride

The Effluent (L1704019-02) result is greater than the Influent (L1704019-01) result. The sample containers were verified as being labeled correctly by the laboratory.

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

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative

Date: 02/15/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1704019
Report Date: 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/10/17 12:48
Analyst: NL

Date Collected: 02/08/17 12:05
Date Received: 02/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	8100		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-01 D Date Collected: 02/08/17 12:05

Client ID: INF Date Received: 02/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	101		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1704019
Report Date: 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/10/17 13:22
Analyst: NL

Date Collected: 02/08/17 11:55
Date Received: 02/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	9.8		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: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-02 Date Collected: 02/08/17 11:55

Client ID: MID Date Received: 02/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	102		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1704019
Report Date: 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 02/10/17 13:57
Analyst: NL

Date Collected: 02/08/17 11:48
Date Received: 02/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	1.5		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: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-03 Date Collected: 02/08/17 11:48

Client ID: EFF Date Received: 02/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 02/10/17 12:13
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG977246-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 02/10/17 12:13
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG977246-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG977246-3 WG977246-4								
Methylene chloride	94		95		70-130	1		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	78		82		63-132	5		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	80		80		63-130	0		20
1,1,2-Trichloroethane	90		92		70-130	2		20
Tetrachloroethene	85		88		70-130	3		20
Chlorobenzene	94		95		75-130	1		25
Trichlorofluoromethane	84		91		62-150	8		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	94		98		67-130	4		20
Bromodichloromethane	99		100		67-130	1		20
trans-1,3-Dichloropropene	72		74		70-130	3		20
cis-1,3-Dichloropropene	89		91		70-130	2		20
Bromoform	70		71		54-136	1		20
1,1,2,2-Tetrachloroethane	87		88		67-130	1		20
Benzene	100		110		70-130	10		25
Toluene	90		92		70-130	2		25
Ethylbenzene	93		95		70-130	2		20
Chloromethane	80		83		64-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG977246-3 WG977246-4								
Bromomethane	77		75		39-139	3		20
Vinyl chloride	88		95		55-140	8		20
Chloroethane	93		97		55-138	4		20
1,1-Dichloroethene	86		91		61-145	6		25
trans-1,2-Dichloroethene	90		94		70-130	4		20
Trichloroethene	100		100		70-130	0		25
1,2-Dichlorobenzene	89		90		70-130	1		20
1,3-Dichlorobenzene	89		91		70-130	2		20
1,4-Dichlorobenzene	89		90		70-130	1		20
Methyl tert butyl ether	100		110		63-130	10		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	98		100		70-130	2		20
Dichlorodifluoromethane	70		75		36-147	7		20
Naphthalene	90		86		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG977246-3 WG977246-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		107		70-130
Toluene-d8	92		92		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	104		106		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1704019
Project Number:	01.0015522.17	**Report Date:**	02/15/17

SAMPLE RESULTS

Lab ID:	L1704019-01	Date Collected:	02/08/17 12:05
Client ID:	INF	Date Received:	02/08/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00777		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 14:01	EPA 3005A	1,6020A	AM
Iron, Total	0.058		mg/l	0.050	--	1	02/10/17 14:55	02/14/17 16:36	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 14:01	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/10/17 14:55	02/14/17 14:01	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/10/17 14:55	02/14/17 14:01	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1704019
Project Number:	01.0015522.17	**Report Date:**	02/15/17

SAMPLE RESULTS

Lab ID:	L1704019-03	Date Collected:	02/08/17 11:48
Client ID:	EFF	Date Received:	02/08/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00209		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 14:04	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	02/10/17 14:55	02/15/17 18:01	EPA 3005A	19,200.7	MC
Lead, Total	ND		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 14:04	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/10/17 14:55	02/14/17 14:04	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/10/17 14:55	02/14/17 14:04	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG976917-1										
Iron, Total	ND		mg/l	0.050	--	1	02/10/17 14:55	02/14/17 16:27	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG976925-1										
Copper, Total	ND		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 13:43	1,6020A	AM
Lead, Total	ND		mg/l	0.00100	--	1	02/10/17 14:55	02/14/17 13:43	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/10/17 14:55	02/14/17 13:43	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/10/17 14:55	02/14/17 13:43	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG976917-2								
Iron, Total	92		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG976925-2								
Copper, Total	115		-		80-120	-		
Lead, Total	111		-		80-120	-		
Selenium, Total	118		-		80-120	-		
Zinc, Total	114		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG976917-3 QC Sample: L1704019-01 Client ID: INF												
Iron, Total	0.058	1	0.916	86		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG976917-7 QC Sample: L1704066-01 Client ID: MS Sample												
Iron, Total	0.897	1	1.80	90		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG976925-3 QC Sample: L1704019-01 Client ID: INF												
Copper, Total	0.00777	0.25	0.2859	111		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5543	109		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.131	109		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.5576	112		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG976917-4 QC Sample: L1704019-01 Client ID: INF						
Iron, Total	0.058	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG976925-4 QC Sample: L1704019-01 Client ID: INF						
Copper, Total	0.00777	0.00834	mg/l	7		20
Lead, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 02/08/17 12:05
Date Received: 02/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	510		mg/l	10	--	10	-	02/11/17 16:23	1,9251	MR

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

SAMPLE RESULTS

Lab ID: L1704019-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 02/08/17 11:48
Date Received: 02/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	02/11/17 16:25	1,9251	MR

Project Name: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

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): 01,03 Batch: WG977146-1										
Chloride	ND		mg/l	1.0	--	1	-	02/11/17 15:54	1,9251	MR

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1704019

Report Date: 02/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG977146-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

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): 01,03 QC Batch ID: WG977146-4 QC Sample: L1704276-02 Client ID: MS Sample												
Chloride	1200	20	1200	**0**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG977146-3 QC Sample: L1704276-02 Client ID: DUP Sample						
Chloride	1200	1200	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1704019
Report Date: 02/15/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704019-01A	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-01B	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-01C	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-01D	Plastic 250ml HNO3 preserved	A	<2	3.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1704019-01E	Plastic 60ml unpreserved	A	7	3.8	Y	Absent	CL-9251(28)
L1704019-02A	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-02B	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-02C	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-03A	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-03B	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-03C	Vial HCl preserved	A	N/A	3.8	Y	Absent	8260(14)
L1704019-03D	Plastic 250ml HNO3 preserved	A	<2	3.8	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1704019-03E	Plastic 60ml unpreserved	A	7	3.8	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1704019
Project Number:	01.0015522.17	**Report Date:**	02/15/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1704019

Project Number: 01.0015522.17 **Report Date:** 02/15/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1704019
Project Number: 01.0015522.17 **Report Date:** 02/15/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 2/8/17

ALPHA Job #: L1704015

Client Information

Client: G2A
Address: 249 Vanderbilt Ave. Norwood Ma. 02062
Phone: 781-983-1357
Email: wdavis@g2a.com

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma.
Project #: 01.0015522.17
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2 (80-10 List)	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Metals: Cu, Fe, Pb, Se, Zn	Chloride					Sample Comments	TOTAL # BOTTLES
04019 -01	INF	2/8/17	1205pm	GW	BD	X								X	X						5
-02	MID	↓	1155am	↓	↓	X															3
-03	EFF	↓	1148am	↓	↓	X								X	X						5

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type	V											P	P						
Preservative	HCL											HNO3	/						

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Bill Davis	2/8/17 145pm	[illegible] ABL	2/8/17 1370
[illegible]	2/8/17 1810	[illegible]	2/9/17 1410

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1707342
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	03/15/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1707342-01	INF	WATER	WALTHAM, MA	03/09/17 10:10	03/09/17
L1707342-02	MID	WATER	WALTHAM, MA	03/09/17 09:55	03/09/17
L1707342-03	EFF	WATER	WALTHAM, MA	03/09/17 09:45	03/09/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: 03/15/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1707342
Report Date: 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/14/17 11:05
Analyst: PD

Date Collected: 03/09/17 10:10
Date Received: 03/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	6400		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-01 D Date Collected: 03/09/17 10:10

Client ID: INF Date Received: 03/09/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1707342
Report Date: 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/14/17 11:33
Analyst: PD

Date Collected: 03/09/17 09:55
Date Received: 03/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	1.9		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: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-02 Date Collected: 03/09/17 09:55

Client ID: MID Date Received: 03/09/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	104		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1707342
Report Date: 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/14/17 12:00
Analyst: PD

Date Collected: 03/09/17 09:45
Date Received: 03/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	0.62		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: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-03 Date Collected: 03/09/17 09:45

Client ID: EFF Date Received: 03/09/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	106		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/14/17 08:18
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG985397-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/14/17 08:18
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG985397-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG985397-3 WG985397-4								
Methylene chloride	110		100		70-130	10		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	98		98		63-132	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	91		94		63-130	3		20
1,1,2-Trichloroethane	96		96		70-130	0		20
Tetrachloroethene	95		96		70-130	1		20
Chlorobenzene	98		98		75-130	0		25
Trichlorofluoromethane	97		96		62-150	1		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	92		93		70-130	1		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	85		90		54-136	6		20
1,1,2,2-Tetrachloroethane	91		95		67-130	4		20
Benzene	110		110		70-130	0		25
Toluene	99		99		70-130	0		25
Ethylbenzene	100		100		70-130	0		20
Chloromethane	110		110		64-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG985397-3 WG985397-4								
Bromomethane	110		110		39-139	0		20
Vinyl chloride	100		100		55-140	0		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		110		70-130	10		25
1,2-Dichlorobenzene	93		98		70-130	5		20
1,3-Dichlorobenzene	96		100		70-130	4		20
1,4-Dichlorobenzene	94		98		70-130	4		20
Methyl tert butyl ether	97		100		63-130	3		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	110		100		70-130	10		20
Dichlorodifluoromethane	96		95		36-147	1		20
Naphthalene	91		96		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1707342
Report Date: 03/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG985397-3 WG985397-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		93		70-130
Toluene-d8	98		96		70-130
4-Bromofluorobenzene	98		100		70-130
Dibromofluoromethane	101		98		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1707342
Project Number:	01.0015522.17	**Report Date:**	03/15/17

SAMPLE RESULTS

Lab ID:	L1707342-01	Date Collected:	03/09/17 10:10
Client ID:	INF	Date Received:	03/09/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.01674		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:32	EPA 3005A	1,6020A	AM
Iron, Total	0.538		mg/l	0.050	--	1	03/13/17 11:10	03/13/17 21:27	EPA 3005A	19,200.7	AB
Lead, Total	0.00160		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:32	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	03/13/17 11:10	03/14/17 08:32	EPA 3005A	1,6020A	AM
Zinc, Total	0.04314		mg/l	0.01000	--	1	03/13/17 11:10	03/14/17 08:32	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1707342
Project Number:	01.0015522.17	**Report Date:**	03/15/17

SAMPLE RESULTS

Lab ID:	L1707342-03	Date Collected:	03/09/17 09:45
Client ID:	EFF	Date Received:	03/09/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	ND		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:42	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	03/13/17 11:10	03/13/17 22:28	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:42	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	03/13/17 11:10	03/14/17 08:42	EPA 3005A	1,6020A	AM
Zinc, Total	0.02189		mg/l	0.01000	--	1	03/13/17 11:10	03/14/17 08:42	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG985059-1										
Copper, Total	ND		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:11	1,6020A	AM
Lead, Total	ND		mg/l	0.00100	--	1	03/13/17 11:10	03/14/17 08:11	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	03/13/17 11:10	03/14/17 08:11	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	03/13/17 11:10	03/14/17 08:11	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG985063-1										
Iron, Total	ND		mg/l	0.050	--	1	03/13/17 11:10	03/13/17 20:57	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG985059-2								
Copper, Total	103		-		80-120	-		
Lead, Total	100		-		80-120	-		
Selenium, Total	108		-		80-120	-		
Zinc, Total	101		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG985063-2								
Iron, Total	104		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG985059-3 QC Sample: L1707342-01 Client ID: INF												
Copper, Total	0.01674	0.25	0.2748	103		-	-		75-125	-		20
Lead, Total	0.00160	0.51	0.5289	103		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.130	108		-	-		75-125	-		20
Zinc, Total	0.04314	0.5	0.5478	101		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG985063-3 QC Sample: L1707342-01 Client ID: INF												
Iron, Total	0.538	1	1.53	99		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG985059-4 QC Sample: L1707342-01 Client ID: INF						
Copper, Total	0.01674	0.01686	mg/l	1		20
Lead, Total	0.00160	0.00157	mg/l	2		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.04314	0.04026	mg/l	7		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG985063-4 QC Sample: L1707342-01 Client ID: INF						
Iron, Total	0.538	0.525	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 03/09/17 10:10
Date Received: 03/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	03/10/17 18:48	1,9251	MR

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

SAMPLE RESULTS

Lab ID: L1707342-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 03/09/17 09:45
Date Received: 03/09/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	03/10/17 18:50	1,9251	MR

Project Name: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

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): 01,03 Batch: WG984654-1										
Chloride	ND		mg/l	1.0	--	1	-	03/10/17 17:58	1,9251	MR

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1707342

Report Date: 03/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG984654-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

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): 01,03 QC Batch ID: WG984654-4 QC Sample: L1707241-01 Client ID: MS Sample												
Chloride	380	20	390	**50**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG984654-3 QC Sample: L1707241-01 Client ID: DUP Sample						
Chloride	380	380	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1707342
Report Date: 03/15/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1707342-01A	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-01B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-01C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-01D	Plastic 250ml HNO3 preserved	A	<2	3.7	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1707342-01E	Plastic 60ml unpreserved	A	7	3.7	Y	Absent	CL-9251(28)
L1707342-02A	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-02B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-02C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-03A	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-03B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-03C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1707342-03D	Plastic 250ml HNO3 preserved	A	<2	3.7	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1707342-03E	Plastic 60ml unpreserved	A	7	3.7	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1707342
Project Number:	01.0015522.17	**Report Date:**	03/15/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1707342

Project Number: 01.0015522.17 **Report Date:** 03/15/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1707342
Project Number: 01.0015522.17 **Report Date:** 03/15/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 3/9/17

