



**NOTICE OF INTENT FOR DISCHARGE
PURSUANT TO MASSACHUSETTS
REMEDIATION GENERAL PERMIT
MAG910000**

**FIRST STREET PLANNED UNIT
DEVELOPMENT – PARCELS B&C**

CAMBRIDGE, MASSACHUSETTS

APRIL 11, 2019

Prepared For:

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF
ECOSYSTEM PROTECTION
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

On Behalf Of:

Urban Spaces, LLC
US Parcel B, LP and US Parcel C, LLC
&
Tocci Building Companies / First & Hurley Builders, LLC

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

PROJECT NO. 5863



April 11, 2019

U.S. Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Attention: To Whom It May Concern

Reference: First Street Planned Unit Development – Parcels B&C ;
Cambridge, 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 MAG9100000 (RGP) that was issued to the Commonwealth of Massachusetts, the following is a summary of the site and groundwater quality information in support of a Notice of Intent (NOI) for the discharge of construction dewatering into the Charles River via the City of Cambridge storm drain system. The temporary discharge of construction dewatering will occur during redevelopment of the 107 First Street, 21 Charles Street, 18 Hurley Street, and 29 Charles Street/22 Hurley Street properties in Cambridge, Massachusetts (the "subject site"). Refer to **Figure 1**, Project Location Plan for the general site locus.

These services were performed and this permit application was prepared in accordance with our proposal dated December 6, 2017, and the subsequent authorization of Urban Spaces, LLC. These services are subject to the limitations contained in **Appendix A**.

The required Notice of Intent Form contained in the RGP permit and the City of Cambridge Permit to Dewater are included in **Appendix B**.

Applicant/Operator

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

Tocci Building Companies / First & Hurley Builders, LLC
660 Main Street
Woburn, MA 01801

Attention: Mr. Bill Stugis, Project Executive

Tel: (781) 218-5709
Email: bsturgis@tocci.com



Existing Conditions

Fronting onto First Street to the east, the site is bounded by Charles Street to the south, Hurley Street to the north, and a four-story mixed commercial/residential property and a paved parking lot to the west. The subject site is a combination of multiple parcels as indicated below.

Adjacent to First Street, the "107 First Street" parcel consists of three adjacent 1 to 2 story buildings at 101 First Street, 105 First Street, and 111 First Street with a combined footprint of about 16,000 square feet. It is understood that these buildings do not have basements.

Within the center of the site adjacent to Charles Street, the "21 Charles Street" parcel consists of a one-story building and an adjacent paved parking area. It is understood that the building has a footprint of about 13,000 square feet and does not have a basement. The parking lot is located adjacent to both Charles Street and First Street and the ground surface ranges from about Elevation +20 to Elevation +20.5.

Within the center of the site adjacent to Hurley Street, the "18 Hurley Street" parcel consists of a three-story building with a footprint of about 6,900 square feet. It is understood that the building does not have a basement.

Within the western portion of the site, the "29 Charles Street/22 Hurley Street" parcel consists of a paved parking lot. Based on spot grades indicated on the Site Plan, the ground surface at the site ranges from about Elevation +20.5 to about Elevation +22.

The remainder of the site consists of paved parking and driveway areas.

Site Release History

From 2002 through 2004, Haley & Aldrich, Inc. (Haley & Aldrich) and Corporate Environmental Advisor, Inc. (CEA) were retained by Bent Associates Limited Partnership for the environmental assessment of a cluster of parcels located in a three-block area identified as the "Bent Street Development", which included 150 Second Street, 159 First Street, and 121 First Street as well as 29 Charles Street (the subject site). During Haley & Aldrich's Phase I ESA, as reported by CEA, several Recognized Environmental Conditions (RECs) were identified which included the historical use of 29 Charles Street as a "motor freight station". Following the completion of the Phase I ESA, Haley & Aldrich performed a subsurface assessment in August 2003 to characterize the soil and groundwater at the Bent Street Development. In November 2003, CEA conducted further subsurface investigations to further delineate the nature and extent of the impacts to soil and groundwater. During their assessment of the properties, approximately 12 to 16 feet of urban fill material consisting of debris, coal ash, cinders, brick, wood and other granular fill, was identified. Haley & Aldrich's and CEA's subsurface investigations revealed extractable petroleum hydrocarbons



(EPH), naphthalene, 2-methylnaphthalene and metals (mercury, arsenic and lead) in the fill material above Massachusetts Contingency Plan (MCP) Reportable Concentrations. Groundwater was reportedly not found to be significantly impacted by the contaminants found in soil. The release was reported to the Massachusetts Department of Environmental Protection (DEP) on December 23, 2004 and was assigned Release Tracking Number (RTN) 3-23447. Since the distribution of the contaminants in the fill material did not suggest that the release was associated with USTs, the release was attributed to the presence of historic urban fill underlying the pavement and buildings in the area. Based upon the results of a Method 3 Risk Characterization, a Class B-2 Response Action Outcome (RAO) was submitted to the DEP on October 2004 indicating that a condition of No Significant Risk exists at the parcels as long as an Activity and Use Limitation (AUL) was implemented and maintained at the Bent Street Development to prevent exposure to impacted soil.

