NOTICE OF INTENT FOR DISCHARGE PURSUANT TO MASSACHUSETTS REMEDIATION GENERAL PERMIT MAG9100000

112 SHAWMUT AVENUE

BOSTON, MASSACHUSETTS

AUGUST 14, 2018

Prepared For:
United States Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100
Mail Code OEP06-01
Boston, MA 02109-3912

On Behalf Of:

Suffolk Construction Co.

PROJECT NO. 6342

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

August 14, 2018

United States Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100
Mail Code OEP06-01
Boston, MA 02109-3912

Attention: EPA RGP Applications Coordinator

Reference: 112 Shawmut Avenue; Boston, Massachusetts;
Notice of Intent for Temporary Construction Dewatering Discharge;
Massachusetts Remediation General Permit MAG910000

Ladies and Gentlemen:

In accordance with the provisions of the Remediation General Permit (RGP) MAG910000 that has been issued for the Commonwealth of Massachusetts, the following is a summary of the site and groundwater quality information in support of a Notice of Intent for the temporary discharge of groundwater into the Bass River via a municipal storm drain system. The temporary discharge of construction dewatering will occur as part of the proposed redevelopment of the above referenced property. Refer to **Figure 1,** Project Location Plan for the general site locus.

These services were performed and this permit application was prepared with the authorization of The Davis Companies and are subject to the limitations contained in **Appendix A**.

The required Notice of Intent (NOI) Form contained in the RGP permit is included in **Appendix B**, and supporting information is included in **Appendix C**. This project is considered Activity Category III-G as defined in the RGP. Category III-G is defined as Contaminated Site Dewatering from Sites with Known Contamination. Based on historical and current soil and groundwater analysis completed at the site and constituents of concern (COCs) detected, subcategories A (Inorganics), D (Non-Halogenated Semi-Volatile Organic Compounds), and F (Fuel Parameters) apply.

Thus, Technology Based Effluent Limitations (TBELs) for Type A, D, and F contamination apply. Water Quality Based Effluent Limitations (WQBELs) were calculated in accordance with Appendix V of the RGP for the parameters detected.

Applicant/Operator

The applicant for the Notice of Intent-Remediation General Permit is:

Suffolk Construction Co.
65 Allerton Street
Boston, MA 02118

Attention: Mr. Greg Sawin

Tel: 617-593-0749
Email: gsawin@suffolk.com

Existing Conditions

The development parcel occupies an approximate 28,380 square-foot, L-shaped area which is generally bounded by Herald Street to the north, Shawmut Avenue to the west and commercial properties to the east and south (identified as C-Mart and 120 Shawmut Avenue, respectively). A six-story brick structure currently occupies the northwest corner of the site which was reportedly constructed in 1916. The building contains a single basement level and has a footprint of approximately 11,000 square feet. It is understood that the top of the existing basement slab is at approximately Elevation +12.

The eastern portion of the site consists of a paved parking lot that extends from the eastern and southern property lines, to Herald Street and to the eastern edge of the existing building. Existing ground surface across the parking lot at the site gently sloped south to north from approximately Elevation +18.5 to about Elevation +21 over a horizontal distance of approximately 180 feet. Elevations cited herein are in feet and are referenced to the Boston City Base Datum (BCB).

Proposed Scope of Site Development

Proposed redevelopment of the subject site consists of the construction of a new 13-story structure that will be incorporated into the existing 6-story building. In order to facilitate construction of the new building, the southern portion of the existing building will be demolished as part of the proposed construction. The new building will expand into the existing building's basement space for below grade parking. A parking ramp will be constructed to access the below grade parking from Shawmut Avenue. The footprint of the proposed basement area (including the existing building basement) is approximately 26,300 square feet.

In order to construct new foundation and parking garage, excavation below the surface of groundwater will be necessary. It is proposed that a solider pile and lagging earth support system will be utilized to provide temporary excavation support during construction of the proposed basement.

Site Environmental Setting and Surrounding Historical Places

Based on an on-line edition of the Massachusetts Geographic Information Systems MassDEP MCP Numerical Ranking System Map, the subject site is not located within the boundaries of a Sole Source Aquifer, Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection.

Further, there are no public drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, no habitats of Species of Special Concern or Threatened or Endangered Species within specified distances of the subject site.

Furthermore, per documentation provided by the U.S. Fish and Wildlife Information for Planning and Consultation (IPaC), the proposed site discharge does not have the potential to adversely affect the threatened species in the northeast coastal regions. Accordingly, NMFS Criterion in section G of the RGP applies. It is not expected that adverse effects of discharge will impact the listed threatened species.

The Resource Map indicates that there are no water bodies or wetland areas at the subject site. No areas designated as solid waste sites (landfills) are noted as being located within 1,000 feet of the site. The closest body of water is the Bass River located approximately 700 feet to the east of the subject site. The Bass River receiving water is classified as Brackish and flows east into the Fort Point Channel of the Boston Harbor. A copy of the Massachusetts DEP Phase I Site Assessment Map is included in **Appendix C**.

As further discussed below, treated construction dewatering effluent will be discharged into the City of Boston dedicated storm drain system that flows into the Bass River. The dewatering of groundwater at the site will be temporary and intermittent. Groundwater discharged as part of the proposed project will be controlled and monitored. Treatment systems will consist of temporary structures. Therefore, based on the anticipated duration of construction dewatering and the location of its discharge into the Bass River, construction dewatering activities are not considered to affect historical listings. Hence, the site meets Permit Eligibility Criterion A in accordance with Appendix III of the RGP.

Site History & Release History

Historical records indicate that in 1867, the subject site was occupied by a brewery and several unmarked buildings. By 1895, those buildings were replaced by sheds surrounding the perimeter of the parcel. By 1916, all of the sheds were demolished and the existing building on the subject site was constructed. Since its construction, the building has been utilized by various businesses including a daycare and office space.

A preliminary pre-characterization subsurface exploration program completed at the subject site during March 2017, identified Reportable Concentrations of total lead, total petroleum hydrocarbons (TPH), and semi-volatile organic compounds (SVOCs) including methylnaphthalene, acenaphthene, acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene in fill material at the subject site.

The detected concentrations of SVOCs, TPH, and total lead were reported to the DEP on July 31, 2016 and subsequently assigned RTN 3-34280.

During a supplemental subsurface exploration program of subject site fill material conducted at the subject site in May 2018, a Reportable Concentration of naphthalene was also detected in fill material.

As discussed below, groundwater samples obtained from the subject site did not exhibit concentrations of contaminants of concern in soil with the exception of trace concentrations of naphthalene. It is noted that naphthalene was detected well below both MCP and EPA groundwater standards at 0.22 ug/l in the single groundwater obtained from the subject site.

Construction Site Dewatering

Groundwater levels within the monitoring wells were observed to range from Elevation +9.0 to Elevation +10.9. It is anticipated that future groundwater conditions across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations to existing drainage patterns.

As referenced above, portions of the below-grade garage parking will extend to approximately 20 feet below ground surface. Below-grade construction of the proposed development will be conducted as a mass excavation including a lateral earth support system consisting of solider pile lagging, which will extend into the clay deposit and will remain in place following the completion of construction. Groundwater that seeps through earth support will be pumped off-site using strategically placed sump pumps.

It is anticipated that the rate of construction dewatering to facilitate excavation of the fill material will be on the order of 25 to 50 gallons per minute (gpm). However, to facilitate excavation through the fill material to the surface of the clay deposit, it is recommended that means and methods be implemented to reduce the flow rate of the water seeping into the excavation. As such, the rate of construction dewatering is anticipated to be minimized to an estimated 25 gpm. These estimates do not include surface run-off which will be removed from the excavation during periods of precipitation.

A review of available subgrade sanitary and storm sewer system plans accessed from the BWSC indicates the presence of a dedicated stormwater drain system located beneath Shawmut Avenue, East Berkeley Street, and Albany Street. There is one discharge flow path adjacent to the site, stormwater drain line located beneath Shawmut, south to East Berkeley Street, and then east across Albany Street, and finally further to the east beneath I-93 where the stormwater system discharges to the Bass River as shown on the enclosed **Figure 3**.

Summary of Groundwater Analysis

McPhail Associates, LLC obtained a sample of groundwater at the development parcel from monitoring well B-2 on June 27, 2018. Analytical results of the testing of the groundwater samples obtained in 2018 are summarized in **Table 1** and the laboratory data are enclosed

in **Appendix D**. In addition, a surface water sample was obtained from an upstream location of the discharge into the Bass River receiving water on July 12, 2018. The approximate location of sample collection is indicated on the enclosed **Figure 3**, and analytical test results are included in the enclosed **Appendix E**.

The above referenced sample was submitted to a certified laboratory for analysis for the presence of compounds required under the EPA's RGP application, including total suspended solids (TSS), pH, salinity, cyanide, physiologically available cyanide, total residual chlorine (TRC), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), semi-volatile organic compounds (SVOCs), PCBs, and total RGP metals. The results of the 2018 laboratory analysis are summarized in **Table 2** and laboratory data are included in **Appendix D**. The receiving water sample was analyzed for the presence of total recoverable metals, salinity, and ammonia nitrogen. Additionally, at the time of sample collection, the temperature and pH of the surface water sample were analyzed. Receiving water data and laboratory data are included in **Appendix E**.

In summary, groundwater testing performed at the subject site has detected concentrations of suspended solids, ammonia, arsenic, chloride, copper, cyanide, iron, nickel, and naphthalene. Furthermore, total cyanide was detected at 112 ug/l and physiologically available cyanide was detected at 26 ug/l, which is below the applicable RCGW-2 MCP Reporting Thresolds. Water Quality-Based Effluent Limits (WQBELs) were calculated for each of the detected compounds. With the exception of total residual chlorine (TRC) and cyanide, Type A, D, and F compounds do not exceed the applicable Technology Based Effluent Limits (TBELs). For detected compounds, based on calculations performed in accordance with Appendix V of the RGP, a WQBEL applies to TRC and a compliance level applies to cyanide. Documentation of NOI support calculations is included in **Appendix C**.