ALPHA Job #: L1707342

Client Information

Client: GZA
Address: 249 Vanderbilt Ave, Norwood Ma 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.17
Project Manager: J. Calbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☑ 8260 ☐ 624 ☐ 524.2 (80-10 list)	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Metals (Cu, Pb, Fe, Se, Zn	Chloride				Sample Comments	TOTAL # BOTTLES
07342-01	INF	3/9/17	10:10am	GW	BD	X								X	X					5
02	MID	↓	9:55am	GW	BD	X														3
03	EFF	↓	9:45am	GW	BD	X								X	X					5
Container Type						V								P	P					
Preservative						HCL								HNO_3	/					

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	3/9/17 1130am	S. Walcott AAL	3/9/17 1145
S Walcott	3/9/17 1900		3/9/17 1900

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1710935
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	04/14/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1710935-01	INF	WATER	WALTHAM, MA	04/07/17 10:15	04/07/17
L1710935-02	MID	WATER	WALTHAM, MA	04/07/17 10:05	04/07/17
L1710935-03	EFF	WATER	WALTHAM, MA	04/07/17 09:50	04/07/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: Melissa Cripps

Title: Technical Director/Representative

Date: 04/14/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1710935
Report Date: 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-01 D
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/13/17 21:09
Analyst: PD

Date Collected: 04/07/17 10:15
Date Received: 04/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	55		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100
Trichloroethene	7300		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100

Project Name: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-01 D Date Collected: 04/07/17 10:15

Client ID: INF Date Received: 04/07/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Naphthalene	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1710935
Report Date: 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-02
Client ID: MID
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/13/17 21:45
Analyst: PD

Date Collected: 04/07/17 10:05
Date Received: 04/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	3.6		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-02 Date Collected: 04/07/17 10:05

Client ID: MID Date Received: 04/07/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/13/17 22:20
Analyst: PD

Date Collected: 04/07/17 09:50
Date Received: 04/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
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	1.2		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: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-03 Date Collected: 04/07/17 09:50

Client ID: EFF Date Received: 04/07/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/13/17 20:34
Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG994299-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/13/17 20:34
Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG994299-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG994299-3 WG994299-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	86		88		63-132	2		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	85		90		63-130	6		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		75-130	0		25
Trichlorofluoromethane	100		100		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	97		100		67-130	3		20
Bromodichloromethane	100		100		67-130	0		20
trans-1,3-Dichloropropene	79		83		70-130	5		20
cis-1,3-Dichloropropene	90		94		70-130	4		20
Bromoform	75		78		54-136	4		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	110		110		70-130	0		25
Toluene	110		110		70-130	0		25
Ethylbenzene	110		110		70-130	0		20
Chloromethane	93		88		64-130	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG994299-3 WG994299-4								
Bromomethane	61		61		39-139	0		20
Vinyl chloride	110		110		55-140	0		20
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		99		61-145	1		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	100		110		70-130	10		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	100		110		70-130	10		20
Methyl tert butyl ether	100		110		63-130	10		20
p/m-Xylene	115		115		70-130	0		20
o-Xylene	115		115		70-130	0		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dichlorodifluoromethane	100		100		36-147	0		20
Naphthalene	99		100		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1710935

Report Date: 04/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG994299-3 WG994299-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		102		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	98		101		70-130
Dibromofluoromethane	99		99		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1710935
Project Number:	01.0015522.17	**Report Date:**	04/14/17

SAMPLE RESULTS

Lab ID:	L1710935-01	Date Collected:	04/07/17 10:15
Client ID:	INF	Date Received:	04/07/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00939		mg/l	0.00100	--	1	04/11/17 11:04	04/13/17 13:28	EPA 3005A	1,6020A	BV
Iron, Total	0.494		mg/l	0.050	--	1	04/11/17 11:04	04/13/17 02:21	EPA 3005A	19,200.7	AM
Lead, Total	ND		mg/l	0.00100	--	1	04/11/17 11:04	04/13/17 13:28	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	04/11/17 11:04	04/13/17 13:28	EPA 3005A	1,6020A	BV
Zinc, Total	0.01295		mg/l	0.01000	--	1	04/11/17 11:04	04/13/17 13:28	EPA 3005A	1,6020A	BV

Project Name:	HP WALTHAM	**Lab Number:**	L1710935
Project Number:	01.0015522.17	**Report Date:**	04/14/17

SAMPLE RESULTS

Lab ID:	L1710935-03	Date Collected:	04/07/17 09:50
Client ID:	EFF	Date Received:	04/07/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00227		mg/l	0.00100	--	1	04/11/17 11:04	04/13/17 13:31	EPA 3005A	1,6020A	BV
Iron, Total	ND		mg/l	0.050	--	1	04/11/17 11:04	04/13/17 02:25	EPA 3005A	19,200.7	AM
Lead, Total	ND		mg/l	0.00100	--	1	04/11/17 11:04	04/13/17 13:31	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	04/11/17 11:04	04/13/17 13:31	EPA 3005A	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	04/11/17 11:04	04/13/17 13:31	EPA 3005A	1,6020A	BV

Project Name: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG993025-1										
Copper, Total	ND		mg/l	0.00100	--	1	04/11/17 11:04	04/13/17 11:22	1,6020A	BV
Lead, Total	ND		mg/l	0.00050	--	1	04/11/17 11:04	04/13/17 11:22	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	04/11/17 11:04	04/13/17 11:22	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	04/11/17 11:04	04/13/17 11:22	1,6020A	BV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG993028-1										
Iron, Total	ND		mg/l	0.050	--	1	04/11/17 11:04	04/13/17 01:11	19,200.7	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG993025-2								
Copper, Total	96		-		80-120	-		
Lead, Total	94		-		80-120	-		
Selenium, Total	103		-		80-120	-		
Zinc, Total	98		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG993028-2								
Iron, Total	104		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG993025-3 QC Sample: L1710924-01 Client ID: MS Sample												
Copper, Total	ND	0.25	0.2334	93		-	-		75-125	-		20
Lead, Total	0.00098	0.51	0.4276	84		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.118	98		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.4939	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG993028-3 QC Sample: L1710924-01 Client ID: MS Sample												
Iron, Total	18.0	1	18.8	80		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG993025-4 QC Sample: L1710924-01 Client ID: DUP Sample						
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	0.00098	0.00098	mg/l	0		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG993028-4 QC Sample: L1710924-01 Client ID: DUP Sample						
Iron, Total	18.0	18.4	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 04/07/17 10:15
Date Received: 04/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	550		mg/l	10	--	10	-	04/12/17 18:27	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

SAMPLE RESULTS

Lab ID: L1710935-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 04/07/17 09:50
Date Received: 04/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	540		mg/l	10	--	10	-	04/12/17 18:29	1,9251	ML

Project Name: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

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): 01,03 Batch: WG993629-1										
Chloride	ND		mg/l	1.0	--	1	-	04/12/17 18:23	1,9251	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1710935

Report Date: 04/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG993629-2								
Chloride	93		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

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): 01,03 QC Batch ID: WG993629-4 QC Sample: L1711136-01 Client ID: MS Sample												
Chloride	820	20	810	**0**	Q	-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG993629-3 QC Sample: L1711136-01 Client ID: DUP Sample						
Chloride	820	810	mg/l	1		7

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1710935
Report Date: 04/14/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1710935-01A	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-01B	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-01C	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-01D	Plastic 250ml HNO3 preserved	A	<2	5.4	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1710935-01E	Plastic 60ml unpreserved	A	7	5.4	Y	Absent	CL-9251(28)
L1710935-02A	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-02B	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-02C	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-03A	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-03B	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-03C	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1710935-03D	Plastic 250ml HNO3 preserved	A	<2	5.4	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1710935-03E	Plastic 60ml unpreserved	A	7	5.4	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1710935
Project Number:	01.0015522.17	**Report Date:**	04/14/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1710935

Project Number: 01.0015522.17 **Report Date:** 04/14/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1710935
Project Number: 01.0015522.17 **Report Date:** 04/14/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 4/7/17

ALPHA Job #: L1710935

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.17
Project Manager: J. Colbert
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: GZA
Address: 249 Vanderbilt Ave
Norwood Ma. 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

ANALYSIS

VOC: ☒ 8260 ☐ 624 ☐ 524.2 (60-10 (ii))
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Chloride
Metals: Cu, Fe, Pb, Se, Zn

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Chloride	Metals					Sample Comments	TOTAL # BOTTLES
10935-01	INF	4/7/17	1015am	GW	BD	X								X	X						5
02	MID	↓	1005am	↓	BD	X															3
03	EFF	↓	950am	↓	BD	X								X	X						5

Container Type	V											P	P				
Preservative	HCL											/	HNO3				

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/7/17 1750	[signature] ATL	4/7/17 1325
[signature]	4/7/17 1750	[signature]	4/7/17 1732

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1714341
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	05/12/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1714341-01	INF	WATER	WALTHAM, MA	05/04/17 11:55	05/04/17
L1714341-02	MID	WATER	WALTHAM, MA	05/04/17 11:40	05/04/17
L1714341-03	EFF	WATER	WALTHAM, MA	05/04/17 11:10	05/04/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative

Date: 05/12/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714341
Report Date: 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-01 D
Client ID: INF
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 11:55
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/12/17 06:31
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	150	--	50
1,1-Dichloroethane	ND		ug/l	38	--	50
Chloroform	ND		ug/l	38	--	50
Carbon tetrachloride	ND		ug/l	25	--	50
1,2-Dichloropropane	ND		ug/l	88	--	50
Dibromochloromethane	ND		ug/l	25	--	50
1,1,2-Trichloroethane	ND		ug/l	38	--	50
Tetrachloroethene	59		ug/l	25	--	50
Chlorobenzene	ND		ug/l	25	--	50
Trichlorofluoromethane	ND		ug/l	120	--	50
1,2-Dichloroethane	ND		ug/l	25	--	50
1,1,1-Trichloroethane	ND		ug/l	25	--	50
Bromodichloromethane	ND		ug/l	25	--	50
trans-1,3-Dichloropropene	ND		ug/l	25	--	50
cis-1,3-Dichloropropene	ND		ug/l	25	--	50
Bromoform	ND		ug/l	100	--	50
1,1,2,2-Tetrachloroethane	ND		ug/l	25	--	50
Benzene	ND		ug/l	25	--	50
Toluene	ND		ug/l	38	--	50
Ethylbenzene	ND		ug/l	25	--	50
Chloromethane	ND		ug/l	120	--	50
Bromomethane	ND		ug/l	50	--	50
Vinyl chloride	ND		ug/l	50	--	50
Chloroethane	ND		ug/l	50	--	50
1,1-Dichloroethene	ND		ug/l	25	--	50
trans-1,2-Dichloroethene	ND		ug/l	38	--	50
Trichloroethene	7400		ug/l	25	--	50
1,2-Dichlorobenzene	ND		ug/l	120	--	50
1,3-Dichlorobenzene	ND		ug/l	120	--	50
1,4-Dichlorobenzene	ND		ug/l	120	--	50

Project Name: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-01 D Date Collected: 05/04/17 11:55

Client ID: INF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	50	--	50
p/m-Xylene	ND		ug/l	50	--	50
o-Xylene	ND		ug/l	50	--	50
cis-1,2-Dichloroethene	ND		ug/l	25	--	50
Dichlorodifluoromethane	ND		ug/l	250	--	50
Naphthalene	ND		ug/l	120	--	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714341
Report Date: 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-02
Client ID: MID
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 11:40
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/12/17 04:47
Analyst: PK

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
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	5.6		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-02 Date Collected: 05/04/17 11:40

Client ID: MID Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714341
Report Date: 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-03
Client ID: EFF
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 11:10
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/12/17 05:22
Analyst: PK

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
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	1.0		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: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-03 Date Collected: 05/04/17 11:10

Client ID: EFF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	97		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/11/17 21:51
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1002907-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/11/17 21:51
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1002907-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1002907-3 WG1002907-4								
Methylene chloride	97		97		70-130	0		20
1,1-Dichloroethane	99		98		70-130	1		20
Chloroform	99		100		70-130	1		20
Carbon tetrachloride	92		90		63-132	2		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	94		94		63-130	0		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	96		97		70-130	1		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	80		79		62-150	1		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	93		94		67-130	1		20
Bromodichloromethane	98		98		67-130	0		20
trans-1,3-Dichloropropene	75		78		70-130	4		20
cis-1,3-Dichloropropene	98		100		70-130	2		20
Bromoform	86		91		54-136	6		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	100		100		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	110		110		70-130	0		20
Chloromethane	74		64		64-130	14		20
Bromomethane	67		50		39-139	**29**	Q	20
Vinyl chloride	67		68		55-140	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1002907-3 WG1002907-4								
Chloroethane	90		60		55-138	**40**	Q	20
1,1-Dichloroethene	86		84		61-145	2		25
trans-1,2-Dichloroethene	99		96		70-130	3		20
Trichloroethene	99		98		70-130	1		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	96		100		63-130	4		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Dichlorodifluoromethane	40		39		36-147	3		20
Naphthalene	99		110		70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		98		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	97		97		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1714341
Project Number:	01.0015522.17	**Report Date:**	05/12/17

SAMPLE RESULTS

Lab ID:	L1714341-01	Date Collected:	05/04/17 11:55
Client ID:	INF	Date Received:	05/04/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00656		mg/l	0.00100	--	1	05/05/17 11:18	05/06/17 17:58	EPA 3005A	1,6020A	BV
Iron, Total	0.095		mg/l	0.050	--	1	05/05/17 11:18	05/05/17 18:37	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00050	--	1	05/05/17 11:18	05/06/17 17:58	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	05/05/17 11:18	05/06/17 17:58	EPA 3005A	1,6020A	BV
Zinc, Total	0.01127		mg/l	0.01000	--	1	05/05/17 11:18	05/06/17 17:58	EPA 3005A	1,6020A	BV

Project Name:	HP WALTHAM	**Lab Number:**	L1714341
Project Number:	01.0015522.17	**Report Date:**	05/12/17