The groundwater sample obtained from monitoring wells B-2 (OW) did not indicate detectable concentrations of TRC, however the WQBEL calculation worksheet indicated a limitation of 32.1 ug/L applies. Since the groundwater at the site has and will not be chlorinated previous to or during construction activities, the WQBEL calculated does not apply.

In accordance with the RGP, and given that the Site is a former release site, the proposed dewatering associated with this permit application is considered Contaminated/Formerly Contaminated Site Dewatering (Category III). The Site has been fully characterized and data utilized in characterization meets minimum data validation requirements; therefore, the Site contamination is considered "Known" (Contamination Type G). Accordingly, the known contaminations fall in the following categories; A (Inorganics), D (Non-Halogenated Semi-Organic Compounds), and F (Fuel Parameters. This project is considered Activity Category III-G; A, D, and F as defined in the RGP. Based on the activity category, and in accordance with the RGP, contamination Type A, D, and F as defined in Table 4 of the RGP applies. Thus, Technology Based Effluent Limitations (TBELs) for all above contamination categories apply. Water Quality Based Effluent Limitations (WQBELs) were calculated in accordance with Appendix V of the RGP for the parameters detected.

Groundwater Treatment

Based upon the anticipated rates of construction dewatering in conjunction with the results of the above referenced groundwater analyses, it is our opinion that one 5,000-gallon capacity settling tank, bag filters, and ion resin exchange in series will be used to settle out and remove particulate matter in groundwater as well as to remove physiologically available cyanide to meet the effluent limits established by the US EPA prior to discharge.

A schematic of the treatment system is shown on **Figure 4**.

A Best Management Practices Plan (BMPP) has been prepared as **Appendix F** to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Summary and Conclusions

The purpose of this report is to summarize site environmental conditions and groundwater data to support a Notice of Intent to discharge under the Remediation General Permit, for off-site discharge of dewatered groundwater which will be encountered during the redevelopment of 112 Shawmut Avenue property in Boston, Massachusetts. The groundwater testing results reported in this application have been provided to the site owner.

Based on the results of the above referenced groundwater analyses, treatment of construction dewatering will be necessary to meet the effluent limits established by the US EPA prior to off-site discharge. The proposed construction dewatering effluent treatment system will consist of one 5,000-gallon capacity settling tank, bag filters, and an ion resin exchange media filter in series. However, should the effluent monitoring results identify concentrations of contaminants that are in excess of the limits established by the RGP, additional mitigative measures will be implemented to meet the allowable discharge limits.

We trust that the above satisfies your present requirements. Should you have any questions or comments concerning the above, please do not hesitate to contact us.

Sincerely,

McPHAIL ASSOCIATES, LLC

Kirk W. Seaman

William J. Burns, L.S.P.

KWS/wb

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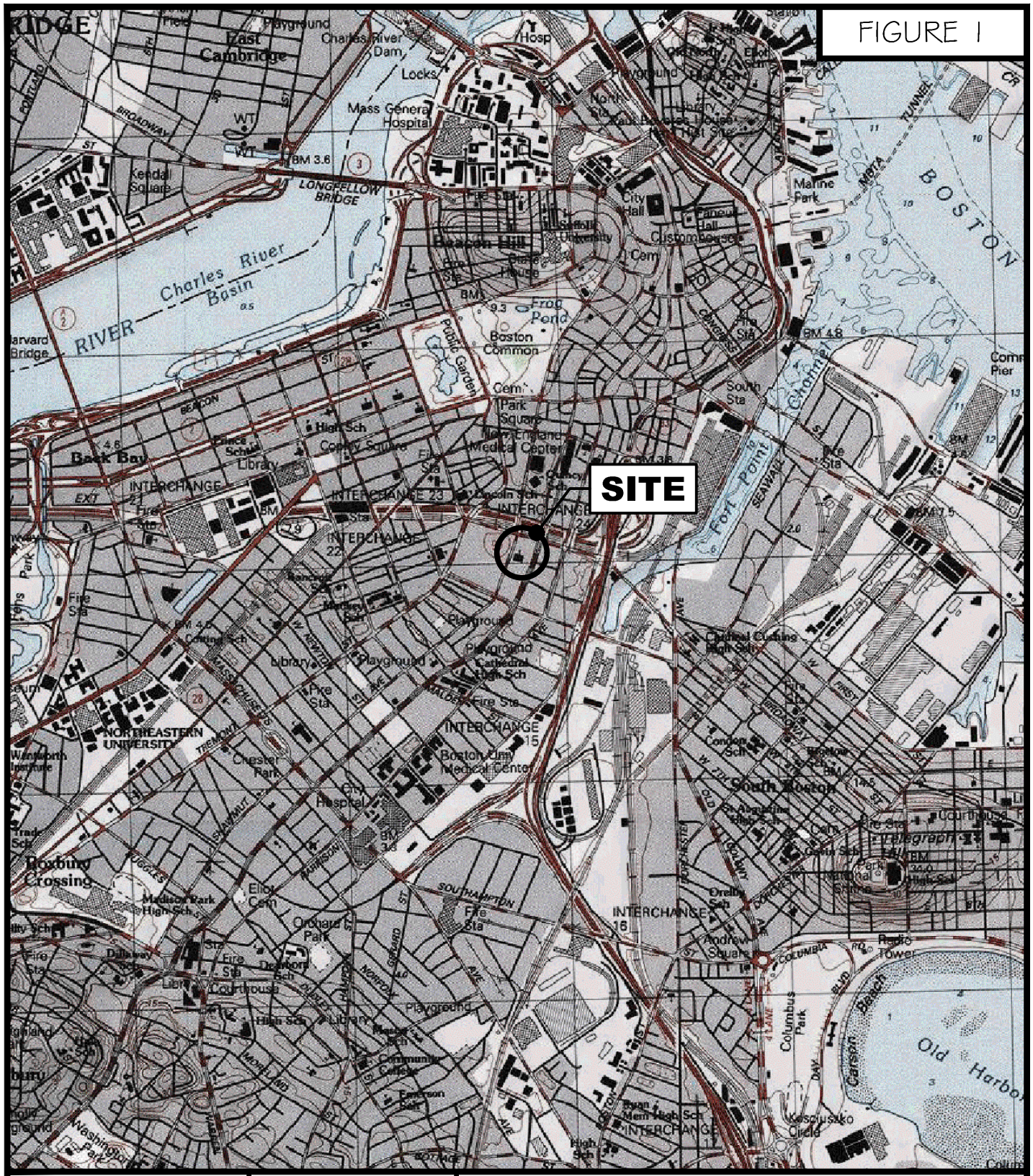
FIGURE 1



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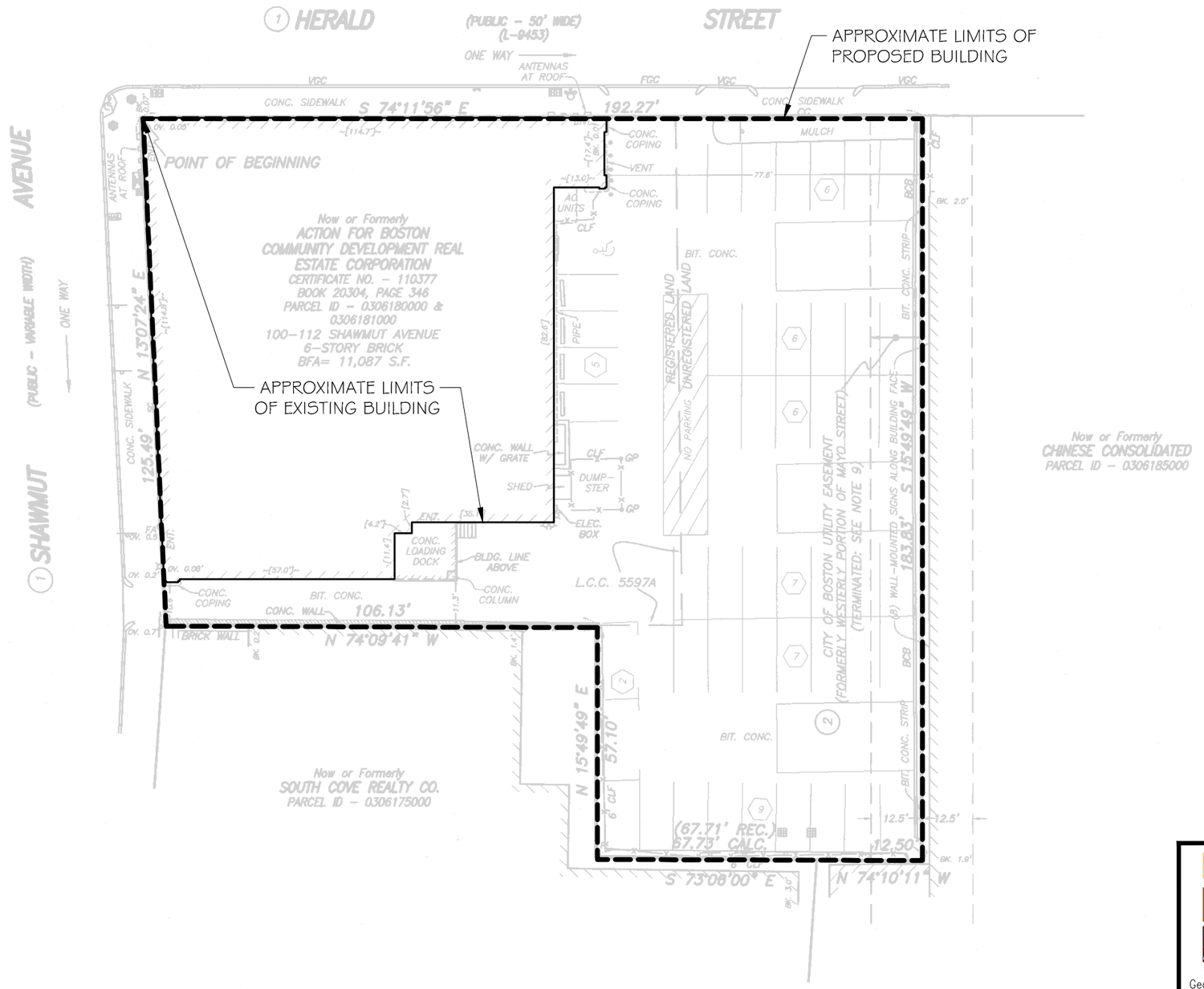
SCALE 1:25,000

PROJECT LOCATION PLAN

112 SHAWMUT AVENUE

BOSTON MASSACHUSETTS

FIGURE 2



REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "ALTA/ACSM LAND TITLE SURVEY" DATED MAY 18, 2015 PREPARED BY FELDMAN LAND SURVEYORS

GRAPHIC SCALE

30 0 30 60

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112 SHAWMUT AVENUE

BOSTON MASSACHUSETTS

SITE PLAN

FOR

SUFFOLK CONSTRUCTION CO.

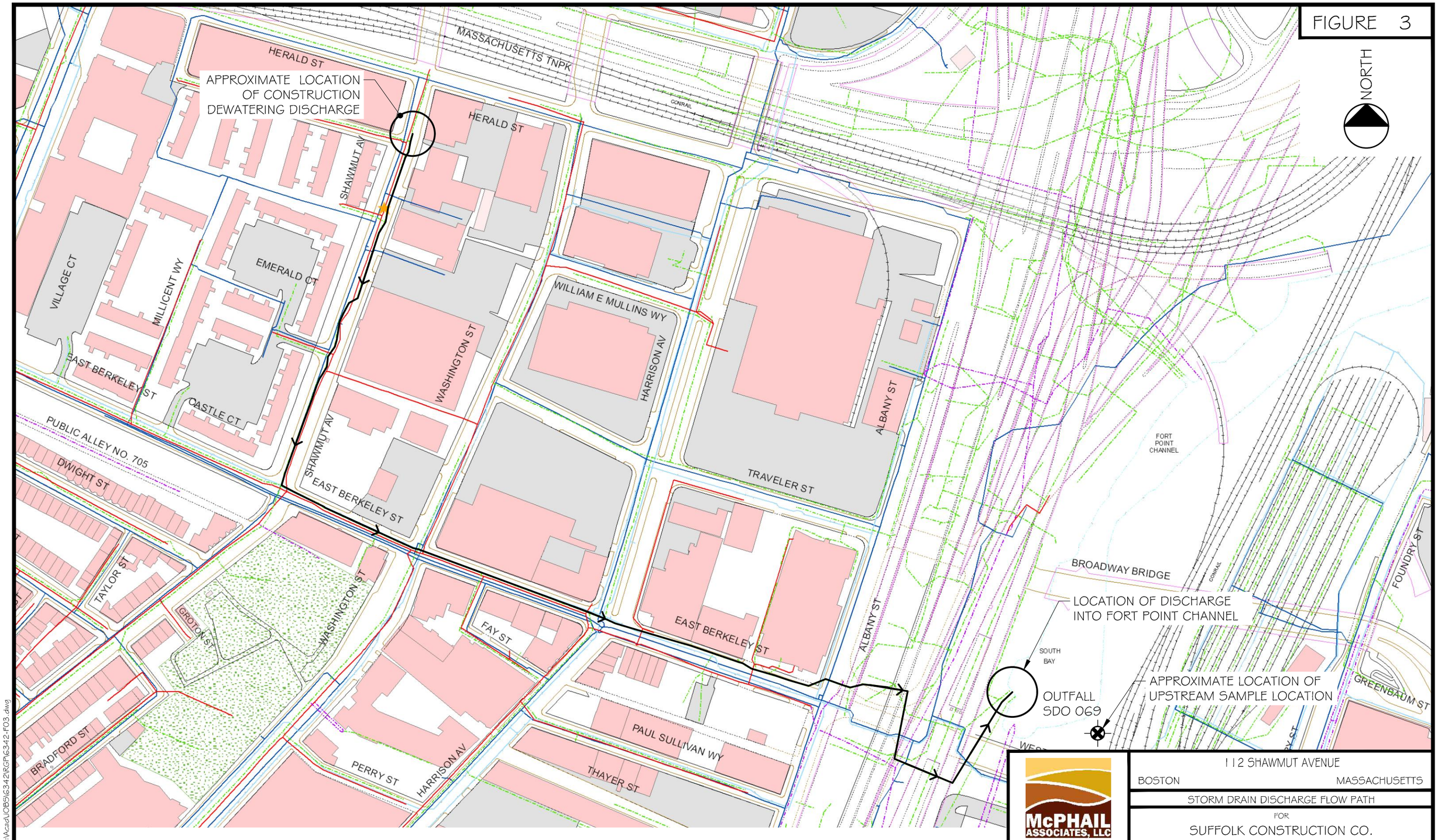
BY

McPHAIL ASSOCIATES, LLC

Date: JULY 2018	Dwn: I.J.M.	Chkd: K.W.S.	Scale: 1" = 30'
Project No: 6342			

FILE NAME: N:\Acad\OBS\6342\RGF\6342-F02.dwg

FIGURE 3



REFERENCE: THIS PLAN WAS PREPARED FROM A 211-SCALE DRAWING ENTITLED "BOSTON WATER AND SEWER" PRINTED ON MAY 15, 2015 BY BOSTON WATER AND SEWER COMMISSION.

GRAPHIC SCALE

200 0 200 400

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112 SHAWMUT AVENUE

BOSTON MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

SUFFOLK CONSTRUCTION CO.

BY

McPHAIL ASSOCIATES, LLC

Date: JULY 2018	Dwn: M.B.S.	Chkd: K.W.S.	Scale: 1" = 200'
Project No: 6342			

FILE NAME: N:\Acad\JOBS\6342\RGP\6342-F03.dwg

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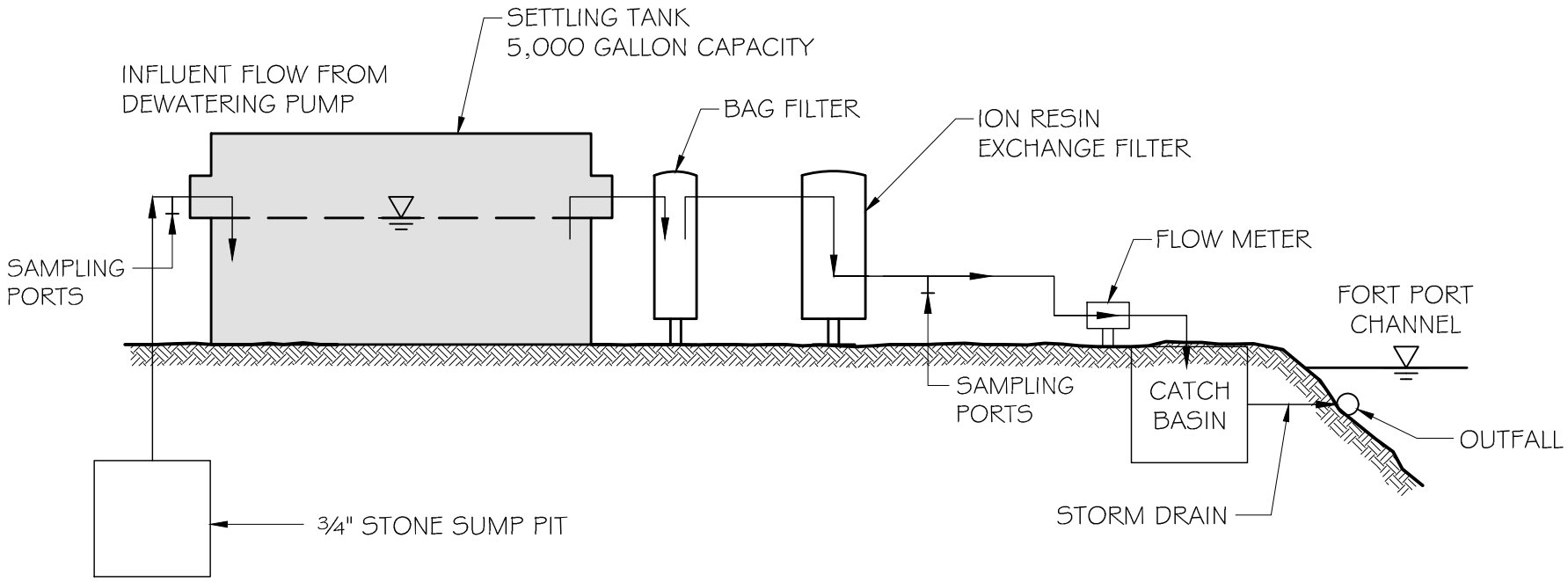
FIGURE 4



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112 SHAWMUT AVENUE
BOSTON MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR

SUFFOLK CONSTRUCTION CO.