SAMPLE RESULTS

Lab ID:	L1714341-03	Date Collected:	05/04/17 11:10
Client ID:	EFF	Date Received:	05/04/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00108		mg/l	0.00100	--	1	05/05/17 11:18	05/06/17 17:21	EPA 3005A	1,6020A	BV
Iron, Total	ND		mg/l	0.050	--	1	05/05/17 11:18	05/05/17 20:11	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00050	--	1	05/05/17 11:18	05/06/17 17:21	EPA 3005A	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	05/05/17 11:18	05/06/17 17:21	EPA 3005A	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	05/05/17 11:18	05/06/17 17:21	EPA 3005A	1,6020A	BV

Project Name: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1000654-1										
Iron, Total	ND		mg/l	0.050	--	1	05/05/17 11:18	05/05/17 18:29	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1000665-1										
Copper, Total	ND		mg/l	0.00100	--	1	05/05/17 11:18	05/06/17 17:17	1,6020A	BV
Lead, Total	ND		mg/l	0.00050	--	1	05/05/17 11:18	05/06/17 17:17	1,6020A	BV
Selenium, Total	ND		mg/l	0.00500	--	1	05/05/17 11:18	05/06/17 17:17	1,6020A	BV
Zinc, Total	ND		mg/l	0.01000	--	1	05/05/17 11:18	05/06/17 17:17	1,6020A	BV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1000654-2								
Iron, Total	97		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1000665-2								
Copper, Total	100		-		80-120	-		
Lead, Total	102		-		80-120	-		
Selenium, Total	102		-		80-120	-		
Zinc, Total	99		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000654-3 QC Sample: L1714327-01 Client ID: MS Sample												
Iron, Total	3.73	1	4.31	**58**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000654-7 QC Sample: L1714341-01 Client ID: INF												
Iron, Total	0.095	1	1.01	92		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000665-3 QC Sample: L1714341-01 Client ID: INF												
Copper, Total	0.00656	0.25	0.2584	101		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5298	104		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.116	97		-	-		75-125	-		20
Zinc, Total	0.01127	0.5	0.4932	96		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000654-4 QC Sample: L1714327-01 Client ID: DUP Sample						
Iron, Total	3.73	3.39	mg/l	10		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000654-8 QC Sample: L1714341-01 Client ID: INF						
Iron, Total	0.095	0.090	mg/l	5		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1000665-4 QC Sample: L1714341-01 Client ID: INF						
Copper, Total	0.00656	0.00697	mg/l	6		20
Lead, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01127	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 05/04/17 11:55
Date Received: 05/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	560		mg/l	10	--	10	-	05/09/17 19:05	1,9251	ML

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

SAMPLE RESULTS

Lab ID: L1714341-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 05/04/17 11:10
Date Received: 05/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	560		mg/l	10	--	10	-	05/09/17 19:07	1,9251	ML

Project Name: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

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): 01,03 Batch: WG1001751-1										
Chloride	ND		mg/l	1.0	--	1	-	05/09/17 18:59	1,9251	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714341

Report Date: 05/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1001751-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

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): 01,03 QC Batch ID: WG1001751-4 QC Sample: L1714463-06 Client ID: MS Sample												
Chloride	1.4	20	21	98		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1001751-3 QC Sample: L1714463-05 Client ID: DUP Sample						
Chloride	21	21	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714341
Report Date: 05/12/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information	Custody Seal
Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1714341-01A	Plastic 250ml HNO3 preserved	A	<2	3.7	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1714341-01B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-01C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-01D	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-01E	Plastic 60ml unpreserved	A	7	3.7	Y	Absent	CL-9251(28)
L1714341-02B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-02C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-02D	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-03A	Plastic 250ml HNO3 preserved	A	<2	3.7	Y	Absent	SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1714341-03B	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-03C	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-03D	Vial HCl preserved	A	N/A	3.7	Y	Absent	8260(14)
L1714341-03E	Plastic 60ml unpreserved	A	7	3.7	Y	Absent	CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1714341
Project Number:	01.0015522.17	**Report Date:**	05/12/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1714341

Project Number: 01.0015522.17 **Report Date:** 05/12/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1714341
Project Number: 01.0015522.17 **Report Date:** 05/12/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/4/17

ALPHA Job #: L1714341

ALPHA ANALYTICAL World Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave Norwood Ma. 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma.
Project #: 01.0015522.17
Project Manager: J. Calbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2 (80-10 List); SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Chlor. ide; Metals: Pb, Zn, Fe, Se, Cu

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Chlor. ide	Metals				Sample Comments	TOTAL # BOTTLES
14341-01	INF	5/4/17	1155am	GW	BD	X								X	X					5
02	MID	↓	1140am	↓	↓	X														3
03	EFF	↓	1120am	↓	↓	X								X	X					5
Container Type						V								P	P					
Preservative						HCL								/	HNO3					

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Bill D	5/4/17 1110pm	MSN	5/4/17 1310
MSN	5/4/17 1741	[illegible]	5/4/17 1745

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1714337
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	06/14/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1714337-01	INF	WATER	WALTHAM, MA	05/04/17 12:15	05/04/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Case Narrative (continued)

Report Submission

This report replaces the report May 17, 2017, and includes the results of the Hardness analysis.

A previously-issued final report replaced the partial report issued May 15, 2017, and included the results of all requested analyses.

The analysis of ethanol was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

L1714337-01: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Volatile Organics by SIM

L1714337-01: The sample has an elevated detection limit due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Semivolatile Organics

The WG1001142-2 LCS recovery, associated with L1714337-01, is below the acceptance criteria for benzidine (8%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

Metals

The WG1000583-3 MS recovery for hardness (36%), performed on L1714337-01, does not apply because the sample concentration is greater than four times the spike amount added.

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: Melissa Cripps

Title: Technical Director/Representative

Date: 06/14/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA

Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 05/09/17 21:03
Analyst: SL

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified
Extraction Method: EPA 504.1
Extraction Date: 05/09/17 15:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	0.004	1	A

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 D
Client ID: INF
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/12/17 07:35
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	68.	100
1,1-Dichloroethane	ND		ug/l	75	21.	100
Chloroform	ND		ug/l	75	16.	100
Carbon tetrachloride	ND		ug/l	50	13.	100
1,2-Dichloropropane	ND		ug/l	180	14.	100
Dibromochloromethane	ND		ug/l	50	15.	100
1,1,2-Trichloroethane	ND		ug/l	75	14.	100
Tetrachloroethene	57		ug/l	50	18.	100
Chlorobenzene	ND		ug/l	50	18.	100
Trichlorofluoromethane	ND		ug/l	250	16.	100
1,2-Dichloroethane	ND		ug/l	50	13.	100
1,1,1-Trichloroethane	ND		ug/l	50	16.	100
Bromodichloromethane	ND		ug/l	50	19.	100
trans-1,3-Dichloropropene	ND		ug/l	50	16.	100
cis-1,3-Dichloropropene	ND		ug/l	50	14.	100
1,1-Dichloropropene	ND		ug/l	250	17.	100
Bromoform	ND		ug/l	200	25.	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	17.	100
Benzene	ND		ug/l	50	16.	100
Toluene	ND		ug/l	75	16.	100
Ethylbenzene	ND		ug/l	50	17.	100
Chloromethane	ND		ug/l	250	18.	100
Bromomethane	ND		ug/l	100	26.	100
Vinyl chloride	ND		ug/l	100	7.1	100
Chloroethane	ND		ug/l	100	13.	100
1,1-Dichloroethene	ND		ug/l	50	17.	100
trans-1,2-Dichloroethene	ND		ug/l	75	16.	100
Trichloroethene	7200		ug/l	50	18.	100
1,2-Dichlorobenzene	ND		ug/l	250	18.	100
1,3-Dichlorobenzene	ND		ug/l	250	19.	100

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 D Date Collected: 05/04/17 12:15

Client ID: INF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Dichlorobenzene	ND		ug/l	250	19.	100
Methyl tert butyl ether	ND		ug/l	100	17.	100
p/m-Xylene	ND		ug/l	100	33.	100
o-Xylene	ND		ug/l	100	33.	100
Xylenes, Total	ND		ug/l	100	33.	100
cis-1,2-Dichloroethene	25	J	ug/l	50	19.	100
Dibromomethane	ND		ug/l	500	36.	100
1,4-Dichlorobutane	ND		ug/l	500	46.	100
1,2,3-Trichloropropane	ND		ug/l	500	18.	100
Styrene	ND		ug/l	100	36.	100
Dichlorodifluoromethane	ND		ug/l	500	24.	100
Acetone	ND		ug/l	500	150	100
Carbon disulfide	ND		ug/l	500	30.	100
2-Butanone	ND		ug/l	500	190	100
Vinyl acetate	ND		ug/l	500	31.	100
4-Methyl-2-pentanone	ND		ug/l	500	42.	100
2-Hexanone	ND		ug/l	500	52.	100
Ethyl methacrylate	ND		ug/l	500	61.	100
Acrylonitrile	ND		ug/l	500	43.	100
Bromochloromethane	ND		ug/l	250	15.	100
Tetrahydrofuran	ND		ug/l	500	83.	100
2,2-Dichloropropane	ND		ug/l	250	20.	100
1,2-Dibromoethane	ND		ug/l	200	19.	100
1,3-Dichloropropane	ND		ug/l	250	21.	100
1,1,1,2-Tetrachloroethane	ND		ug/l	50	16.	100
Bromobenzene	ND		ug/l	250	15.	100
n-Butylbenzene	ND		ug/l	50	19.	100
sec-Butylbenzene	ND		ug/l	50	18.	100
tert-Butylbenzene	ND		ug/l	250	18.	100
o-Chlorotoluene	ND		ug/l	250	17.	100
p-Chlorotoluene	ND		ug/l	250	18.	100
1,2-Dibromo-3-chloropropane	ND		ug/l	250	35.	100
Hexachlorobutadiene	ND		ug/l	50	22.	100
Isopropylbenzene	ND		ug/l	50	19.	100
p-Isopropyltoluene	ND		ug/l	50	19.	100
Naphthalene	ND		ug/l	250	22.	100
n-Propylbenzene	ND		ug/l	50	17.	100
1,2,3-Trichlorobenzene	ND		ug/l	250	23.	100
1,2,4-Trichlorobenzene	ND		ug/l	250	22.	100

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 D Date Collected: 05/04/17 12:15

Client ID: INF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	250	17.	100
1,2,4-Trimethylbenzene	ND		ug/l	250	19.	100
trans-1,4-Dichloro-2-butene	ND		ug/l	250	18.	100
Ethyl ether	ND		ug/l	250	16.	100
Tert-Butyl Alcohol	ND		ug/l	1000	140	100
Tertiary-Amyl Methyl Ether	ND		ug/l	200	28.	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	91		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 D
Client ID: INF
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/12/17 16:24
Analyst: MAB

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Ethanol	ND		ug/l	25000	1400	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 D
Client ID: INF
Sample Location: WALTHAM, MA

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 05/12/17 07:35
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	300	76.	100

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 05/09/17 19:47
Analyst: SL

Extraction Method: EPA 504.1
Extraction Date: 05/09/17 15:14

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1001729-1						
1,2-Dibromoethane	ND		ug/l	0.010	0.004	A

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 05/12/17 06:28
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1002892-5					
1,4-Dioxane	ND		ug/l	3.0	0.76

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/12/17 06:28
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1002896-5					
Methylene chloride	ND		ug/l	3.0	0.68
1,1-Dichloroethane	ND		ug/l	0.75	0.21
Chloroform	ND		ug/l	0.75	0.16
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.8	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	0.75	0.14
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	0.50	0.18
Trichlorofluoromethane	ND		ug/l	2.5	0.16
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.17
Bromoform	ND		ug/l	2.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	0.75	0.16
Ethylbenzene	ND		ug/l	0.50	0.17
Chloromethane	ND		ug/l	2.5	0.18
Bromomethane	ND		ug/l	1.0	0.26
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	1.0	0.13
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	0.75	0.16
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.18

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/12/17 06:28
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1002896-5					
1,3-Dichlorobenzene	ND		ug/l	2.5	0.19
1,4-Dichlorobenzene	ND		ug/l	2.5	0.19
Methyl tert butyl ether	ND		ug/l	1.0	0.17
p/m-Xylene	ND		ug/l	1.0	0.33
o-Xylene	ND		ug/l	1.0	0.33
Xylenes, Total	ND		ug/l	1.0	0.33
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.19
Dibromomethane	ND		ug/l	5.0	0.36
1,4-Dichlorobutane	ND		ug/l	5.0	0.46
1,2,3-Trichloropropane	ND		ug/l	5.0	0.18
Styrene	ND		ug/l	1.0	0.36
Dichlorodifluoromethane	ND		ug/l	5.0	0.24
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	0.30
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	0.31
4-Methyl-2-pentanone	ND		ug/l	5.0	0.42
2-Hexanone	ND		ug/l	5.0	0.52
Ethyl methacrylate	ND		ug/l	5.0	0.61
Acrylonitrile	ND		ug/l	5.0	0.43
Bromochloromethane	ND		ug/l	2.5	0.15
Tetrahydrofuran	ND		ug/l	5.0	0.83
2,2-Dichloropropane	ND		ug/l	2.5	0.20
1,2-Dibromoethane	ND		ug/l	2.0	0.19
1,3-Dichloropropane	ND		ug/l	2.5	0.21
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.16
Bromobenzene	ND		ug/l	2.5	0.15
n-Butylbenzene	ND		ug/l	0.50	0.19
sec-Butylbenzene	ND		ug/l	0.50	0.18

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/12/17 06:28
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1002896-5					
tert-Butylbenzene	ND		ug/l	2.5	0.18
o-Chlorotoluene	ND		ug/l	2.5	0.17
p-Chlorotoluene	ND		ug/l	2.5	0.18
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.35
Hexachlorobutadiene	ND		ug/l	0.50	0.22
Isopropylbenzene	ND		ug/l	0.50	0.19
p-Isopropyltoluene	ND		ug/l	0.50	0.19
Naphthalene	ND		ug/l	2.5	0.22
n-Propylbenzene	ND		ug/l	0.50	0.17
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.23
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.22
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.17
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.19
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.18
Ethyl ether	ND		ug/l	2.5	0.16
Tert-Butyl Alcohol	ND		ug/l	10	1.4
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	0.28

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	85		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/12/17 13:36
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1003068-5					
Ethyl Alcohol	ND		ug/l	250	14.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714337

Report Date: 06/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1001729-2									
1,2-Dibromoethane	104		-		70-130	-			A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714337