BY

McPHAIL ASSOCIATES, LLC

Date: JULY 2018	Dwn: M.B.S.	Chkd: K.W.S.	Scale: N.T.S.
Project No: 6342			

Table 1
Laboratory Analytical Results - Groundwater

112 Shawmut Ave
Boston, MA
McPhail Project No: 6342

LOCATION	B-2 (OW)
SAMPLING DATE	6/27/2018
LAB SAMPLE ID	L1824503-01
General Chemistry (ug/l)	
Chlorine, Total Residual	ND(20)
Chloride	7410000
Cyanide, Total	112
Cyanide, Physiologically Available	26
Nitrogen, Ammonia	1830
pH (H)	7.6
SALINITY	11
Solids, Total Suspended	7100
TPH, SGT-HEM	ND(4000)
Total Metals (ug/l)	
Antimony, Total	ND(4)
Arsenic, Total	5.69
Cadmium, Total	ND(0.2)
Chromium, Hexavalent	ND(50)
Chromium, Trivalent	ND(50)
Chromium, Total	ND(1)
Copper, Total	2.54
Iron, Total	1490
Lead, Total	ND(10)
Mercury, Total	ND(0.2)
Nickel, Total	2.95
Selenium, Total	ND(5)
Silver, Total	ND(0.4)
Zinc, Total	ND(10)
Semivolatile Organics (ug/l)	
Bis(2-ethylhexyl)phthalate	ND(3)
Butyl benzyl phthalate	ND(5)
Di-n-butylphthalate	ND(5)
Di-n-octylphthalate	ND(5)
Diethyl phthalate	ND(5)
Dimethyl phthalate	ND(5)
Acenaphthene	ND(0.1)
Acenaphthylene	ND(0.1)
Anthracene	ND(0.1)
Benzo(a)anthracene	ND(0.1)
Benzo(a)pyrene	ND(0.1)
Benzo(b)fluoranthene	ND(0.1)
Benzo(ghi)perylene	ND(0.1)
Benzo(k)fluoranthene	ND(0.1)
Chrysene	ND(0.1)
Dibenzo(a,h)anthracene	ND(0.1)
Fluoranthene	ND(0.1)
Fluorene	ND(0.1)
Indeno(1,2,3-cd)pyrene	ND(0.1)

ND - Not detected in excess of the detection limit
(#) - Detection limit

Table 1
Laboratory Analytical Results - Groundwater

112 Shawmut Ave
Boston, MA
McPhail Project No: 6342

LOCATION	**B-2 (OW)**
SAMPLING DATE	**6/27/2018**
LAB SAMPLE ID	**L1824503-01**
Naphthalene	0.22
Phenanthrene	ND(0.1)
Pyrene	ND(0.1)
Volatile Organics (ug/l)	
Volatile Organics (ug/l)	ND(1)
Tert-Butyl Alcohol	ND(10)
Tertiary-Amyl Methyl Ether	ND(2)

ND - Not detected in excess of the detection limit
(#) - Detection limit

TABLE 2

ANALYTICAL TEST RESULTS--SURFACE WATER

112 Shawmut Avenue;
Boston, Massachusetts
Project Number 6342

LOCATION	BASS RIVER SURFACE WATER
SAMPLING DATE	**7/12/2018**
LAB SAMPLE ID	**L1826656-01**
pH (SU)	7.6
Nitrogen, Ammonia	282
Total Metals (ug/l)	
Arsenic, Total	3.05
Copper, Total	11.26
Iron, Total	2700
Lead, Total	ND(2)
Mercury, Total	ND(0.2)
Nickel, Total	ND(25)
Selenium, Total	ND(10)
Silver, Total	ND(7)
Zinc, Total	61
Salinity (SU)	24

ND - Not detected in excess of the laboratory method detection limit
Blank - Not analyzed

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report is to present the results of testing of groundwater samples obtained from a monitoring well located at 112 Shawmut Ave in Boston, Massachusetts, in support of an application for approval of construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remediation General Permit MAG910000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-site observations and noting the characteristics of any variations.

The conclusions submitted in this report are based in part upon laboratory test data obtained from analysis of groundwater samples, and are contingent upon their validity. The data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal and other factors.

Laboratory analyses have been performed for specific constituents during this assessment, as described in the text.

This report and application have been prepared on behalf of and for the exclusive use of Suffolk Construction Co. and The Davis Companies. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than submission to relevant governmental agencies, nor used in whole or in part by any other party without the prior written consent of McPhail Associates, LLC.

APPENDIX B:

NOTICE OF INTENT TRANSMITTAL FORM
BOSTON WATER & SEWER DEWATERING DISCHARGE PERMIT

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
112 Shawmut Ave</td><td colspan="3">Site address: 112 Shawmut Ave
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02118</td></tr>
<tr><td rowspan="4">2. Site owner
DIV Shawmut, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Chris Mora</td></tr>
<tr><td colspan="2">Telephone: 617-936-4816</td><td>Email: cmora@thedaviscompanies.com</td></tr>
<tr><td colspan="3">Mailing address: 125 High Street, Suite 2111
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Suffolk Construction</td><td colspan="3">Contact Person: Greg Sawin</td></tr>
<tr><td colspan="2">Telephone: 617-5173512</td><td>Email: gsawin@suffolk.com</td></tr>
<tr><td colspan="3">Mailing address:
65 Allerton Street
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02119</td></tr>
<tr><td>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:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-34280
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Boston Inner Harbor (Fort Point Channel)	MA70-02	SB

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.	0
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.	0

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: 0

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: suspended solids, ammonia, arsenic, chloride, copper, cyanide, iron, nickel, and naphthalene	
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): 001	Outfall location(s): (Latitude, Longitude) 42.346655, -71.065880

Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify:

Discharge outfall indirect into Boston Inner Harbor via Bass River (Fort Point Channel)

☐ 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: Submission of documentation to and approval from BWSC in tandem with this NOI

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): October 2018 - August 2019

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="5">☐ 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		✔	1	44350.1	75	1.83	1.83	Report mg/L	---
Chloride		✔	1	443000	500	7410000	7410000	Report µg/l	---
Total Residual Chlorine	✔		1	121,4500C	20	<DL	<DL	0.2 mg/L	
Total Suspended Solids		✔	1	1212540D	5000	7.1	7.1	30 mg/L	
Antimony	✔		1	1,6020A	4	<DL	<DL	206 µg/L	
Arsenic		✔	1	1,6020A	0.5	5.69	5.69	104 µg/L	
Cadmium	✔		1	1,6020A	0.2	<DL	<DL	10.2 µg/L	
Chromium III	✔		1	1,6020A	1	<DL	<DL	323 µg/L	
Chromium VI	✔		1	1,6020A	1	<DL	<DL	323 µg/L	
Copper		✔	1	1,6020A	1	2.54	2.54	242 µg/L	
Iron		✔	1	19200.7	500	1490	1490	5,000 µg/L	
Lead		✔	1	1,6020A	10	<DL	<DL	160 µg/L	
Mercury	✔		1	3,245.1	0.2	<DL	<DL	0.739 µg/L	
Nickel		✔	1	1,6020A	0.5	2.95	2.95	1,450 µg/L	
Selenium	✔		1	1,6020A	5	<DL	<DL	235.8 µg/L	
Silver	✔		1	1,6020A	0.4	<DL	<DL	35.1 µg/L	
Zinc		✔	1	1,6020A	10	<DL	<DL	420 µg/L	
Cyanide		✔	1	121,4500C	5	112	112	178 mg/L	5
B. Non-Halogenated VOCs									
Total BTEX	✔		0			<DL	<DL	100 µg/L	---
Benzene	✔		0			<DL	<DL	5.0 µg/L	---
1,4 Dioxane	✔		0			<DL	<DL	200 µg/L	---
Acetone	✔		0			<DL	<DL	7.97 mg/L	---
Phenol	✔		0			<DL	<DL	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	✔		0			<DL	<DL	4.4 µg/L	
1,2 Dichlorobenzene	✔		0			<DL	<DL	600 µg/L	---
1,3 Dichlorobenzene	✔		0			<DL	<DL	320 µg/L	---
1,4 Dichlorobenzene	✔		0			<DL	<DL	5.0 µg/L	---
Total dichlorobenzene	✔		0			<DL	<DL	763 µg/L in NH	---
1,1 Dichloroethane	✔		0			<DL	<DL	70 µg/L	---
1,2 Dichloroethane	✔		0			<DL	<DL	5.0 µg/L	---
1,1 Dichloroethylene	✔		0			<DL	<DL	3.2 µg/L	---
Ethylene Dibromide	✔		0			<DL	<DL	0.05 µg/L	---
Methylene Chloride	✔		0			<DL	<DL	4.6 µg/L	---
1,1,1 Trichloroethane	✔		0			<DL	<DL	200 µg/L	---
1,1,2 Trichloroethane	✔		0			<DL	<DL	5.0 µg/L	---
Trichloroethylene	✔		0			<DL	<DL	5.0 µg/L	---
Tetrachloroethylene	✔		0			<DL	<DL	5.0 µg/L	
cis-1,2 Dichloroethylene	✔		0			<DL	<DL	70 µg/L	---
Vinyl Chloride	✔		0			<DL	<DL	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	18270D-SI	5.0	<DL	<DL	190 µg/L	
Diethylhexyl phthalate	✔		1	18270D-SI	5.0	<DL	<DL	101 µg/L	
Total Group I PAHs	✔		1	18270D-SI	0.1	<DL	<DL	1.0 µg/L	---
Benzo(a)anthracene	✔		1	18270D-SI	0.1	<DL	<DL	As Total PAHs	
Benzo(a)pyrene	✔		1	18270D-SI	0.1	<DL	<DL		
Benzo(b)fluoranthene	✔		1	18270D-SI	0.1	<DL	<DL		
Benzo(k)fluoranthene	✔		1	18270D-SI	0.1	<DL	<DL		
Chrysene	✔		1	18270D-SI	0.1	<DL	<DL		
Dibenzo(a,h)anthracene	✔		1	18270D-SI	0.1	<DL	<DL		
Indeno(1,2,3-cd)pyrene	✔		1	18270D-SI	0.1	<DL	<DL		

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	✔		1	18270D-SI	0.1	0.1	0.1	100 µg/L	---
Naphthalene		✔	1	18270D-SI	2.5	0.22	0.22	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		0	0	0			0.000064 µg/L	---
Pentachlorophenol	✔		0	0	0			1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	74,1664A	400	<DL	<DL	5.0 mg/L	---
Ethanol	✔		0					Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	1,8260C	1.0	<DL	<DL	70 µg/L	
tert-Butyl Alcohol	✔		1	1,8260C	10	<DL	<DL	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	1,8260C	2.0	<DL	<DL	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:									
pH - Influent		✔	1	121,4500H		7.6			
Salinity - Influent		✔	1	121,2520B	2.0	11			
Temp - Influent		✔	1	YSI		15.84 C			
pH - Receiving Water		✔	1	121,4500H		7.5			
Salinity - Receiving Water		✔	1	121,2520B	2.0	18.22			
Temp - Receiving Water		✔	1	YSI		16.04 C			
Cyanide, Physiologically		✔	1	64,9014(m	5	26			

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.
Settling tank, bag filters, and ion resin exchange

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: Frac Tank Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	50
Provide the proposed maximum effluent flow in gpm.	50
Provide the average effluent flow in gpm.	25
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:
n/a

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 Supplemental Information
•The discharge will be to the marine waters of Boston Harbor in Massachusetts and will not likely impact the following watersheds/rivers; Connecticut, Merrimack, Taunton or Piscataqua.
•Online and historical data indicates the possible presence of the following Marine Mammals and Reptiles at varying life stages in the Boston Harbor; Loggerhead Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Green Sea Turtle, Hawksbill Sea Turtle, North Atlantic Right Whale, and/or Fin Whale .
•No formal or informal consultation with NMFS has been made at this time, however it is not believed that permitted discharge into Boston Harbor would adversely affect the local marine fauna listed above.

■ **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.

NMFS Supporting Information

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 Statement has been prepared in accordance with good engineering practices following Part 2.5 of the RGP and shall be implemented upon initiation of 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 ☐ Submission of documentation to and approval from BWSC in tandem with this NOI
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: 8/6/2018
Print Name and Title:	Gregory Sawin- Project Executive

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Suffolk Construction Co. Address: 65 Allerton Street Boston MA 02118

Phone Number: 617 517 3512 Fax number: _____

Contact person name: Greg Sawin Title: Project Executive

Cell number: 617 593 0749 Email address: GSawin@suffolk.com

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

Owner's Information (if different from above):

Owner of property being dewatered: DIV Shawmut LLC

Owner's mailing address: 125 High Street - Suite 2111 Boston, MA 02110 Phone number: 617 936 4816

Location of Discharge & Proposed Treatment System(s):

Street number and name: 112 Shawmut Avenue Neighborhood South End

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

Describe Proposed Pre-Treatment System(s): Frac Tank, Bag Filters and ION Resin

BWSC Outfall No. SDO353 Receiving Waters Fort Point Channel via The Bass River

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Temporary Discharges (Provide Anticipated Dates of Discharge): From 10/2018 To 09/2019

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

Permanent Discharges

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

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

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Matthew Tuttle, Engineering Customer Service
E-mail: tuttlemp@bwsc.org
Phone: 617-989-7204 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: _____ Date: 8/6/18

APPENDIX C:

DEP PRIORITY RESOURCES MAP

USGS STREAMFLOW STATISTICS REPORT

DILUTION FACTOR AND WQBEL CALCULATIONS

ADDITIONAL NOI SUPPORT INFORMATION

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

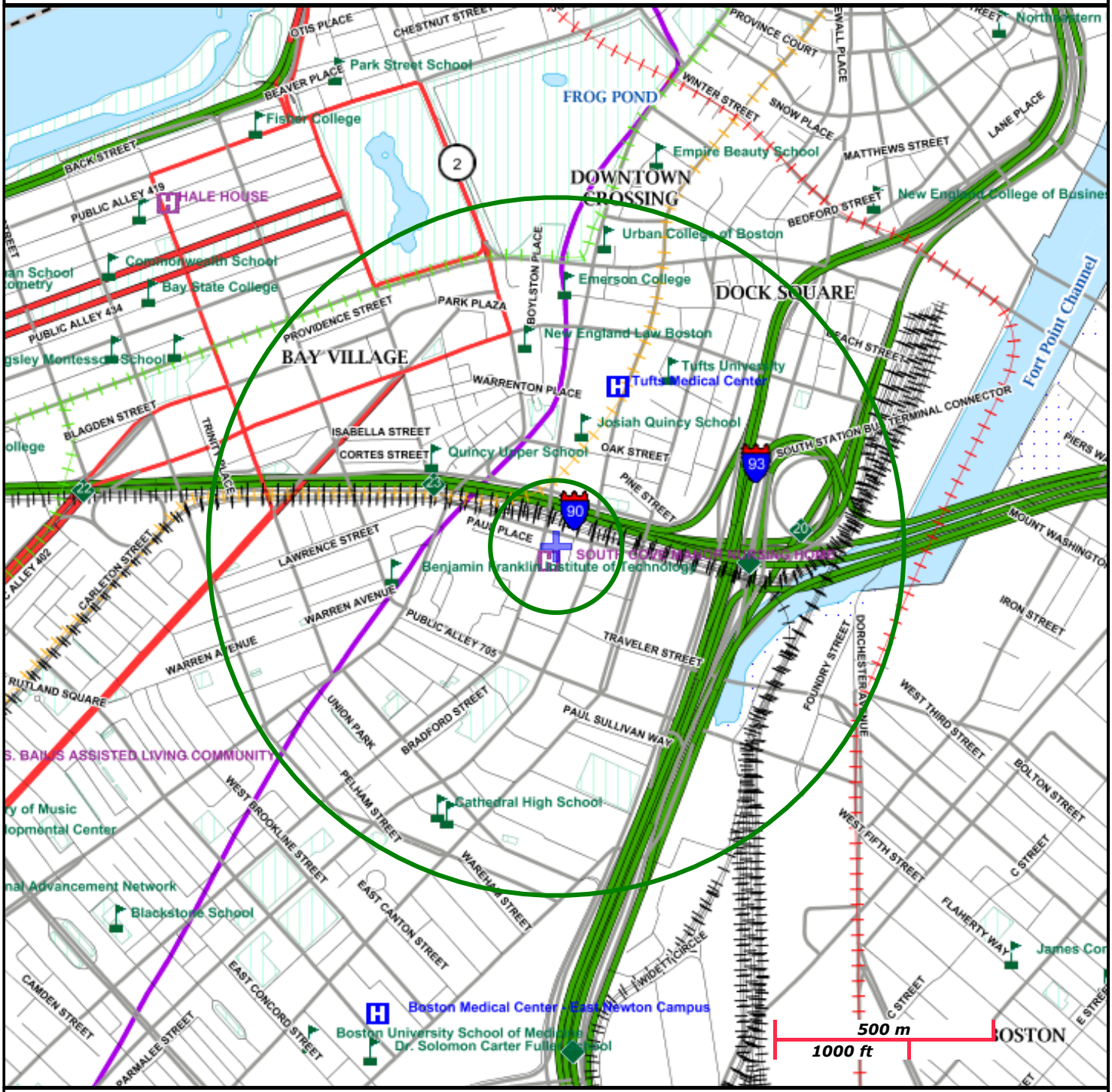
Site Information:

112 SHAWMUT AVE BOSTON, MA

NAD83 UTM Meters:
4690319mN , 329860mE (Zone: 19)
July 12, 2018

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Street No: 112; Street Name: Shawmut Ave; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-2342
Event Code: 05E1NE00-2018-E-05465
Project Name: 112 Shawmut Ave

July 10, 2018

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2342

Event Code: 05E1NE00-2018-E-05465

Project Name: 112 Shawmut Ave

Project Type: DEVELOPMENT

Project Description: <1 Acre

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.34650013264944N71.0655372416376W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX D:

LABORATORY ANALYTICAL DATA – GROUNDWATER

ANALYTICAL REPORT

Lab Number:	L1824503
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	112 SHAWMUT AVE.
Project Number:	6342.9.75
Report Date:	07/03/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1824503-01	B-2 (OW)	GROUNDWATER	BOSTON, MA	06/27/18 12:30	06/27/18

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

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: 112 SHAWMUT AVE. **Lab Number:** L1824503
Project Number: 6342.9.75 **Report Date:** 07/03/18

Case Narrative (continued)

Report Submission

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.

Total Metals

L1824503-01: The sample has an elevated detection limit for lead due to the dilution required by the high concentrations of target and non-target elements.

Hexavalent Chromium

L1824503-01: The sample has an elevated detection limit due to the dilution required by the sample matrix.

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: Amita Naik

Title: Technical Director/Representative Date: 07/03/18

ORGANICS

VOLATILES

Project Name: 112 SHAWMUT AVE.
Lab Number: L1824503
Project Number: 6342.9.75
Report Date: 07/03/18

SAMPLE RESULTS

Lab ID: L1824503-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA

Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8260C
Analytical Date: 06/29/18 14:00
Analyst: BD

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
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	111		70-130

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/29/18 12:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1131390-5					
Methyl tert butyl ether	ND		ug/l	1.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	105		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

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: WG1131390-3 WG1131390-4								
Methyl tert butyl ether	110		98		63-130	12		20
Tert-Butyl Alcohol	108		118		70-130	9		20
Tertiary-Amyl Methyl Ether	98		89		66-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		104		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	88		86		70-130
Dibromofluoromethane	108		107		70-130

SEMIVOLATILES

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

SAMPLE RESULTS

Lab ID: L1824503-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA

Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8270D
Analytical Date: 07/01/18 18:26
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 06/30/18 02:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	100		10-120
4-Terphenyl-d14	99		41-149

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75
Lab Number: L1824503
Report Date: 07/03/18

SAMPLE RESULTS

Lab ID: L1824503-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA

Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater
Analytical Method: 1,8270D-SIM
Analytical Date: 07/02/18 11:10
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 06/30/18 02:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Naphthalene	0.22		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	84		10-120
4-Terphenyl-d14	74		41-149

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/01/18 16:17
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 06/30/18 02:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1131443-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	92		10-120
4-Terphenyl-d14	102		41-149

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/02/18 08:35
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 06/30/18 02:51

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1131444-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	77		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

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: WG1131443-2 WG1131443-3								
Bis(2-ethylhexyl)phthalate	101		106		40-140	5		30
Butyl benzyl phthalate	102		105		40-140	3		30
Di-n-butylphthalate	96		100		40-140	4		30
Di-n-octylphthalate	101		104		40-140	3		30
Diethyl phthalate	94		98		40-140	4		30
Dimethyl phthalate	92		100		40-140	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		53		21-120
Phenol-d6	38		38		10-120
Nitrobenzene-d5	96		96		23-120
2-Fluorobiphenyl	89		93		15-120
2,4,6-Tribromophenol	106		113		10-120
4-Terphenyl-d14	106		112		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