Report Date: 06/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1002892-3 WG1002892-4								
1,4-Dioxane	110		100		70-130	10		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1002896-3 WG1002896-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	94		95		70-130	1		20
Carbon tetrachloride	73		74		63-132	1		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	84		88		63-130	5		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	96		100		70-130	4		20
Chlorobenzene	98		98		75-130	0		25
Trichlorofluoromethane	87		84		62-150	4		20
1,2-Dichloroethane	84		85		70-130	1		20
1,1,1-Trichloroethane	82		82		67-130	0		20
Bromodichloromethane	90		87		67-130	3		20
trans-1,3-Dichloropropene	100		110		70-130	10		20
cis-1,3-Dichloropropene	98		99		70-130	1		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	92		88		54-136	4		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	100		110		70-130	10		25
Toluene	110		110		70-130	0		25
Ethylbenzene	110		110		70-130	0		20
Chloromethane	96		97		64-130	1		20
Bromomethane	87		85		39-139	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1002896-3 WG1002896-4								
Vinyl chloride	110		110		55-140	0		20
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		25
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	88		91		70-130	3		25
1,2-Dichlorobenzene	94		97		70-130	3		20
1,3-Dichlorobenzene	95		94		70-130	1		20
1,4-Dichlorobenzene	94		95		70-130	1		20
Methyl tert butyl ether	97		100		63-130	3		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	98		94		70-130	4		20
Dibromomethane	90		92		70-130	2		20
1,4-Dichlorobutane	100		110		70-130	10		20
1,2,3-Trichloropropane	100		110		64-130	10		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	97		97		36-147	0		20
Acetone	84		76		58-148	10		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	87		75		63-138	15		20
Vinyl acetate	81		87		70-130	7		20
4-Methyl-2-pentanone	100		110		59-130	10		20
2-Hexanone	83		83		57-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1002896-3 WG1002896-4								
Ethyl methacrylate	120		120		70-130	0		20
Acrylonitrile	94		94		70-130	0		20
Bromochloromethane	85		89		70-130	5		20
Tetrahydrofuran	76		82		58-130	8		20
2,2-Dichloropropane	87		87		63-133	0		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	120		120		70-130	0		20
1,1,1,2-Tetrachloroethane	87		90		64-130	3		20
Bromobenzene	93		92		70-130	1		20
n-Butylbenzene	120		120		53-136	0		20
sec-Butylbenzene	95		94		70-130	1		20
tert-Butylbenzene	90		92		70-130	2		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	94		98		41-144	4		20
Hexachlorobutadiene	110		110		63-130	0		20
Isopropylbenzene	94		96		70-130	2		20
p-Isopropyltoluene	94		90		70-130	4		20
Naphthalene	88		86		70-130	2		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	95		97		70-130	2		20
1,2,4-Trichlorobenzene	90		94		70-130	4		20
1,3,5-Trimethylbenzene	95		96		64-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1002896-3 WG1002896-4								
1,2,4-Trimethylbenzene	98		95		70-130	3		20
trans-1,4-Dichloro-2-butene	**140**	Q	100		70-130	**33**	Q	20
Ethyl ether	120		130		59-134	8		20
Tert-Butyl Alcohol	90		96		70-130	6		20
Tertiary-Amyl Methyl Ether	97		99		66-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	86		89		70-130
Toluene-d8	110		112		70-130
4-Bromofluorobenzene	110		107		70-130
Dibromofluoromethane	88		89		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714337
Report Date: 06/14/17

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: WG1003068-3 WG1003068-4								
Ethyl Alcohol	82		90		70-130	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		94		70-130
Toluene-d8	102		100		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	97		97		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714337

Report Date: 06/14/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001729-3 QC Sample: L1714130-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.252	0.268	106		-	-		65-135	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.252	0.232	92		-	-		65-135	-		20	A

SEMIVOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA

Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/17 06:36
Analyst: CB

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Azobenzene	ND		ug/l	2.0	0.75	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Isophorone	ND		ug/l	5.0	0.60	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	1.3	J	ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Biphenyl	ND		ug/l	2.0	0.76	1
Aniline	ND		ug/l	2.0	0.65	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 Date Collected: 05/04/17 12:15

Client ID: INF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.67	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.68	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.62	1
2-Chlorophenol	ND		ug/l	2.0	0.63	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.77	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.6	1
2-Nitrophenol	ND		ug/l	10	1.5	1
4-Nitrophenol	ND		ug/l	10	1.8	1
2,4-Dinitrophenol	ND		ug/l	20	5.5	1
4,6-Dinitro-o-cresol	ND		ug/l	10	2.1	1
Phenol	ND		ug/l	5.0	1.9	1
2-Methylphenol	ND		ug/l	5.0	1.0	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.1	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.72	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1
Pyridine	ND		ug/l	3.5	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	36		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	46		10-120
4-Terphenyl-d14	69		41-149

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/10/17 17:32
Analyst: KL

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.04	1
2-Chloronaphthalene	ND		ug/l	0.20	0.04	1
Fluoranthene	ND		ug/l	0.20	0.04	1
Hexachlorobutadiene	ND		ug/l	0.50	0.04	1
Naphthalene	ND		ug/l	0.20	0.04	1
Benzo(a)anthracene	ND		ug/l	0.20	0.02	1
Benzo(a)pyrene	ND		ug/l	0.20	0.04	1
Benzo(b)fluoranthene	ND		ug/l	0.20	0.02	1
Benzo(k)fluoranthene	ND		ug/l	0.20	0.04	1
Chrysene	ND		ug/l	0.20	0.04	1
Acenaphthylene	ND		ug/l	0.20	0.04	1
Anthracene	ND		ug/l	0.20	0.04	1
Benzo(ghi)perylene	ND		ug/l	0.20	0.04	1
Fluorene	ND		ug/l	0.20	0.04	1
Phenanthrene	ND		ug/l	0.20	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	0.04	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	0.04	1
Pyrene	ND		ug/l	0.20	0.04	1
1-Methylnaphthalene	ND		ug/l	0.20	0.04	1
2-Methylnaphthalene	ND		ug/l	0.20	0.05	1
Pentachlorophenol	ND		ug/l	0.80	0.22	1
Hexachlorobenzene	ND		ug/l	0.80	0.03	1
Hexachloroethane	ND		ug/l	0.80	0.03	1

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01 Date Collected: 05/04/17 12:15

Client ID: INF Date Received: 05/04/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	75		10-120
4-Terphenyl-d14	65		41-149

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/09/17 20:52
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1001142-1					
Acenaphthene	ND		ug/l	2.0	0.59
Benzidine	ND		ug/l	20	8.1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66
Hexachlorobenzene	ND		ug/l	2.0	0.58
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67
2-Chloronaphthalene	ND		ug/l	2.0	0.64
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1
Azobenzene	ND		ug/l	2.0	0.75
Fluoranthene	ND		ug/l	2.0	0.57
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63
Hexachlorobutadiene	ND		ug/l	2.0	0.72
Hexachlorocyclopentadiene	ND		ug/l	20	7.8
Hexachloroethane	ND		ug/l	2.0	0.68
Isophorone	ND		ug/l	5.0	0.60
Naphthalene	ND		ug/l	2.0	0.68
Nitrobenzene	ND		ug/l	2.0	0.75
NDPA/DPA	ND		ug/l	2.0	0.64
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70
Bis(2-ethylhexyl)phthalate	1.5	J	ug/l	3.0	0.91
Butyl benzyl phthalate	ND		ug/l	5.0	1.3
Di-n-butylphthalate	ND		ug/l	5.0	0.69

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/09/17 20:52
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1001142-1					
Di-n-octylphthalate	ND		ug/l	5.0	1.1
Diethyl phthalate	ND		ug/l	5.0	0.63
Dimethyl phthalate	ND		ug/l	5.0	0.65
Benzo(a)anthracene	ND		ug/l	2.0	0.61
Benzo(a)pyrene	ND		ug/l	2.0	0.54
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60
Chrysene	ND		ug/l	2.0	0.54
Acenaphthylene	ND		ug/l	2.0	0.66
Anthracene	ND		ug/l	2.0	0.64
Benzo(ghi)perylene	ND		ug/l	2.0	0.61
Fluorene	ND		ug/l	2.0	0.62
Phenanthrene	ND		ug/l	2.0	0.61
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71
Pyrene	ND		ug/l	2.0	0.57
Biphenyl	ND		ug/l	2.0	0.76
Aniline	ND		ug/l	2.0	0.65
4-Chloroaniline	ND		ug/l	5.0	0.63
1-Methylnaphthalene	ND		ug/l	2.0	0.67
2-Nitroaniline	ND		ug/l	5.0	1.1
3-Nitroaniline	ND		ug/l	5.0	1.2
4-Nitroaniline	ND		ug/l	5.0	1.3
Dibenzofuran	ND		ug/l	2.0	0.66
2-Methylnaphthalene	ND		ug/l	2.0	0.72
n-Nitrosodimethylamine	ND		ug/l	2.0	0.67
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.68
p-Chloro-m-cresol	ND		ug/l	2.0	0.62
2-Chlorophenol	ND		ug/l	2.0	0.63

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/09/17 20:52
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1001142-1					
2,4-Dichlorophenol	ND		ug/l	5.0	0.77
2,4-Dimethylphenol	ND		ug/l	5.0	1.6
2-Nitrophenol	ND		ug/l	10	1.5
4-Nitrophenol	ND		ug/l	10	1.8
2,4-Dinitrophenol	ND		ug/l	20	5.5
4,6-Dinitro-o-cresol	ND		ug/l	10	2.1
Pentachlorophenol	ND		ug/l	10	3.4
Phenol	ND		ug/l	5.0	1.9
2-Methylphenol	ND		ug/l	5.0	1.0
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.72
Benzoic Acid	ND		ug/l	50	13.
Benzyl Alcohol	ND		ug/l	2.0	0.72
Carbazole	ND		ug/l	2.0	0.63
Pyridine	ND		ug/l	3.5	1.9

Tentatively Identified Compounds

No Tentatively Identified Compounds	ND	ug/l

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/09/17 20:52
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1001142-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	66		15-120
2,4,6-Tribromophenol	69		10-120
4-Terphenyl-d14	64		41-149

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/10/17 16:13
Analyst: KL

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1001143-1					
Acenaphthene	ND		ug/l	0.10	0.04
2-Chloronaphthalene	ND		ug/l	0.20	0.04
Fluoranthene	ND		ug/l	0.20	0.04
Hexachlorobutadiene	ND		ug/l	0.50	0.04
Naphthalene	ND		ug/l	0.20	0.04
Benzo(a)anthracene	ND		ug/l	0.20	0.02
Benzo(a)pyrene	ND		ug/l	0.20	0.04
Benzo(b)fluoranthene	ND		ug/l	0.20	0.02
Benzo(k)fluoranthene	ND		ug/l	0.20	0.04
Chrysene	ND		ug/l	0.20	0.04
Acenaphthylene	ND		ug/l	0.20	0.04
Anthracene	ND		ug/l	0.20	0.04
Benzo(ghi)perylene	ND		ug/l	0.20	0.04
Fluorene	ND		ug/l	0.20	0.04
Phenanthrene	ND		ug/l	0.20	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.20	0.04
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	0.04
Pyrene	ND		ug/l	0.20	0.04
1-Methylnaphthalene	ND		ug/l	0.20	0.04
2-Methylnaphthalene	ND		ug/l	0.20	0.05
Pentachlorophenol	ND		ug/l	0.80	0.22
Hexachlorobenzene	ND		ug/l	0.80	0.03
Hexachloroethane	ND		ug/l	0.80	0.03

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/10/17 16:13
Analyst: KL

Extraction Method: EPA 3510C
Extraction Date: 05/07/17 23:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1001143-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	69		15-120
2,4,6-Tribromophenol	75		10-120
4-Terphenyl-d14	70		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1001142-2 WG1001142-3								
Acenaphthene	64		60		37-111	6		30
Benzidine	**8**	Q	15		10-75	**59**	Q	30
1,2,4-Trichlorobenzene	68		60		39-98	13		30
Hexachlorobenzene	70		66		40-140	6		30
Bis(2-chloroethyl)ether	66		63		40-140	5		30
2-Chloronaphthalene	69		65		40-140	6		30
1,2-Dichlorobenzene	62		59		40-140	5		30
1,3-Dichlorobenzene	60		57		40-140	5		30
1,4-Dichlorobenzene	60		57		36-97	5		30
3,3'-Dichlorobenzidine	52		50		40-140	4		30
2,4-Dinitrotoluene	71		67		48-143	6		30
2,6-Dinitrotoluene	76		72		40-140	5		30
Azobenzene	66		62		40-140	6		30
Fluoranthene	66		62		40-140	6		30
4-Chlorophenyl phenyl ether	67		64		40-140	5		30
4-Bromophenyl phenyl ether	70		66		40-140	6		30
Bis(2-chloroisopropyl)ether	70		71		40-140	1		30
Bis(2-chloroethoxy)methane	72		66		40-140	9		30
Hexachlorobutadiene	64		61		40-140	5		30
Hexachlorocyclopentadiene	64		59		40-140	8		30
Hexachloroethane	60		57		40-140	5		30
Isophorone	73		67		40-140	9		30
Naphthalene	62		59		40-140	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1001142-2 WG1001142-3								
Nitrobenzene	70		67		40-140	4		30
NDPA/DPA	67		63		40-140	6		30
n-Nitrosodi-n-propylamine	70		70		29-132	0		30
Bis(2-ethylhexyl)phthalate	72		67		40-140	7		30
Butyl benzyl phthalate	68		64		40-140	6		30
Di-n-butylphthalate	67		64		40-140	5		30
Di-n-octylphthalate	71		67		40-140	6		30
Diethyl phthalate	68		64		40-140	6		30
Dimethyl phthalate	74		71		40-140	4		30
Benzo(a)anthracene	66		62		40-140	6		30
Benzo(a)pyrene	68		65		40-140	5		30
Benzo(b)fluoranthene	68		66		40-140	3		30
Benzo(k)fluoranthene	69		64		40-140	8		30
Chrysene	66		62		40-140	6		30
Acenaphthylene	71		68		45-123	4		30
Anthracene	66		61		40-140	8		30
Benzo(ghi)perylene	67		63		40-140	6		30
Fluorene	65		62		40-140	5		30
Phenanthrene	64		60		40-140	6		30
Dibenzo(a,h)anthracene	68		63		40-140	8		30
Indeno(1,2,3-cd)pyrene	68		64		40-140	6		30
Pyrene	66		62		26-127	6		30
Biphenyl	72		69		40-140	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1001142-2 WG1001142-3								
Aniline	44		45		40-140	2		30
4-Chloroaniline	54		56		40-140	4		30
1-Methylnaphthalene	70		66		41-103	6		30
2-Nitroaniline	74		70		52-143	6		30
3-Nitroaniline	50		50		25-145	0		30
4-Nitroaniline	65		61		51-143	6		30
Dibenzofuran	66		63		40-140	5		30
2-Methylnaphthalene	66		62		40-140	6		30
n-Nitrosodimethylamine	40		37		22-74	8		30
2,4,6-Trichlorophenol	77		73		30-130	5		30
p-Chloro-m-cresol	72		69		23-97	4		30
2-Chlorophenol	66		64		27-123	3		30
2,4-Dichlorophenol	76		68		30-130	11		30
2,4-Dimethylphenol	68		64		30-130	6		30
2-Nitrophenol	71		65		30-130	9		30
4-Nitrophenol	56		48		10-80	15		30
2,4-Dinitrophenol	67		65		20-130	3		30
4,6-Dinitro-o-cresol	66		63		20-164	5		30
Pentachlorophenol	58		56		9-103	4		30
Phenol	32		32		12-110	0		30
2-Methylphenol	61		59		30-130	3		30
3-Methylphenol/4-Methylphenol	60		58		30-130	3		30
2,4,5-Trichlorophenol	76		72		30-130	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714337

Report Date: 06/14/17

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: WG1001142-2 WG1001142-3								
Benzoic Acid	25		27		10-164	8		30
Benzyl Alcohol	63		62		26-116	2		30
Carbazole	65		62		55-144	5		30
Pyridine	33		31		10-66	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	48		44		21-120
Phenol-d6	34		33		10-120
Nitrobenzene-d5	69		68		23-120
2-Fluorobiphenyl	68		66		15-120
2,4,6-Tribromophenol	72		69		10-120
4-Terphenyl-d14	66		62		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1001143-2 WG1001143-3								
Acenaphthene	49		69		37-111	34		40
2-Chloronaphthalene	53		74		40-140	33		40
Fluoranthene	55		77		40-140	33		40
Hexachlorobutadiene	47		67		40-140	35		40
Naphthalene	48		69		40-140	36		40
Benzo(a)anthracene	54		74		40-140	31		40
Benzo(a)pyrene	59		81		40-140	31		40
Benzo(b)fluoranthene	58		79		40-140	31		40
Benzo(k)fluoranthene	57		76		40-140	29		40
Chrysene	48		65		40-140	30		40
Acenaphthylene	56		79		40-140	34		40
Anthracene	53		74		40-140	33		40
Benzo(ghi)perylene	59		81		40-140	31		40
Fluorene	52		73		40-140	34		40
Phenanthrene	48		68		40-140	34		40
Dibenzo(a,h)anthracene	61		84		40-140	32		40
Indeno(1,2,3-cd)pyrene	58		82		40-140	34		40
Pyrene	54		76		26-127	34		40
1-Methylnaphthalene	52		73		40-140	34		40
2-Methylnaphthalene	53		75		40-140	34		40
Pentachlorophenol	56		79		9-103	34		40
Hexachlorobenzene	50		69		40-140	32		40
Hexachloroethane	45		66		40-140	38		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714337
Report Date: 06/14/17

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: WG1001143-2 WG1001143-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	34		48		21-120
Phenol-d6	25		35		10-120
Nitrobenzene-d5	56		79		23-120
2-Fluorobiphenyl	52		73		15-120
2,4,6-Tribromophenol	56		76		10-120
4-Terphenyl-d14	56		76		41-149

PCBS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA

Matrix: Water
Analytical Method: 5,608
Analytical Date: 05/09/17 00:04
Analyst: HT

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 05/08/17 05:17
Cleanup Method: EPA 3665A
Cleanup Date: 05/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 05/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	0.042	1	A
Aroclor 1221	ND		ug/l	0.250	0.056	1	A
Aroclor 1232	ND		ug/l	0.250	0.024	1	A
Aroclor 1242	ND		ug/l	0.250	0.028	1	A
Aroclor 1248	ND		ug/l	0.250	0.028	1	A
Aroclor 1254	0.101	J	ug/l	0.250	0.043	1	A
Aroclor 1260	ND		ug/l	0.200	0.045	1	A

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 05/09/17 00:29
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 05/08/17 05:17
Cleanup Method: EPA 3665A
Cleanup Date: 05/08/17
Cleanup Method: EPA 3660B
Cleanup Date: 05/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1001153-1						
Aroclor 1016	ND		ug/l	0.250	0.042	A
Aroclor 1221	ND		ug/l	0.250	0.056	A
Aroclor 1232	ND		ug/l	0.250	0.024	A
Aroclor 1242	ND		ug/l	0.250	0.028	A
Aroclor 1248	ND		ug/l	0.250	0.028	A
Aroclor 1254	ND		ug/l	0.250	0.043	A
Aroclor 1260	ND		ug/l	0.200	0.045	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	89		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1001153-2									
Aroclor 1016	85		-		30-150	-		30	A
Aroclor 1260	96		-		30-150	-		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64				30-150	A
Decachlorobiphenyl	84				30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714337

Report Date: 06/14/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001153-3 QC Sample: L1714670-02 Client ID: MS Sample													
Aroclor 1016	ND	3.12	3.05	98		-	-		40-126	-		30	A
Aroclor 1260	ND	3.12	2.88	92		-	-		40-127	-		30	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79				30-150	A
Decachlorobiphenyl	63				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001153-4 QC Sample: L1714670-03 Client ID: DUP Sample							
Aroclor 1016	ND	ND	ug/l	NC		30	A
Aroclor 1221	ND	ND	ug/l	NC		30	A
Aroclor 1232	ND	ND	ug/l	NC		30	A
Aroclor 1242	0.033J	0.055J	ug/l	NC		30	A
Aroclor 1248	ND	ND	ug/l	NC		30	A
Aroclor 1254	0.052J	0.099J	ug/l	NC		30	A
Aroclor 1260	ND	ND	ug/l	NC		30	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		73		30-150	A
Decachlorobiphenyl	59		56		30-150	A

METALS

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	0.00042	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00022	J	mg/l	0.00100	0.00016	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00033	J	mg/l	0.00100	0.00005	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Chromium, Total	0.00164		mg/l	0.00100	0.00017	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Copper, Total	0.00516		mg/l	0.00100	0.00038	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Iron, Total	0.107		mg/l	0.050	0.009	1	05/05/17 07:55	05/08/17 10:44	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00050	0.00034	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	0.00006	1	05/05/17 14:09	05/05/17 19:10	EPA 245.1	3,245.1	EA
Nickel, Total	0.00488		mg/l	0.00200	0.00055	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	0.00173	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00100	0.00026	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Zinc, Total	0.00673	J	mg/l	0.0100	0.00341	1	05/05/17 07:55	05/05/17 11:59	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	447		mg/l	0.660	NA	1	05/05/17 07:55	05/08/17 10:44	EPA 3005A	19,200.7	PS
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	0.010	1		05/05/17 11:59	NA	107,-	

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1000580-1										
Antimony, Total	ND		mg/l	0.00400	0.00042	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	0.0002	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00100	0.00005	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	0.00017	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	0.00038	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Lead, Total	ND		mg/l	0.0005	0.0003	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	0.00055	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Selenium, Total	ND		mg/l	0.0050	0.0017	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Silver, Total	ND		mg/l	0.00100	0.00026	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	0.00341	1	05/05/17 07:55	05/05/17 11:41	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1000583-1										
Iron, Total	ND		mg/l	0.050	0.009	1	05/05/17 07:55	05/08/17 10:36	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1000583-1										
Hardness	ND		mg/l	0.660	NA	1	05/05/17 07:55	05/08/17 10:36	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1000753-1										
Mercury, Total	ND		mg/l	0.0002	0.0001	1	05/05/17 14:09	05/05/17 18:44	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1000580-2								
Antimony, Total	102		-		85-115	-		
Arsenic, Total	110		-		85-115	-		
Cadmium, Total	113		-		85-115	-		
Chromium, Total	100		-		85-115	-		
Copper, Total	99		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	100		-		85-115	-		
Selenium, Total	106		-		85-115	-		
Silver, Total	102		-		85-115	-		
Zinc, Total	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1000583-2								
Iron, Total	109		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1000583-2								
Hardness	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1000753-2								
Mercury, Total	114		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000580-3 QC Sample: L1714337-01 Client ID: INF												
Antimony, Total	ND	0.5	0.5456	109		-	-		70-130	-		20
Arsenic, Total	0.00022J	0.12	0.1316	110		-	-		70-130	-		20
Cadmium, Total	0.00033J	0.051	0.05451	107		-	-		70-130	-		20
Chromium, Total	0.00164	0.2	0.2007	100		-	-		70-130	-		20
Copper, Total	0.00516	0.25	0.2448	96		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5364	105		-	-		70-130	-		20
Nickel, Total	0.00488	0.5	0.4896	97		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1356	113		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04842	97		-	-		70-130	-		20
Zinc, Total	0.00673J	0.5	0.5224	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000583-3 QC Sample: L1714337-01 Client ID: INF												
Iron, Total	0.107	1	1.12	101		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000583-3 QC Sample: L1714337-01 Client ID: INF												
Hardness	447.	66.2	471	**36**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000753-3 QC Sample: L1714406-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0055	110		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000753-5 QC Sample: L1714413-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0052	104		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000580-4 QC Sample: L1714337-01 Client ID: INF						
Antimony, Total	ND	0.00062J	mg/l	NC		20
Arsenic, Total	0.00022J	0.0003J	mg/l	NC		20
Cadmium, Total	0.00033J	0.00032J	mg/l	NC		20
Chromium, Total	0.00164	0.00167	mg/l	2		20
Copper, Total	0.00516	0.00535	mg/l	4		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.00488	0.00486	mg/l	0		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.00673J	0.00465J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000583-4 QC Sample: L1714337-01 Client ID: INF						
Iron, Total	0.107	0.110	mg/l	3		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000583-4 QC Sample: L1714337-01 Client ID: INF						
Hardness	447.	439	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000753-4 QC Sample: L1714406-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000753-6 QC Sample: L1714413-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

SAMPLE RESULTS

Lab ID: L1714337-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 05/04/17 12:15
Date Received: 05/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/06/17 01:33	121,2540D	VB
Cyanide, Total	ND		mg/l	0.005	0.001	1	05/08/17 10:30	05/08/17 14:46	121,4500CN-CE	LK
Chlorine, Total Residual	ND		mg/l	0.02	0.01	1	-	05/04/17 22:30	121,4500CL-D	AS
Nitrogen, Ammonia	0.303		mg/l	0.075	0.022	1	05/09/17 13:39	05/09/17 21:21	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	1.24	1	05/08/17 16:30	05/08/17 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	0.010	1	05/09/17 15:21	05/10/17 14:59	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	05/05/17 01:30	05/05/17 02:23	1,7196A	JT
Anions by Ion Chromatography - Westborough Lab										
Chloride	608.		mg/l	25.0	4.20	50	-	05/07/17 01:47	44,300.0	JC

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

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: WG1000488-1										
Chlorine, Total Residual	ND		mg/l	0.02	0.01	1	-	05/04/17 22:30	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1000505-1										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	05/05/17 01:30	05/05/17 02:16	1,7196A	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1000902-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/06/17 01:33	121,2540D	VB
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1001110-1										
Chloride	ND		mg/l	0.500	0.083	1	-	05/06/17 19:46	44,300.0	JC
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1001236-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	05/08/17 10:30	05/08/17 14:38	121,4500CN-CE	LK
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1001399-1										
TPH, SGT-HEM	ND		mg/l	4.00	1.24	1	05/08/17 16:30	05/08/17 21:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1001579-1										
Nitrogen, Ammonia	0.032	J	mg/l	0.075	0.022	1	05/09/17 13:39	05/09/17 21:08	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1001732-1										
Phenolics, Total	ND		mg/l	0.030	0.010	1	05/09/17 15:21	05/10/17 14:56	4,420.1	AW

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1000488-2								
Chlorine, Total Residual	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1000505-2								
Chromium, Hexavalent	96		-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1001110-2								
Chloride	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1001236-2								
Cyanide, Total	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1001399-2								
TPH	94		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1001579-2								
Nitrogen, Ammonia	94		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1001732-2								
Phenolics, Total	92		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