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: WG1131444-2 WG1131444-3								
Acenaphthene	86		83		40-140	4		40
Fluoranthene	83		83		40-140	0		40
Naphthalene	72		68		40-140	6		40
Benzo(a)anthracene	76		75		40-140	1		40
Benzo(a)pyrene	79		77		40-140	3		40
Benzo(b)fluoranthene	79		78		40-140	1		40
Benzo(k)fluoranthene	82		82		40-140	0		40
Chrysene	79		78		40-140	1		40
Acenaphthylene	81		77		40-140	5		40
Anthracene	81		77		40-140	5		40
Benzo(ghi)perylene	76		77		40-140	1		40
Fluorene	89		87		40-140	2		40
Phenanthrene	78		77		40-140	1		40
Dibenzo(a,h)anthracene	81		82		40-140	1		40
Indeno(1,2,3-cd)pyrene	77		78		40-140	1		40
Pyrene	80		80		40-140	0		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

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: WG1131444-2 WG1131444-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43		41		21-120
Phenol-d6	31		30		10-120
Nitrobenzene-d5	76		71		23-120
2-Fluorobiphenyl	78		75		15-120
2,4,6-Tribromophenol	84		83		10-120
4-Terphenyl-d14	83		83		41-149

METALS

Project Name: 112 SHAWMUT AVE.
Lab Number: L1824503
Project Number: 6342.9.75
Report Date: 07/03/18

SAMPLE RESULTS

Lab ID: L1824503-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA
Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

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	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00569		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Copper, Total	0.00254		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Iron, Total	1.49		mg/l	0.050	--	1	06/29/18 13:26	06/29/18 23:20	EPA 3005A	19,200.7	AB
Lead, Total	ND		mg/l	0.01000	--	10	06/29/18 13:26	07/03/18 12:14	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	06/28/18 12:07	06/28/18 17:07	EPA 245.1	3,245.1	MG
Nickel, Total	0.00295		mg/l	0.00200	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/29/18 13:26	07/03/18 11:39	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.050	--	1		07/03/18 11:39	NA	107,-	

Project Name: 112 SHAWMUT AVE. **Lab Number:** L1824503

Project Number: 6342.9.75 **Report Date:** 07/03/18

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: WG1130770-1										
Mercury, Total	ND		mg/l	0.00020	--	1	06/28/18 12:07	06/28/18 16:19	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1131180-1										
Iron, Total	ND		mg/l	0.050	--	1	06/29/18 13:26	06/29/18 22:20	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 Batch: WG1131181-1										
Antimony, Total	ND		mg/l	0.00400	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/29/18 13:26	07/03/18 11:05	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1130770-2								
Mercury, Total	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1131180-2								
Iron, Total	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1131181-2								
Antimony, Total	94		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	105		-		85-115	-		
Chromium, Total	101		-		85-115	-		
Copper, Total	101		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	101		-		85-115	-		
Silver, Total	103		-		85-115	-		
Zinc, Total	104		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

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: WG1130770-3 QC Sample: L1823734-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00495	99		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1130770-5 QC Sample: L1823734-03 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00480	96		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1131180-3 QC Sample: L1824496-01 Client ID: MS Sample												
Iron, Total	2.06	1	3.12	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1131181-3 QC Sample: L1824496-01 Client ID: MS Sample												
Antimony, Total	0.00863	0.5	0.6765	**134**	Q	-	-		70-130	-		20
Arsenic, Total	0.00747	0.12	0.1329	104		-	-		70-130	-		20
Cadmium, Total	0.00027	0.051	0.05807	113		-	-		70-130	-		20
Chromium, Total	0.00771	0.2	0.2117	102		-	-		70-130	-		20
Copper, Total	0.02025	0.25	0.2761	102		-	-		70-130	-		20
Lead, Total	0.03397	0.51	0.5675	105		-	-		70-130	-		20
Nickel, Total	0.03076	0.5	0.5489	104		-	-		70-130	-		20
Selenium, Total	0.02611	0.12	0.1455	99		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05250	105		-	-		70-130	-		20
Zinc, Total	0.1086	0.5	0.6470	108		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1130770-4 QC Sample: L1823734-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1130770-6 QC Sample: L1823734-03 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1131180-4 QC Sample: L1824496-01 Client ID: DUP Sample						
Iron, Total	2.06	2.14	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1131181-4 QC Sample: L1824496-01 Client ID: DUP Sample						
Antimony, Total	0.00863	0.00947	mg/l	9		20
Arsenic, Total	0.00747	0.00753	mg/l	1		20
Cadmium, Total	0.00027	0.00025	mg/l	5		20
Chromium, Total	0.00771	0.00777	mg/l	1		20
Copper, Total	0.02025	0.02066	mg/l	2		20
Lead, Total	0.03397	0.03345	mg/l	2		20
Nickel, Total	0.03076	0.03068	mg/l	0		20
Selenium, Total	0.02611	0.02725	mg/l	4		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.1086	0.1113	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

SAMPLE RESULTS

Lab ID: L1824503-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA

Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	11		SU	2.0	--	1	-	06/28/18 02:30	121,2520B	MA
Solids, Total Suspended	7.1		mg/l	1.0	NA	1	-	06/29/18 12:30	121,2540D	JT
Cyanide, Total	0.112		mg/l	0.005	--	1	06/28/18 13:20	06/29/18 12:17	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/27/18 23:32	121,4500CL-D	AS
pH (H)	7.6		SU	-	NA	1	-	06/28/18 06:25	121,4500H+-B	MA
Nitrogen, Ammonia	1.83		mg/l	0.075	--	1	06/28/18 13:00	06/28/18 23:29	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/29/18 17:30	06/29/18 22:00	74,1664A	ML
Chromium, Hexavalent	ND		mg/l	0.050	--	5	06/28/18 02:00	06/28/18 05:32	1,7196A	MA
Anions by Ion Chromatography - Westborough Lab										
Chloride	7410		mg/l	250	--	500	-	06/28/18 19:28	44,300.0	AU

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75
Lab Number: L1824503
Report Date: 07/03/18

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: WG1130505-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/27/18 23:32	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1130531-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/28/18 02:00	06/28/18 03:55	1,7196A	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1130747-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/28/18 13:00	06/28/18 23:12	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1130784-1										
Cyanide, Total	ND		mg/l	0.005	--	1	06/28/18 13:20	06/29/18 11:51	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1131023-1										
Solids, Total Suspended	ND		mg/l	1.0	NA	1	-	06/29/18 12:30	121,2540D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1131321-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/29/18 17:30	06/29/18 22:00	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1131399-1										
Chloride	ND		mg/l	0.500	--	1	-	06/28/18 17:40	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130505-2								
Chlorine, Total Residual	93		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130531-2								
Chromium, Hexavalent	95		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130558-1								
SALINITY	99		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130610-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130747-2								
Nitrogen, Ammonia	99		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1130784-2								
Cyanide, Total	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1131321-2								
TPH	89		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1824503

Report Date: 07/03/18

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1131399-2					
Chloride	99	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

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: WG1130505-4 QC Sample: L1824477-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.248	0.25	101		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130531-4 QC Sample: L1824503-01 Client ID: B-2 (OW)												
Chromium, Hexavalent	ND	0.5	0.478	96		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130747-4 QC Sample: L1824004-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.098	4	3.28	80		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130784-4 QC Sample: L1823973-02 Client ID: MS Sample												
Cyanide, Total	0.005	0.2	0.196	95		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1131321-4 QC Sample: L1824188-01 Client ID: MS Sample												
TPH	ND	20.8	19.4	93		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1131399-3 QC Sample: L1824496-02 Client ID: MS Sample												
Chloride	1160	200	1340	**89**	Q	-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
Report Date: 07/03/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130505-3 QC Sample: L1824477-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130531-3 QC Sample: L1824503-01 Client ID: B-2 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130558-2 QC Sample: L1824503-01 Client ID: B-2 (OW)						
SALINITY	11	11	SU	0		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130610-2 QC Sample: L1824350-01 Client ID: DUP Sample						
pH	7.0	7.0	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130747-3 QC Sample: L1824004-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.098	0.102	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1130784-3 QC Sample: L1823973-01 Client ID: DUP Sample						
Cyanide, Total	0.005	0.005	mg/l	15		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1131023-2 QC Sample: L1824310-01 Client ID: DUP Sample						
Solids, Total Suspended	18	18	mg/l	0		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1131321-3 QC Sample: L1824188-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1131399-4 QC Sample: L1824496-02 Client ID: DUP Sample						
Chloride	1160	1160	mg/l	0		18

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1824503
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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(*)
L1824503-01A	Vial HCl preserved	A	NA		5.3	Y	Absent		SUB-ETHANOL(14)
L1824503-01B	Vial HCl preserved	A	NA		5.3	Y	Absent		SUB-ETHANOL(14)
L1824503-01C	Vial HCl preserved	A	NA		5.3	Y	Absent		SUB-ETHANOL(14)
L1824503-01D	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1824503-01E	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1824503-01F	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1824503-01G	Amber 1000ml HCl preserved	A	NA		5.3	Y	Absent		TPH-1664(28)
L1824503-01H	Amber 1000ml HCl preserved	A	NA		5.3	Y	Absent		TPH-1664(28)
L1824503-01I	Amber 1000ml unpreserved	A	7	7	5.3	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1824503-01J	Amber 1000ml unpreserved	A	7	7	5.3	Y	Absent		HOLD-WETCHEM()
L1824503-01K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	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)
L1824503-01L	Plastic 250ml NaOH preserved	A	>12	>12	5.3	Y	Absent		TCN-4500(14)
L1824503-01M	Plastic 500ml H2SO4 preserved	A	NA		5.3	Y	Absent		NH3-4500(28)
L1824503-01N	Plastic 950ml unpreserved	A	NA		5.3	Y	Absent		TSS-2540-LOW(7),CL-300(28),HEXCR-7196(1),SALINITY(28),TRC-4500(1),PH-4500(.01)
L1824503-01O	Plastic 950ml unpreserved	A	NA		5.3	Y	Absent		TSS-2540-LOW(7),CL-300(28),HEXCR-7196(1),SALINITY(28),TRC-4500(1),PH-4500(.01)

*Values in parentheses indicate holding time in days

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1824503
Project Number:	6342.9.75	**Report Date:**	07/03/18

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: Data Usability Report

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1824503
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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:	112 SHAWMUT AVE.	**Lab Number:**	L1824503
Project Number:	6342.9.75	**Report Date:**	07/03/18

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.