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: WG1000488-4 QC Sample: L1714337-01 Client ID: INF												
Chlorine, Total Residual	ND	0.248	0.25	101		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1000505-4 QC Sample: L1714337-01 Client ID: INF												
Chromium, Hexavalent	ND	0.1	0.103	103		-	-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001110-3 QC Sample: L1714286-01 Client ID: MS Sample												
Chloride	18.1	4	21.6	**89**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001236-4 QC Sample: L1714448-02 Client ID: MS Sample												
Cyanide, Total	0.003J	0.2	0.196	98		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001399-4 QC Sample: L1714569-01 Client ID: MS Sample												
TPH	ND	25	21.2	85		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001579-4 QC Sample: L1713948-01 Client ID: MS Sample												
Nitrogen, Ammonia	0.027J	4	3.84	96		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001732-4 QC Sample: L1714337-01 Client ID: INF												
Phenolics, Total	ND	0.4	0.40	101		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1000488-3 QC Sample: L1714337-01 Client ID: INF						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1000505-3 QC Sample: L1714337-01 Client ID: INF						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1000902-2 QC Sample: L1714322-01 Client ID: DUP Sample						
Solids, Total Suspended	520	470	mg/l	10		29
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001110-4 QC Sample: L1714286-01 Client ID: DUP Sample						
Chloride	18.1	18.1	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001236-3 QC Sample: L1714432-08 Client ID: DUP Sample						
Cyanide, Total	ND	0.001J	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001399-3 QC Sample: L1714569-02 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001579-3 QC Sample: L1713948-01 Client ID: DUP Sample						
Nitrogen, Ammonia	0.027J	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1001732-3 QC Sample: L1714337-01 Client ID: INF						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714337
Report Date: 06/14/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1714337-01A	Plastic 250ml HNO3 preserved	A	<2	<2	3.7	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1714337-01B	Amber 1000ml Na2S2O3	A	7	7	3.7	Y	Absent		PCB-608(7)
L1714337-01C	Amber 1000ml Na2S2O3	A	7	7	3.7	Y	Absent		PCB-608(7)
L1714337-01D	Amber 1000ml unpreserved	A	7	7	3.7	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1714337-01E	Amber 1000ml unpreserved	A	7	7	3.7	Y	Absent		8270TCL(7),8270TCL-SIM(7),504(14)
L1714337-01F	Vial unpreserved	A	N/A	N/A	3.7	Y	Absent		SUB-ETHANOL(14)
L1714337-01G	Vial unpreserved	A	N/A	N/A	3.7	Y	Absent		SUB-ETHANOL(14)
L1714337-01H	Vial Na2S2O3 preserved split	A	N/A	N/A	3.7	Y	Absent		504(14)
L1714337-01I	Vial Na2S2O3 preserved split	A	N/A	N/A	3.7	Y	Absent		504(14)
L1714337-01J	Vial HCl preserved	A	N/A	N/A	3.7	Y	Absent		8260-SIM(14),8260(14)
L1714337-01K	Vial HCl preserved	A	N/A	N/A	3.7	Y	Absent		8260-SIM(14),8260(14)
L1714337-01L	Vial HCl preserved	A	N/A	N/A	3.7	Y	Absent		8260-SIM(14),8260(14)
L1714337-01M	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L1714337-01N	Plastic 950ml unpreserved	A	7	7	3.7	Y	Absent		TSS-2540(7)
L1714337-01O	Plastic 250ml NaOH preserved	A	>12	>12	3.7	Y	Absent		TCN-4500(14)
L1714337-01P	Amber 1000ml HCl preserved	A	N/A	N/A	3.7	Y	Absent		TPH-1664(28)
L1714337-01Q	Amber 1000ml HCl preserved	A	N/A	N/A	3.7	Y	Absent		TPH-1664(28)
L1714337-01R	Amber 950ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		TPHENOL-420(28)
L1714337-01T	Plastic 500ml H2SO4 preserved	A	<2	<2	3.7	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1714337
Project Number:	01.0015522.17	**Report Date:**	06/14/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers

Project Name: HP WALTHAM **Lab Number:** L1714337

Project Number: 01.0015522.17 **Report Date:** 06/14/17

Data Qualifiers

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name: HP WALTHAM **Lab Number:** L1714337
Project Number: 01.0015522.17 **Report Date:** 06/14/17

REFERENCES

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

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

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

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

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.

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.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/4/17

ALPHA Job #: L1714337

ALPHA ANALYTICAL World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave Norwood Ma 02062
Phone: 781-983-1357
Email: wdavis@gza.com

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.17
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Hex chrom has 24-hour hold time

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:
Please report with detection limits in accordance with the 2017 RPP requirements.

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH 82700 82700-SIM; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ☐ RCRA8 Total / Hg 6020A / 245.1; ~~EPH: ☐ Ranges & Targets ☐ Ranges Only~~; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☒ PCB ☐ PEST EPA 608; TPH: ☐ Quant Only ☐ Fingerprint; ☒ Cyanide SM4500; TSS - SM2540; TPH - 1664; Phenol - EPA 420.1; NH-3; Ethanol

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Cyanide	TSS	TPH	Phenol	NH-3	Ethanol	Sample Comments	Total # Bottles
14337-01	INF	5/4/17	1215pm	GW	BD	X	X		X	X		X		X	X	X	X	X	X	VOCs - 8260C	17
																				1,4-Dioxane 8260 SIM	
																				82700/82700SIM SVOCs	
																				Ammonia Nitrogen SM 4500	
																				Chloride SM4500	
																				TSS - SM2540	
																				TRC - SM4500	
																				Hex Chrom. - 7196	
																				Cyanide - SM4500	
																				Total Phenol - 420.1	
																				TPH - 1664	
																				PCB - 608	
																				RCP13 Metals - 6020A/245.1	
																				Ethanol	

Container Type	V	A		P	P	A		P	A	A	P	V	
Preservative	HCL	/		HNO3	NaOH	Na2S2O3		/	HCL	H2SO4	H2SO4	/	

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H= $Na_2S_2O_3$, I= Ascorbic Acid, J= NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/4/17 1100pm	[signature]	5/4/17 1310
MCM	5/4/17 1745	[signature]	5/4/17 17:45

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

504

SUB-UPS: Eurofins- Lancaster PA

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1714337

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Nichole Hunt
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1714337 on this report.

Report data to MDL

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ETHANOL-Method 1671I	Sample Specific Comments	TOTAL # BOTTLES
	INF	5/4/17	12:15	GW		x		2

Container Type	V	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	N/A	-	-	-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	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 Payment Terms

FORM NO: 01-01(I)
(rev. 30-JUL-07)

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

Report Date: May 17, 2017

Project: L1714337

Submittal Date: 05/06/2017
Group Number: 1798347
PO Number: L1714337
State of Sample Origin: MA

Client Sample Description	Lancaster Labs (LL) #
INF Groundwater Sample	8980336

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Alpha Analytical, Inc.	Attn: Nichole Hunt
Electronic Copy To	Alpha Analytical, Inc.	Attn: Sublab Contact

Respectfully Submitted,

Bonnie Stadelmann

Bonnie Stadelmann
Senior Project Manager

(312) 590-3133

eurofins
Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: INF Groundwater Sample
L1714337

LL Sample # WW 8980336
LL Group # 1798347
Account # 09847

Project Name: L1714337

Collected: 05/04/2017 12:15

Submitted: 05/06/2017 09:00
Reported: 05/17/2017 16:25

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

14337

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Miscellaneous	**EPA 1671 Rev A**		**ug/l**	**ug/l**	
02366	ethanol	64-17-5	N.D.	670	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02366	EPA 1671 VOCs	EPA 1671 Rev A	1	171300041A	05/11/2017 00:04	Tyler O Griffin	1

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc. Group Number: 1798347
Reported: 05/17/2017 16:25

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result ug/l	MDL ug/l
Batch number: 171300041A	Sample number(s): 8980336	
ethanol	N.D.	670

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 171300041A	Sample number(s): 8980336								
ethanol	4000	3979.35	4000	3876.82	99	97	70-132	3	30

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 171300041A	Sample number(s): 8980336 UNSPK: 8980336									
ethanol	N.D.	4000	4005.41	4000	4119.95	100	103	70-132	3	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EPA 1671 VOCs
Batch number: 171300041A

	Amyl Alcohol
8980336	104
Blank	108
LCS	111

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

eurofins
Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc.
Reported: 05/17/2017 16:25

Group Number: 1798347

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EPA 1671 VOCs
Batch number: 171300041A

	Amyl Alcohol
LCSD	113
MS	114
MSD	115
Limits:	52-144

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

SUB-UPS: Eurofins- Lancaster PA 9847/1798347/8980336

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1714337

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Nichole Hunt
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
NPDES RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1714337 on this report.

Report data to MDL

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ETHANOL-Method 1671I	Sample Specific Comments	TOTAL # BOTTLES
	INF	5/4/17	12:15	GW		x		2

Container Type	V	-	-	-	-	-	-	-	-	-	-	-
Preservative	N/A	-	-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	5/5/17	[illegible]	
		Nic dmitt	5/6/17 9:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 182997

Group Number(s): 1798347

Client: Alpha Analytical

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	05/06/2017 9:00
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nia Smith (12375) at 12:52 on 05/06/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	5.0	DT	Wet	Y	Loose/Bag	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

eurofins | Lancaster Laboratories Environmental

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL REPORT

Lab Number:	L1719082
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	06/15/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719082-01	INF	WATER	WALTHAM, MA	06/08/17 10:40	06/08/17
L1719082-02	MID	WATER	WALTHAM, MA	06/08/17 10:27	06/08/17
L1719082-03	EFF	WATER	WALTHAM, MA	06/08/17 10:20	06/08/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Case Narrative (continued)

Metals

The WG1012633-4 Laboratory Duplicate RPD, performed on L1719082-01, is above the acceptance criteria for iron (23%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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: Cristin Walker

Title: Technical Director/Representative

Date: 06/15/17

ORGANICS

VOLATILES

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1719082
Report Date: 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-01 D
Client ID: INF
Sample Location: WALTHAM, MA

Date Collected: 06/08/17 10:40
Date Received: 06/08/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/13/17 13:31
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	150	--	50
1,1-Dichloroethane	ND		ug/l	38	--	50
Chloroform	ND		ug/l	38	--	50
Carbon tetrachloride	ND		ug/l	25	--	50
1,2-Dichloropropane	ND		ug/l	88	--	50
Dibromochloromethane	ND		ug/l	25	--	50
1,1,2-Trichloroethane	ND		ug/l	38	--	50
Tetrachloroethene	47		ug/l	25	--	50
Chlorobenzene	ND		ug/l	25	--	50
Trichlorofluoromethane	ND		ug/l	120	--	50
1,2-Dichloroethane	ND		ug/l	25	--	50
1,1,1-Trichloroethane	ND		ug/l	25	--	50
Bromodichloromethane	ND		ug/l	25	--	50
trans-1,3-Dichloropropene	ND		ug/l	25	--	50
cis-1,3-Dichloropropene	ND		ug/l	25	--	50
Bromoform	ND		ug/l	100	--	50
1,1,2,2-Tetrachloroethane	ND		ug/l	25	--	50
Benzene	ND		ug/l	25	--	50
Toluene	ND		ug/l	38	--	50
Ethylbenzene	ND		ug/l	25	--	50
Chloromethane	ND		ug/l	120	--	50
Bromomethane	ND		ug/l	50	--	50
Vinyl chloride	ND		ug/l	50	--	50
Chloroethane	ND		ug/l	50	--	50
1,1-Dichloroethene	ND		ug/l	25	--	50
trans-1,2-Dichloroethene	ND		ug/l	38	--	50
Trichloroethene	7400		ug/l	25	--	50
1,2-Dichlorobenzene	ND		ug/l	120	--	50
1,3-Dichlorobenzene	ND		ug/l	120	--	50
1,4-Dichlorobenzene	ND		ug/l	120	--	50

Project Name: HP WALTHAM **Lab Number:** L1719082

Project Number: 01.0015522.17 **Report Date:** 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-01 D Date Collected: 06/08/17 10:40

Client ID: INF Date Received: 06/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	50	--	50
p/m-Xylene	ND		ug/l	50	--	50
o-Xylene	ND		ug/l	50	--	50
cis-1,2-Dichloroethene	ND		ug/l	25	--	50
Dichlorodifluoromethane	ND		ug/l	250	--	50
Naphthalene	ND		ug/l	120	--	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1719082
Report Date: 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-02
Client ID: MID
Sample Location: WALTHAM, MA

Date Collected: 06/08/17 10:27
Date Received: 06/08/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/13/17 14:07
Analyst: KD

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
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	14		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: HP WALTHAM **Lab Number:** L1719082

Project Number: 01.0015522.17 **Report Date:** 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-02 Date Collected: 06/08/17 10:27

Client ID: MID Date Received: 06/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	100		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17
Lab Number: L1719082
Report Date: 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-03
Client ID: EFF
Sample Location: WALTHAM, MA

Date Collected: 06/08/17 10:20
Date Received: 06/08/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/13/17 14:43
Analyst: KD

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
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	3.2		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: HP WALTHAM **Lab Number:** L1719082

Project Number: 01.0015522.17 **Report Date:** 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-03 Date Collected: 06/08/17 10:20

Client ID: EFF Date Received: 06/08/17

Sample Location: WALTHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	98		70-130

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/13/17 09:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1012763-5					
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	--
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	--

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/13/17 09:56
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1012763-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
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	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1012763-3 WG1012763-4								
Methylene chloride	98		100		70-130	2		20
1,1-Dichloroethane	100		110		70-130	10		20
Chloroform	110		120		70-130	9		20
Carbon tetrachloride	120		120		63-132	0		20
1,2-Dichloropropane	120		120		70-130	0		20
Dibromochloromethane	110		120		63-130	9		20
1,1,2-Trichloroethane	120		120		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		120		75-130	9		25
Trichlorofluoromethane	92		96		62-150	4		20
1,2-Dichloroethane	120		120		70-130	0		20
1,1,1-Trichloroethane	110		120		67-130	9		20
Bromodichloromethane	120		120		67-130	0		20
trans-1,3-Dichloropropene	98		100		70-130	2		20
cis-1,3-Dichloropropene	120		130		70-130	8		20
Bromoform	110		120		54-136	9		20
1,1,2,2-Tetrachloroethane	120		120		67-130	0		20
Benzene	110		120		70-130	9		25
Toluene	110		110		70-130	0		25
Ethylbenzene	120		120		70-130	0		20
Chloromethane	**150**	Q	**160**	Q	64-130	6		20
Bromomethane	84		92		39-139	9		20
Vinyl chloride	120		120		55-140	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1012763-3 WG1012763-4								
Chloroethane	98		100		55-138	2		20
1,1-Dichloroethene	92		98		61-145	6		25
trans-1,2-Dichloroethene	100		110		70-130	10		20
Trichloroethene	110		120		70-130	9		25
1,2-Dichlorobenzene	110		120		70-130	9		20
1,3-Dichlorobenzene	110		120		70-130	9		20
1,4-Dichlorobenzene	110		120		70-130	9		20
Methyl tert butyl ether	120		130		63-130	8		20
p/m-Xylene	120		125		70-130	4		20
o-Xylene	120		130		70-130	8		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dichlorodifluoromethane	100		110		36-147	10		20
Naphthalene	130		**140**	Q	70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		105		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	100		100		70-130

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1719082
Project Number:	01.0015522.17	**Report Date:**	06/15/17

SAMPLE RESULTS

Lab ID:	L1719082-01	Date Collected:	06/08/17 10:40
Client ID:	INF	Date Received:	06/08/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00795		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 11:46	EPA 3005A	1,6020A	AM
Iron, Total	0.116		mg/l	0.050	--	1	06/13/17 14:35	06/15/17 00:45	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 11:46	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/13/17 14:35	06/14/17 11:46	EPA 3005A	1,6020A	AM
Zinc, Total	0.01627		mg/l	0.01000	--	1	06/13/17 14:35	06/14/17 11:46	EPA 3005A	1,6020A	AM

Project Name:	HP WALTHAM	**Lab Number:**	L1719082
Project Number:	01.0015522.17	**Report Date:**	06/15/17

SAMPLE RESULTS

Lab ID:	L1719082-03	Date Collected:	06/08/17 10:20
Client ID:	EFF	Date Received:	06/08/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Copper, Total	0.00202		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 12:34	EPA 3005A	1,6020A	AM
Iron, Total	ND		mg/l	0.050	--	1	06/13/17 14:35	06/15/17 01:34	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 12:34	EPA 3005A	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/13/17 14:35	06/14/17 12:34	EPA 3005A	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/13/17 14:35	06/14/17 12:34	EPA 3005A	1,6020A	AM

Project Name: HP WALTHAM **Lab Number:** L1719082

Project Number: 01.0015522.17 **Report Date:** 06/15/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1012633-1										
Iron, Total	ND		mg/l	0.050	--	1	06/13/17 14:35	06/14/17 23:32	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1012636-1										
Copper, Total	ND		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 11:30	1,6020A	AM
Lead, Total	ND		mg/l	0.00100	--	1	06/13/17 14:35	06/14/17 11:30	1,6020A	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/13/17 14:35	06/14/17 11:30	1,6020A	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/13/17 14:35	06/14/17 11:30	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1012633-2								
Iron, Total	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1012636-2								
Copper, Total	103		-		80-120	-		
Lead, Total	107		-		80-120	-		
Selenium, Total	100		-		80-120	-		
Zinc, Total	105		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1012633-3 QC Sample: L1719082-01 Client ID: INF												
Iron, Total	0.116	1	1.10	98		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1012636-3 QC Sample: L1719082-01 Client ID: INF												
Copper, Total	0.00795	0.25	0.2634	102		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5329	104		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.130	108		-	-		75-125	-		20
Zinc, Total	0.01627	0.5	0.5388	104		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1012633-4 QC Sample: L1719082-01 Client ID: INF						
Iron, Total	0.116	0.092	mg/l	**23**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1012636-4 QC Sample: L1719082-01 Client ID: INF						
Copper, Total	0.00795	0.00782	mg/l	2		20
Lead, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01627	0.01631	mg/l	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-01
Client ID: INF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 06/08/17 10:40
Date Received: 06/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	580		mg/l	10	--	10	-	06/10/17 18:25	1,9251	MR

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

SAMPLE RESULTS

Lab ID: L1719082-03
Client ID: EFF
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 06/08/17 10:20
Date Received: 06/08/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chloride	580		mg/l	10	--	10	-	06/10/17 18:27	1,9251	MR

Project Name: HP WALTHAM **Lab Number:** L1719082

Project Number: 01.0015522.17 **Report Date:** 06/15/17

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): 01,03 Batch: WG1011944-1										
Chloride	ND		mg/l	1.0	--	1	-	06/10/17 17:37	1,9251	MR

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1719082

Report Date: 06/15/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1011944-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

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): 01,03 QC Batch ID: WG1011944-4 QC Sample: L1719238-02 Client ID: MS Sample												
Chloride	190	20	210	100		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1011944-3 QC Sample: L1719238-02 Client ID: DUP Sample						
Chloride	190	190	mg/l	0		7

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1719082
Report Date: 06/15/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719082-01A	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-01B	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-01C	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-01D	Plastic 250ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1719082-01E	Plastic 60ml unpreserved	A	7	7	5.6	Y	Absent		CL-9251(28)
L1719082-02A	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-02B	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-02C	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-03A	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-03B	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-03C	Vial HCl preserved	A	NA		5.6	Y	Absent		8260(14)
L1719082-03D	Plastic 250ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		SE-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180)
L1719082-03E	Plastic 60ml unpreserved	A	7	7	5.6	Y	Absent		CL-9251(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1719082
Project Number:	01.0015522.17	**Report Date:**	06/15/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Project Name:	HP WALTHAM	**Lab Number:**	L1719082
Project Number:	01.0015522.17	**Report Date:**	06/15/17

Data Qualifiers

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1719082
Project Number: 01.0015522.17 **Report Date:** 06/15/17

REFERENCES

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

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.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 6/8/17

ALPHA Job #: L1719082

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220
320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave Norwood Ma 02062
Phone: 781-987-1357
Email: wdavis@gza.com

Additional Project Information:

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma.
Project #: 01.0015522.17
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☑ 8260 ☐ 624 ☐ 524.2 (80-10 1:54)
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Chloride
Metals: Cu, Fe, Pb, Se, Zn

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Chloride	Metals				Sample Comments	TOTAL # BOTTLES
19082-01	INF	6/8/17	1040am	GW	BD	X								X	X					5
02	MID	↓	1027am	↓	↓	X														3
03	EFF	↓	1020am	↓	↓	X								X	X					5

Container Type	V								P	P			
Preservative	HCL								/	HNO3			

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	6/8/17 100pm	[signature] AAL	6/8/17 12:15
[signature] AAL	6/8/17 1355	[signature]	6/8/17 1355

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

APPENDIX D

RECEIVING WATER LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

Lab Number:	L1714338
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	HP WALTHAM
Project Number:	01.0015522.17
Report Date:	05/10/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1714338-01	SW	WATER	WALTHAM, MA	05/04/17 12:40	05/04/17

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. All specific QC 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. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

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: 05/10/17

METALS

Project Name:	HP WALTHAM	**Lab Number:**	L1714338
Project Number:	01.0015522.17	**Report Date:**	05/10/17

SAMPLE RESULTS

Lab ID:	L1714338-01	Date Collected:	05/04/17 12:40
Client ID:	SW	Date Received:	05/04/17
Sample Location:	WALTHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	99.4		mg/l	0.660	NA	1	05/05/17 11:18	05/05/17 20:07	EPA 3005A	19,200.7	PS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1000654-1										
Hardness	ND		mg/l	0.660	NA	1	05/05/17 11:18	05/05/17 18:29	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714338

Report Date: 05/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1000654-2								
Hardness	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000654-3 QC Sample: L1714327-01 Client ID: MS Sample												
Hardness	86.0	66.2	144	88		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1000654-7 QC Sample: L1714341-01 Client ID: MS Sample												
Hardness	423	66.2	452	**44**	Q	-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

SAMPLE RESULTS

Lab ID: L1714338-01
Client ID: SW
Sample Location: WALTHAM, MA
Matrix: Water

Date Collected: 05/04/17 12:40
Date Received: 05/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/05/17 15:01	05/08/17 21:18	121,4500NH3-BH	AT

Project Name: HP WALTHAM **Lab Number:** L1714338

Project Number: 01.0015522.17 **Report Date:** 05/10/17

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: WG1000607-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/05/17 15:01	05/08/17 21:11	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: HP WALTHAM

Project Number: 01.0015522.17

Lab Number: L1714338

Report Date: 05/10/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1000607-2								
Nitrogen, Ammonia	95		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

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: WG1000607-4 QC Sample: L1713722-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.88	97		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1000607-3 QC Sample: L1713722-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20

Project Name: HP WALTHAM
Project Number: 01.0015522.17

Lab Number: L1714338
Report Date: 05/10/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information	Custody Seal
Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1714338-01A	Plastic 250ml HNO3 preserved	A	<2	3.7	Y	Absent	HARDU(180)
L1714338-01B	Plastic 500ml H2SO4 preserved	A	<2	3.7	Y	Absent	NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	HP WALTHAM	**Lab Number:**	L1714338
Project Number:	01.0015522.17	**Report Date:**	05/10/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
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.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Project Name: HP WALTHAM **Lab Number:** L1714338

Project Number: 01.0015522.17 **Report Date:** 05/10/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: HP WALTHAM **Lab Number:** L1714338
Project Number: 01.0015522.17 **Report Date:** 05/10/17

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.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/4/17

ALPHA Job #: L1714338

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GZA
Address: 249 Vanderbilt Ave
Norwood Ma 02062
Phone: 781-983-1957
Email: wdavis@gza.com

Project Information

Project Name: HP Waltham
Project Location: Waltham Ma
Project #: 01.0015522.17
Project Manager: J. Colbert
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:
Please report with detection limits in accordance with the 2017 RGP requirements.

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Total Hardness; Ammonia Nitrogen SM 4500

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Hardness	Ammonia Nitrogen SM 4500	Sample Comments	TOTAL # BOTTLES
14338-01	SW	5/4/17	1240pm	SW	BD	X	X		2
Container Type						P	P		
Preservative						HNO3	H2SO4		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
BD	5/4/17 1:10pm	MGM AR	5/4/17 1310
MGM	5/4/17 1745	[illegible signature]	5/4/17 1714

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

APPENDIX E

CALCULATION SHEETS FOR EFFLUENT LIMITATIONS

Enter number values in green boxes below

Enter values in the units specified

↓

0	Q_R = Enter upstream flow in **MGD**	Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry
0.1008	Q_P = Enter discharge flow in **MGD**	Discharge flow is equal to the design flow or 1 MGD, whichever is less
0	Downstream 7Q10	Only if approved by State as the entry for Q_R; leave 0 if no entry

Enter a dilution factor, if other than zero

↓

0	Saltwater (estuarine and marine): only if approved by the State Leave 0 if no entry

Enter values in the units specified

↓

447	C_d = Enter influent hardness in **mg/L** $CaCO_3$	Freshwater only
99.4	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$	

Enter **receiving water** concentrations in the units specified

↓

7.1	pH in **Standard Units**	pH, temperature, and ammonia required for all discharges Hardness required for freshwater Salinity required for saltwater (estuarine and marine) Metals required for all discharges if present and if dilution factor is > 1 Enter 0 if non-detect or testing not required
25	Temperature in **°C**	
0	Ammonia in **mg/L**	
99.4	Hardness in **mg/L** $CaCO_3$	
0	Salinity in **ppt**	
0	Antimony in **µg/L**	
0	Arsenic in **µg/L**	
0	Cadmium in **µg/L**	
0	Chromium III in **µg/L**	
0	Chromium VI in **µg/L**	
0	Copper in **µg/L**	
0	Iron in **µg/L**	
0	Lead in **µg/L**	
0	Mercury in **µg/L**	
0	Nickel in **µg/L**	
0	Selenium in **µg/L**	
0	Silver in **µg/L**	
0	Zinc in **µg/L**	

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**	if >1 sample, enter maximum if >10 samples, may enter 95th percentile Enter 0 if non-detect or testing not required
0.303	Ammonia in **mg/L**	
0	Antimony in **µg/L**	
0	Arsenic in **µg/L**	
0	Cadmium in **µg/L**	
0	Chromium III in **µg/L**	
0	Chromium VI in **µg/L**	
54.2	Copper in **µg/L**	
2295	Iron in **µg/L**	
15.4	Lead in **µg/L**	
0	Mercury in **µg/L**	
4.88	Nickel in **µg/L**	
0	Selenium in **µg/L**	
0	Silver in **µg/L**	
68.7	Zinc in **µg/L**	
0	Cyanide in **µg/L**	
0	Phenol in **µg/L**	
0	Carbon Tetrachloride in **µg/L**	
69	Tetrachloroethylene in **µg/L**	
0	Total Phthalates in **µg/L**	
0	Diethylhexylphthalate in **µg/L**	
0	Benzo(a)anthracene in **µg/L**	
0	Benzo(a)pyrene in **µg/L**	
0	Benzo(b)fluoranthene in **µg/L**	
0	Benzo(k)fluoranthene in **µg/L**	
0	Chrysene in **µg/L**	
0	Dibenzo(a,h)anthracene in **µg/L**	
0	Indeno(1,2,3-cd)pyrene in **µg/L**	
0	Methyl-tert butyl ether in **µg/L**	

Dilution Factor	1.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**11**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	640	µg/L		
Arsenic	**104**	µg/L	10	µg/L		
Cadmium	**10.2**	µg/L	0.8207	µg/L		
Chromium III	**323**	µg/L	293.8	µg/L		
Chromium VI	**323**	µg/L	11.4	µg/L		
Copper	242	µg/L	**33.5**	µg/L		
Iron	5000	µg/L	**1000**	µg/L		
Lead	**160**	µg/L	21.40	µg/L		
Mercury	**0.739**	µg/L	0.91	µg/L		
Nickel	**1450**	µg/L	185.1	µg/L		
Selenium	**235.8**	µg/L	5.0	µg/L		
Silver	**35.1**	µg/L	49.7	µg/L		
Zinc	**420**	µg/L	426.1	µg/L		
Cyanide	**178**	mg/L	5.2	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	1.6	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	5.0	µg/L	**3.3**	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	2.2	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

APPENDIX F

ACEC AND FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS EVALUATION

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 20, 2017

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 (accessed January 2017)

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

Thank you for your cooperation. Please contact Maria 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