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: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
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: Chloride, 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, SM4500CI-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: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, 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, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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: 06-27-2018

ALPHA Job #: L1824503

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: KSeaman@McPhailgeo.com

Additional Project Information:

☐ Run TCLP (if triggered)

Project Information

Project Name: 112 Shawmut Ave
Project Location: Boston, MA
Project #: 6342-9.75
Project Manager: Kirk Seaman
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 _____

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics	RGP Section D	RGP Section F Parameters	DH / Salinity	SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
24503-01	B-2(CW)		GW	6/27/18	1230	TMC											X	X	X	X		15

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

Sample Material
F=Fil S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

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=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

RGP Section A Inorganics: *Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals*

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Tom Cormier	6/27/18 1430	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up		AAL	6/27 1600
AAL	6/27 1735		6/27/18 1735

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

DOC ID: 25188 Rev 0 (11/28/2017)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1824503

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 603.319.5010
Email: mgulli@alphalab.com

Project Information

Project Location: MA
Project Manager: Melissa Gulli

Turnaround & Deliverables Information

Due Date: 07/06/18
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1824503

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	B-2 (OW)	06-27-18 12:30	Groundwater	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature] AAR	6/28/18		
Form No: AL_subcoc				

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-154875-1
Client Project/Site: L1824503

For:
Alpha Analytical Inc
145 Flanders Road
Westborough, Massachusetts 01581-1019

Attn: Melissa Gulli

Authorized for release by:
7/2/2018 4:42:41 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

Table of Contents

Sample Summary

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-154875-1	B-2 (OW)	Water	06/27/18 12:30	06/29/18 10:30

Case Narrative

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Job ID: 490-154875-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-154875-1

Comments
No additional comments.

Receipt
The sample was received on 6/29/2018 10:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

GC Semi VOA
Method 1671A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-526236.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Client Sample ID: B-2 (OW)
Date Collected: 06/27/18 12:30
Date Received: 06/29/18 10:30

Lab Sample ID: 490-154875-1
Matrix: Water

Method: 1671A - Ethanol (GC/FID)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			07/02/18 12:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*93*		*70 - 130*		*07/02/18 12:14*	*1*

QC Sample Results

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Method: 1671A - Ethanol (GC/FID)

Lab Sample ID: MB 490-526236/6
Matrix: Water
Analysis Batch: 526236

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			07/02/18 11:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*98*		*70 - 130*		*07/02/18 11:30*	*1*

Lab Sample ID: LCS 490-526236/7
Matrix: Water
Analysis Batch: 526236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethanol			50200	49930		ug/L		99	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Isopropyl acetate (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 490-526236/8
Matrix: Water
Analysis Batch: 526236

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethanol			50200	48130		ug/L		96	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Isopropyl acetate (Surr)	*100*		*70 - 130*

QC Association Summary

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

GC VOA

Analysis Batch: 526236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154875-1	B-2 (OW)	Total/NA	Water	1671A	
MB 490-526236/6	Method Blank	Total/NA	Water	1671A	
LCS 490-526236/7	Lab Control Sample	Total/NA	Water	1671A	
LCSD 490-526236/8	Lab Control Sample Dup	Total/NA	Water	1671A	

Lab Chronicle

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Client Sample ID: B-2 (OW)

Date Collected: 06/27/18 12:30
Date Received: 06/29/18 10:30

Lab Sample ID: 490-154875-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1671A		1			526236	07/02/18 12:14	NMB	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Method	Method Description	Protocol	Laboratory
1671A	Ethanol (GC/FID)	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Alpha Analytical Inc
Project/Site: L1824503

TestAmerica Job ID: 490-154875-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2938	10-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

Maine	State Program	1	TN00032	11-03-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-154875 Chain of Custody

Cooler Received/Opened On 6/29/2018 @ 10:30

Time Samples Removed From Cooler 16:12 Time Samples Placed In Storage 16:18 (2 Hour Window)

1. Tracking # 1ZE306540198147171 (last 4 digits, FedEx) Courier: UPS NDA

IR Gun ID 17960358 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 3.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where:

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial) KD

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) KD

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) KD

I certify that I attached a label with the unique LIMS number to each container (intial) KD

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1824503

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 603.319.5010
Email: mgulli@alphalab.com

Project Information

Project Location: MA
Project Manager: Melissa Gulli

Turnaround & Deliverables Information

Due Date: 07/06/18
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1824503

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	B-2 (OW)	06-27-18 12:30	Groundwater	Ethanol by EPA 1671 Revision A	

Loc: 490
154875

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature] AAL	6/28/18	[signature] TA-NAS	06-29-2018 10:30

Form No: AL_subcoc

317

ANALYTICAL REPORT

Lab Number:	L1827577
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	112 SHAWMUT AVE.
Project Number:	6342.9.75
Report Date:	07/19/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1827577
Report Date: 07/19/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1827577-01	B-2 (OW)	GROUNDWATER	BOSTON, MA	06/27/18 12:30	06/27/18

Project Name: 112 SHAWMUT AVE. **Lab Number:** L1827577
Project Number: 6342.9.75 **Report Date:** 07/19/18

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:	112 SHAWMUT AVE.	**Lab Number:**	L1827577
Project Number:	6342.9.75	**Report Date:**	07/19/18

Case Narrative (continued)

Cyanide, Physiologically Available

L1827577-01 was analyzed with the method required holding time exceeded.

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: 07/19/18

INORGANICS
&
MISCELLANEOUS

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1827577
Report Date: 07/19/18

SAMPLE RESULTS

Lab ID: L1827577-01
Client ID: B-2 (OW)
Sample Location: BOSTON, MA

Date Collected: 06/27/18 12:30
Date Received: 06/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Groundwater

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Physiologically Available	0.026		mg/l	0.005	--	1	07/19/18 09:40	07/19/18 12:29	64,9014(M)	LH

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75
Lab Number: L1827577
Report Date: 07/19/18

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: WG1137321-1										
Cyanide, Physiologically Available	ND		mg/l	0.005	--	1	07/19/18 09:40	07/19/18 12:25	64,9014(M)	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1827577

Report Date: 07/19/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1137321-2								
Cyanide, Physiologically Available	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1137321-3								
Cyanide, Physiologically Available	**0**		-		0-10	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1827577
Report Date: 07/19/18

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: WG1137321-7 QC Sample: L1827577-01 Client ID: B-2 (OW)												
Cyanide, Physiologically Available	0.026	0.2	0.208	91		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.75

Lab Number: L1827577

Report Date: 07/19/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1137321-6 QC Sample: L1827577-01 Client ID: B-2 (OW)						
Cyanide, Physiologically Available	0.026	0.024	mg/l	10		20

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.75

Lab Number: L1827577
Report Date: 07/19/18

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(*)
L1827577-01A	Plastic 250ml NaOH preserved	A	>12	>12	5.3	Y	Absent		PACN(14)

*Values in parentheses indicate holding time in days

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1827577
Project Number:	6342.9.75	**Report Date:**	07/19/18

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).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
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.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample¿s toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
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.

Report Format: Data Usability Report

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1827577
Project Number:	6342.9.75	**Report Date:**	07/19/18

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 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

REFERENCES

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

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

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

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: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
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: Chloride, 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, SM4500CI-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: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, 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, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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

ALPHA ANALYTICAL

PAGE 1 OF 1

Date Rec'd in Lab: 06-27-2018

ALPHA Job #: L1821503

Project Information
Project Name: 112 Shawmut Ave
Project Location: Boston, MA
Project #: 6342-9.T5
Project Manager: Kirk Seaman
ALPHA Quote #:

Client Information
Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: kseaman@McPhailgeo.com

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 ______

Turn-Around Time
☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Additional Project Information:
☐ Run TCLP (if triggered)

Sample "Sample ID" Nomenclature: B-100, S-1

Analysis columns: Soil Assessment Package IV (less VOC); VOC: ☐ 8260; Total Solids; SVOC: ☐ PAH; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14; DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14; METALS: Total Sb,Be,Ni,Tl,V,Zn; ☐ PCBs ☐ Pesticides; ~~RGP Section A Inorganics~~; RGP Section D; MCP Section E Sel; pH / Salinity

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Material	Collection Date	Collection Time	Sampler Initials	RGP Section A Inorganics	RGP Section D	MCP Section E Sel	pH / Salinity	Sample Comments	Total Bottles
~~21503-01~~ 27577-01	B-2(OW)		GW	6/27/18	1230	TMC	X	X	X	X	PACN	15

Container Type	Preservative
A=Amber glass	A=None
B=Bacteria cup	B=HCl
C=Cube	C=HNO_3
D=BOD bottle	D=H_2SO_4
E=Encore	E=NaOH
G=Glass	F=MeOH
O=Other	G=$NaHSO_4$
P=Plastic	H=$Na_2S_2O_3$
V=Vial	I=Ascorbic Acid
	J=NH_4Cl
	K=Zn Acetate
	O=Other

Sample Material: F=Fill, S=Sand, O=Organics, C=Clay, N=Natural, T=Till, GM=Glaciomarine, GW=Groundwater

RGP Section A Inorganics: Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

Relinquished By	Date/Time	Received By	Date/Time
Tom Cormier	6/27/18 1430	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up		[signature] AAL	6/27 1600
[signature] AAL	6/27 1735	[signature]	6/27/18 1735

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

DOC ID: 25108 Rev 0 (11/25/2017)

APPENDIX E:

LABORATORY ANALYTICAL DATA – SURFACE WATER

ANALYTICAL REPORT

Lab Number:	L1826656
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	112 SHAWMUT AVE.
Project Number:	6342.9.T5
Report Date:	07/18/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.T5

Lab Number: L1826656
Report Date: 07/18/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1826656-01	BASS RIVER	WATER	BOSTON, MA	07/12/18 11:00	07/12/18

Project Name: 112 SHAWMUT AVE. **Lab Number:** L1826656

Project Number: 6342.9.T5 **Report Date:** 07/18/18

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1826656
Project Number:	6342.9.T5	**Report Date:**	07/18/18

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:	112 SHAWMUT AVE.	**Lab Number:**	L1826656
Project Number:	6342.9.T5	**Report Date:**	07/18/18

Case Narrative (continued)

MCP Related Narratives

Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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: 07/18/18

METALS

Project Name: 112 SHAWMUT AVE.
Lab Number: L1826656
Project Number: 6342.9.T5
Report Date: 07/18/18

SAMPLE RESULTS

Lab ID: L1826656-01
Client ID: BASS RIVER
Sample Location: BOSTON, MA
Date Collected: 07/12/18 11:00
Date Received: 07/12/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Lead, Total	0.030		mg/l	0.010	--	1	07/16/18 13:00	07/17/18 16:16	EPA 3005A	97,6010D	AB
Mercury, Total	ND		mg/l	0.0002	--	1	07/13/18 11:05	07/13/18 18:31	EPA 7470A	97,7470A	MG
Nickel, Total	ND		mg/l	0.025	--	1	07/16/18 13:00	07/17/18 16:16	EPA 3005A	97,6010D	AB
Selenium, Total	ND		mg/l	0.010	--	1	07/16/18 13:00	07/17/18 16:16	EPA 3005A	97,6010D	AB
Silver, Total	ND		mg/l	0.007	--	1	07/16/18 13:00	07/17/18 16:16	EPA 3005A	97,6010D	AB
Zinc, Total	0.061		mg/l	0.050	--	1	07/16/18 13:00	07/17/18 16:16	EPA 3005A	97,6010D	AB

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.T5
Lab Number: L1826656
Report Date: 07/18/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1135379-1										
Mercury, Total	ND		mg/l	0.0002	--	1	07/13/18 11:05	07/13/18 18:13	97,7470A	MG

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1136116-1										
Lead, Total	ND		mg/l	0.010	--	1	07/16/18 13:00	07/17/18 16:39	97,6010D	AB
Nickel, Total	ND		mg/l	0.025	--	1	07/16/18 13:00	07/17/18 16:39	97,6010D	AB
Selenium, Total	ND		mg/l	0.010	--	1	07/16/18 13:00	07/17/18 16:39	97,6010D	AB
Silver, Total	ND		mg/l	0.007	--	1	07/16/18 13:00	07/17/18 16:39	97,6010D	AB
Zinc, Total	ND		mg/l	0.050	--	1	07/16/18 13:00	07/17/18 16:39	97,6010D	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.T5

Lab Number: L1826656

Report Date: 07/18/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1135379-2 WG1135379-3								
Mercury, Total	96		102		80-120	6		20
MCP Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1136116-2 WG1136116-3								
Lead, Total	99		100		80-120	1		20
Nickel, Total	95		96		80-120	1		20
Selenium, Total	99		100		80-120	1		20
Silver, Total	85		86		80-120	1		20
Zinc, Total	99		101		80-120	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.T5

Lab Number: L1826656
Report Date: 07/18/18

SAMPLE RESULTS

Lab ID: L1826656-01
Client ID: BASS RIVER
Sample Location: BOSTON, MA

Date Collected: 07/12/18 11:00
Date Received: 07/12/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	24		SU	2.0	--	1	-	07/13/18 02:00	121,2520B	UN
pH (H)	7.6		SU	-	NA	1	-	07/13/18 03:04	121,4500H+-B	MA
Nitrogen, Ammonia	0.282		mg/l	0.075	--	1	07/13/18 11:45	07/13/18 21:40	121,4500NH3-BH	AT

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.T5
Lab Number: L1826656
Report Date: 07/18/18

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: WG1135310-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/13/18 11:45	07/13/18 21:12	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.T5

Lab Number: L1826656

Report Date: 07/18/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1135206-1								
SALINITY	100		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1135226-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1135310-2								
Nitrogen, Ammonia	96		-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 112 SHAWMUT AVE.

Project Number: 6342.9.T5

Lab Number: L1826656

Report Date: 07/18/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1135206-2 QC Sample: L1826656-01 Client ID: BASS RIVER						
SALINITY	24	24	SU	0		

Project Name: 112 SHAWMUT AVE.
Project Number: 6342.9.T5

Lab Number: L1826656
Report Date: 07/18/18

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(*)
L1826656-01A	Plastic 250ml H2SO4 preserved	A	<2	<2	3.5	Y	Absent		NH3-4500(28)
L1826656-01B	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		MCP-7470T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1826656-01C	Plastic 250ml HNO3 preserved	A	<2	<2	3.5	Y	Absent		MCP-7470T-10(28),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L1826656-01D	Plastic 500ml unpreserved	A	7	7	3.5	Y	Absent		SALINITY(28),PH-4500(.01)
L1826656-01E	Plastic 500ml unpreserved	A	7	7	3.5	Y	Absent		SALINITY(28),PH-4500(.01)

*Values in parentheses indicate holding time in days

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1826656
Project Number:	6342.9.T5	**Report Date:**	07/18/18

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: Data Usability Report

Project Name:	112 SHAWMUT AVE.	**Lab Number:**	L1826656
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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:	112 SHAWMUT AVE.	**Lab Number:**	L1826656
Project Number:	6342.9.T5	**Report Date:**	07/18/18

REFERENCES

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

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: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
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: Chloride, 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, SM4500CI-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: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, 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, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

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: 7-12-18

ALPHA Job #: L1826656

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue
Cambridge, MA 02140
Phone: (617) 868-1420
Email: KSEAMAN@McPhailgeo.com

Project Information

Project Name: 112 SHAWMUT AVE
Project Location: BOSTON, MA
Project #: 6342.9.T5
Project Manager: K. SEAMAN
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:

☐ Run TCLP (if triggered)

Sample "Sample ID" Nomenclature: B-100, S-1

ALPHA Lab ID (Lab Use Only)	Sample ID	Sample Depth	Sample Material	Collection Date	Collection Time	Sampler Initials	Soil Assessment Package IV (less VOC)	VOC: ☐ 8260	Total Solids	SVOC: ☐ PAH	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	TOTAL METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	DISSOLVED METALS: ☐ RCRA8 ☐ PP13 ☐ MCP 14	METALS: Total Sb,Be,Ni,Tl,V,Zn	☐ PCBs ☐ Pesticides	RGP Section A Inorganics	Ammonia	metals (Pb, Hg, Cu, Zn, Fe)	pH, temp, salinity	SAMPLE INFO *Filtration* ☐ Field ☐ Lab to do *Preservation* ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
26656-01	BASS RIVER	~	SW	7-12-18	11:00	KEH												X	X	X			4

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

Sample Material
F=Fill S=Sand
O=Organics C=Clay
N=Natural T=Till
GM=Glaciomarine
GW=Groundwater

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=Ascorbix Acid
J=NH_4Cl
K=Zn Acetate
O=Other

RGP Section A Inorganics :
Ammonia, Chloride, TRC, TSS, CrVI, CrIII, Total Cyanide, Total RGP Metals

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Kate Hanrahan	7/12/18 13:00	McPhail Associates secure sample storage for laboratory pick-up	
McPhail Associates secure sample storage for laboratory pick-up		AAL	7/12/18 1605
AAL	7/12/18 1745		7/12/18 1745

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

DOC ID: 25188 Rev 0 (11/28/2017)

APPENDIX F:

BEST MANAGEMENT PRACTICE PLAN

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering that will occur during redevelopment of 112 Shawmut Avenue in Boston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

During construction of the proposed building foundation, dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation directly into a settling tank. The effluent will then flow through the necessary treatment systems and discharge through hoses or piping connected into the storm water drains located beneath Shawmut Avenue, East Berkeley Street, and Albany Street. Based upon a review of the City of Boston stormwater drainage plan, the above referenced stormwater drain system ultimately discharges into the Fort Point Channel via the Bass River. Dewatering effluent treatment will consist of a settling tank, bag filters to remove suspended soil particulates and ion resin media vessels prior to off-site discharge. pH adjustment will be conducted, if necessary, through the addition of hydrochloric acid, caustic soda and carbon dioxide.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. During the first week of discharge, the operator must sample the untreated influent and treated effluent two times: one (1) sample of untreated influent and one (1) sample of treated effluent be collected on the first day of discharge, and one (1) sample of untreated influent and one (1) sample of treated effluent must be collected on one additional non-consecutive day within the first week of discharge. Samples must be analyzed in accordance with 40 CFR §136 unless otherwise specified by the RGP, with a maximum 5-day turnaround time and results must be reviewed no more than 48 hours from receipt of the results of each sampling event. After the first week, samples may be analyzed with up to a ten (10)-day turnaround time and results must be reviewed no

more than 72 hours from receipt of the results. If the treatment system is operating as designed and achieving the effluent limitations outlined in the RGP, on-going sampling shall be conducted weekly for three (3) additional weeks beginning no earlier than 24 hours following initial sampling, and monthly as described below. Any adjustments/reductions in monitoring frequency must be approved by EPA in writing.

In accordance with Part 4.1 of the RGP, the operator must perform routine monthly monitoring for both influent and effluent beginning no more than 30 days following the completion of the sampling requirements for new discharges or discharges that have been interrupted. The routine monthly monitoring is to be conducted through the end of the scheduled discharge. The routine monthly monitoring must continue for five (5) consecutive months prior to submission of any request for modification of monitoring frequency.

Dewatering activity for the Site is classified as Category III-G: Sites with Known Contamination. Monitoring shall include analysis of influent and effluent samples dictated by the EPA.

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

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

System Maintenance

A number of methods will be used to minimize the potential for violations during the term of this permit discharge. Scheduled regular maintenance and periodic cleaning of the treatment system will be conducted to verify proper operation and shall be conducted in accordance with Section 1.11 of the project earthwork specifications. Regular maintenance will include checking the condition of the treatment system equipment such as the settling tanks, bag filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues and unscheduled maintenance requirements.

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

Miscellaneous Items

It is anticipated that the erosion control measures and the nature of the site will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be addressed within the overall site security plan.

No adverse effects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Bass River which is located approximately 1,500 feet to the southeast of the subject site. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will pumped through bag filters and ion exchange chambers prior to discharge into the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly into the treatment system from the excavation with use of hoses and localized sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. Bag and resin filters will be replaced/disposed of as necessary.