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

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

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

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

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

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

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

Ellisville Harbor
(600 acres, 1980) Plymouth

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

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

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

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

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

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

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

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

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

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

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

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

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

Pocasset River
(160 acres, 1980) Bourne

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

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

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

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

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

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

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

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

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

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

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

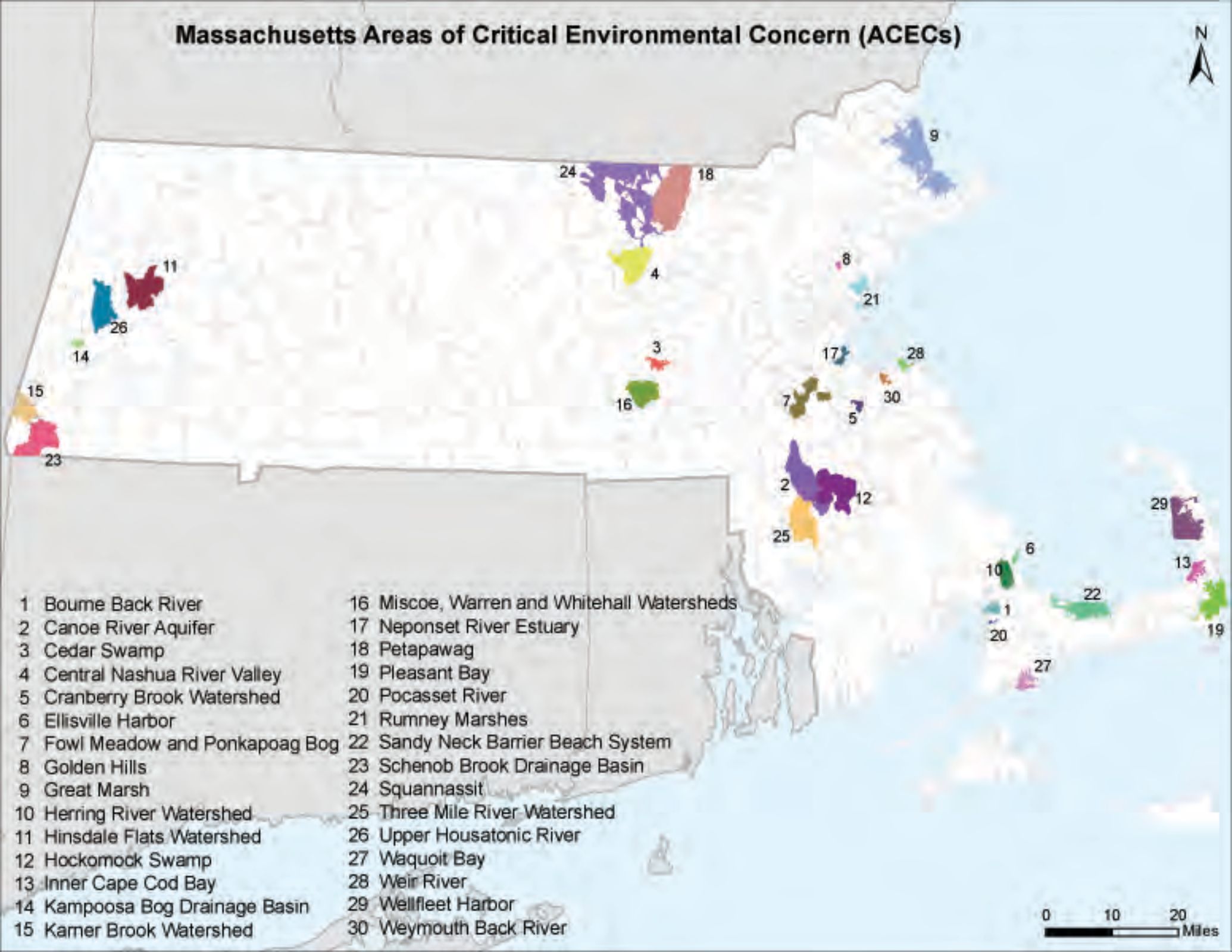
Towns with ACECs within their Boundaries November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary

TOWN	ACEC
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

.

Massachusetts Areas of Critical Environmental Concern (ACECs)



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

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)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
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
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
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.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-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.

Updated 02/05/2016

ATTACHMENT

Evaluation of Long-Eared Bat Habitat

175 Wyman Street

Waltham, Massachusetts

The northern long-eared bat (*Myotis septentrionalis*) has a federal status of Threatened and a state status of Endangered within Massachusetts.

The northern long-eared bat is a migratory species which utilizes a variety of habitats during the year depending on the season. Between early November and April, this species hibernates in crevices in portions of caves and abandoned mine shafts which have high humidity, constant temperatures, and little air flow. Individuals tend to return to the same hibernaculum from year to year although they are also known to sometimes use other hibernacula. Hibernacula are generally located within approximately 35 miles of summer foraging habitat. Between April and October, northern long-eared bats roost and forage in forested areas. Preferred roost sites include clusters of large, live or dead, hardwood trees with cavities or peeling bark. Preferred foraging sites include wooded areas around vernal pools or small ponds or along streams. Thus, transitional zones between forested uplands and wetlands represent prime summer roosting and foraging habitat.

The 175 Wyman Street property and the properties associated with the discharge system is located within developed areas, including a major highway system. There are some trees and a wetland area on 175 Wyman Street property that might provide habitat, but the discharge system has no impact on those potential habitat areas. The constant noise disturbances from traffic along the highway and adjoining roads make this area marginal habitat for northern long-eared bats, therefore it is unlikely that this species utilizes this area.

APPENDIX G

MACRIS SEARCH RESULTS

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Waltham; Street No: 175; Street Name: Wyman St; Resource Type(s): Area;

Inv. No.	Property Name	Street	Town	Year

Proactive by Design

Geotechnical
Environmental
Ecological
Water
Construction Management

249 Vanderbilt Avenue
Norwood, MA 02062
781.278.3700
www.gza.com

July 16, 2018
File No. 15522.18

Ms. Jennifer Wood
Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street
Boston, Massachusetts 02108

Re: Response to MassDEP Questions
Authorization for Discharge to Cambridge Reservoir
175 Wyman Street
Waltham, Massachusetts
RTN: 3-13311

Dear Ms. Wood:

On behalf to HP Inc. (HP), GZA GeoEnvironmental, Inc. (GZA) has prepared this response to your letter received on June 26, 2018 requesting additional information regarding the Remediation General Permit (RGP) Notice of Intent (NOI) submitted by GZA on June 27, 2017. The NOI is for the discharge of treated water from a groundwater remediation system located at 175 Wyman Street, Waltham, Massachusetts (the "Site") to the Cambridge Reservoir, a Class A, public water supply, which is an Outstanding Resource Water (ORW). Per Section 1.3 of the RGP, discharge to an ORW requires Massachusetts Department of Environmental Protection (MassDEP) approval.

BACKGROUND

The groundwater remediation system was installed at the Site in 1997 to contain and treat predominantly trichloroethene (TCE)-affected groundwater. One of the main objectives of this remedial program was to limit the potential impacts of Site groundwater on the nearby Cambridge Reservoir. Since 1997, discharge of treated groundwater has been to an on-property storm drain, which flows westerly into an off-property water retention basin east of Route 128 that discharges into the Cambridge Reservoir. Originally, this discharge was authorized under the National Pollutant Discharge Elimination System (NPDES) Exclusion program along with authorization from the City of Cambridge. In 2005, the Environmental Protection Agency (EPA) issued the RGP and the discharge was transitioned on September 22, 2005 into this new program (authorization #MAG910002). In 2010 the EPA re-issued the RGP and required a submission of an NOI for on-going discharges. Our NOI was submitted on December 7, 2010 and authorization was received on May 25, 2011. This May 2011 authorization remains active pending the response to our June 2017 NOI.

RESPONSE TO QUESTIONS

Section 1.3 of the RGP states that discharges to ORWs are ineligible for coverage unless authorization is granted by MassDEP. MassDEP is required to perform their review in accordance with the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards (314

CMR 4.04) and MassDEP policy, "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00" (the "Policy"). Once MassDEP has issued their authorization, the EPA can proceed with their discharge authorization.

In order to proceed with MassDEP authorization, 314 CMR 4.04(5)(b) requires the applicant to demonstrate compliance with MassDEP regulations 314 CMR 4.04(5)(a)(2 through 4) and the Policy. To facilitate this process, MassDEP has requested a response to each of the following questions:

1. **Are there less environmentally damaging alternative sites for the discharge, sources for disposal, or methods to eliminate the discharge that are reasonably available or feasible? This demonstration must include an analysis of the reuse and conservation of discharge water, relocation of activity, land application of discharge water or use of closed systems, alternative methods of production or operation, improved process controls, improved discharge water treatment facility operation, alternative methods of treatment and treatment beyond applicable technology requirements of the Federal Clean Water Act. Technologically feasible alternatives must be compared with the potential environmental degradation.**

   The discharge is associated with a groundwater remediation system, which is subject to the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). As such, some of the elements of this question (relocation of activity, alternative methods of production or operation, etc.) are not applicable. The MCP, 310 CMR 40.0040 (specifically sections 40.0041 through 40.0045), outlines options for the management of discharges from remedial systems (referred to as "Remedial Wastewater"). The three categories for the discharge of Remedial Wastewater are as follows:

   <u>Ground Surface and Subsurface Discharge (310 CMR 40.0045):</u>

   310 CMR 40.0045(1)(a) states that the discharge "does not erode or otherwise impair the functioning of the surficial and subsurface soils, infiltrate underground utilities, building interiors or subsurface structures, result in groundwater mounding within two feet of the ground surface, or result in flooding of, or breakout to the ground surface." This option was considered during system design; however, with shallow bedrock throughout the Site, low permeable (typically less than 0.6 feet/day based on previous hydraulic conductivity testing) overburden soil, and the presence of an underground tank (currently utilized for rain water collection and irrigation) on-site discharge on this developed property (which has numerous subsurface structures, including building foundations and utilities) is not a feasible option. Based on our evaluation of system flows and the capacity of the subsurface at the Site to accept groundwater discharge, excessive mounding and breakouts to the ground surface would be likely with a subsurface infiltration system. This would violate the MCP restrictions on subsurface discharge and render this option infeasible. Additionally, mounding of groundwater from subsurface discharges would impair the hydraulic control of Site groundwater that the existing system provides.

POTW Discharge (310 CMR 40.0043 and 40.0044):

310 CMR 40.0043 and 40.0044 list the requirements of remedial discharges to publicly owned and non-publicly owned treatment works, respectively. There are no non-publicly owned treatment works located near the Site and the publicly owned treatment works located near the Site is owned and operated by the Massachusetts Water Resources Authority (MWRA). In accordance with MWRA's sewer use regulation (specifically 360 CMR 10.023(1)), the discharge of groundwater into their sewerage system is prohibited. Based on previous inquiries for similar projects, it is GZA's understanding that the MWRA does not make exceptions to this prohibition.

Surface Water Discharge (310 CMR 40.0042):

310 CMR 40.0042 lists the requirements of Remedial Wastewater discharges to surface water. Specifically, 310 CMR 40.0042(3)(b and c) allows for surface water discharge provided that a permit application has been submitted to the EPA or the remediation system is operated in accordance with an existing NPDES permit. Additionally, 310 CMR 40.0041(10) and 40.0042(4) allow for the discharge of remedial wastewater to ORW under certain specific conditions. The system at the Site meets those conditions.

* * *

Accordingly, the feasible option for the discharge generated from the groundwater remediation system on the Site is to surface water as the discharge cannot meet the requirements of 310 CMR 40.0043 through 40.0045.

With respect to treatment technologies, process controls and system operation, it is GZA's opinion that the current system meets the requirements of the RGP and the MCP.

2. **To the maximum extent feasible, are the discharge and activity designed and conducted to minimize adverse impacts on water quality, including implementation of source reduction practices? All reasonable efforts to minimize the environmental impacts of the proposed discharge must be made. Emphasis is placed on source reduction. This includes investigation of changes in plant production processes or raw materials that reduce, avoid, or eliminate the use of pollutants, including, but not limited to, nutrients, toxics and hazardous substances, or generation of pollution by-product per unit product, so as to reduce overall risks to the environment. Compliance with M.G.L. Ch. 21I (the Toxics Use Reduction Act) is required.**

   The existing groundwater remediation system utilizes six recovery wells to mitigate the off-Site migration of Site-related groundwater contaminants. The treatment of recovered groundwater utilizes applicable treatment components to remove Site-related contaminants (predominately TCE, cis-1,2-dichloroethene, and tetrachloroethene) plus metals (predominantly copper, iron, lead, selenium, and zinc) also present in the groundwater. The groundwater treatment system was reviewed by EPA and discharge of the treated water is authorized by EPA under the NPDES RGP. EPA imposed conditions are conservative and ensure that the discharge of treated groundwater does not result in exceedances of water quality standards for drinking water or for aquatic life.

Nutrients, toxics, and hazardous substances are not utilized in the treatment process. As noted above, the discharge is associated with a groundwater remediation system, rather than an industrial process. The references to production processes, source reduction (in the sense implied), and raw materials do not apply.

3. **Will the continued discharge impair existing uses of the receiving water or result in a level of water quality less than that specified for the Class?**

   The existing discharge is subject to discharge limits set by EPA as to not impair the existing uses of the receiving water. As stipulated by the EPA, the discharge water is sampled and analyzed monthly to ensure compliance. Beginning in 1999, semiannual sampling for Site-related contaminants of surface water from the reservoir near the point of discharge has been performed. Since that time there was one occasion (June 2007) when a contaminant (TCE) was detected in the surface water; however, the reported concentrations (<1 ug/L) were below drinking water standards (5 ug/L).

4. **Since expiration of the previous RGP on September 9, 2015, did discharge from the facility meet the requirements of the RGP issued on September 9, 2010 "2010 RGP"? Note that cumulative degradation resulting from discharger's noncompliance may warrant further investigation. If the facility has been in noncompliance, explain how the facility plans to return to compliance.**

   Since September 9, 2015, the effluent from the groundwater remediation system exceeded the discharge limits once. The exceedance was for TCE during the March 2016 monthly sampling event. The system was deactivated and the exceedance (13 ug/L vs. discharge limit of 5 ug/L) was reported to EPA. Corrective actions were performed and on March 30, 2016, the system was reactivated, and an effluent sample was collected confirming compliance with the discharge limits. These results were also communicated to the EPA. With this one exception the discharge from the remediation system has been in compliance since September 2015.

CONCLUSION

We trust that the above information and responses addresses your questions regarding the discharge of Remedial Wastewaters to the Cambridge Reservoir and satisfies the requirements of 314 CMR 4.00 and the Policy.

Proactive by Design

If you have any additional questions or require any additional information, please contact any of the undersigned at (781) 278-3700.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

John A. Colbert
Associate Principal

William R. Norman
Consultant/Reviewer

Charles Lindberg, LSP
Senior Principal

cc: Ms. Susannah King – MassDEP
Ms. Shauna Little – EPA Region 1
Mr. Stephen Casazza, City Engineer – Waltham Water and Sewer Division
Mr. Samuel Corda, Cambridge Water Department
Mr. Jeff Miller – HP Inc.
Mr. Roger Anderson - TRC