As of 2012 and 2014, the AUL implemented under RTN 3-23447 has been terminated at 150 Second Street and 159 First Street, respectively. However, the AUL remains in-place for the 121 First Street and 29 Charles Street properties. The AUL was established to control impacted soil exposure for future conditions by maintaining the presence of pavement and/or structures over the impacted soil. The AUL allows the continued use of the properties as parking and commercial spaces, and also as residential space as long as provisions are maintained to limit access to the impacted soil.

In summary, the subject site is included in the above mentioned RTN, however, groundwater does not appear to be impacted by the release as reported by Haley & Aldrich and CEA at the 29 Charles Street property.

Proposed Scope of Site Development

Following demolition of the existing site buildings, it is understood that the current scope of development will include the construction of an L-shaped, 6-story, mixed-use building within the south and east portions of the site and a rectangular-shaped, 4-story, residential building within the northwest portion of the site.

The mixed-used building is planned to have 2-levels of below-parking with a lowest level footprint of about 31,400 square feet. It is understood that the proposed finished floor elevations have not been finalized; however, based on the available information it is understood that parking level 2, parking level 1, and the ground floor will have slabs at about Elevation -4.5, Elevation +5.5 and Elevation +20.5, respectively.

The proposed residential building is planned to have a ground-level footprint of about 5,200 square feet and is not planned to include below-grade areas. It is understood that the ground-level slab will be approximately coincident with the existing site grades at about Elevation +20.5.



Outside of the proposed structures, it is understood that site improvements will generally consist of paved surface parking, walkways, and a landscaped park area

Temporary construction dewatering is anticipated to be required to facilitate excavation to the basement subgrade, which will extend about 26 to 27 feet below the existing ground surface at the site.

Construction Site Dewatering

Groundwater was observed within the completed boreholes at depths ranging from about 8 to 10 feet below the existing ground surface or from Elevation +12.5 to Elevation +10.5. Stabilized groundwater levels observed in the groundwater observation wells installed at the site ranged from 8.1 to 10.2 feet below the existing ground surface or from Elevation +12.4 to Elevation +10.8. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns. Groundwater monitoring reports documenting levels observed within the groundwater observation wells at the site are included in **Appendix C**.

In order to facilitate construction of the basement level, to provide support of the excavation, and to provide an effective groundwater cut-off during construction (to mitigate the volume of construction dewatering effluent), a sheet pile cofferdam will be installed around the perimeter of the basement foundation wall. Thus, construction dewatering will be generally required within the footprint of the cofferdam to facilitate construction of the proposed basement level of the building, but may also be required within other areas of the site during and following precipitation events.

It is anticipated that rate of construction dewatering during excavation of the fill and organic soils will initially be on the order about 150 gallons per minute (gpm). However, once the excavation has been dewatered to the proposed subgrade elevation it is anticipated that rate of construction dewatering will decrease to approximately 25 to 50 gallons per minute as a result of the groundwater cut-off. These estimates do not include surface run-off which will be removed from the excavation during and following precipitation events.

Given that the area of the foundation occupies a majority of the subject site, temporary on-site collection and recharge of groundwater is not feasible. As a result, construction dewatering will require the discharge of collected groundwater into the storm drain system.

A review of storm water and sewer plans available on the City of Cambridge Sewer and Storm water database indicates a catch basin adjacent to the site that flows to a dedicated storm drain located beneath First Street. The storm drain flows north beneath First Street to Thorndike Street where it turns east and discharges into the Lechmere Canal which flows into the Charles River at outfall D02OF0000. The location of the catch basin in relation to



the subject site is indicated on **Figure 2**. The flow path of the discharge is shown on **Figure 3**.

Site Environmental Setting, Nearby DEP-listed Disposal Sites, Endangered Species and Surrounding Historical Places

Based on an on-line edition of the Massachusetts Geographic Information Systems MassDEP Phase I Site Assessment Map (GIS Map) viewed on March 18, 2018, 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 500 feet of the subject site.

The GIS Map indicates that there are no water bodies or wetland areas at the subject site. The nearest water body is the Charles River is located approximately 0.2 miles to the east of the subject site. No areas designated as solid waste sites (landfills) are noted as being located within 1,000 feet of the site. According to the City of Cambridge municipal GIS database, the Bent Street Open Space, which is located approximately 175 feet to the west of the subject site, is a designated protected open space. A copy of the GIS Map is included in **Appendix C**. In addition, a report prepared by Environmental Database Resource, Inc. (EDR) was reviewed for this study. Based on EDR's search of FEMA Flood Plain Maps, the subject site is not located within a 100 year or 500 year flood plain.

As indicated above, this site is a release site and based on the results of analytical testing of groundwater, the subject site is not considered to have been impacted by the chemical contaminants found in soil or the phenanthrene observed in groundwater at the adjacent parcel. In 2004, a Class B-2 RAO was submitted for this RTN because a Condition of No Significant Risk exists at the parcel, which is contingent upon maintaining an Activity and Use Limitation (AUL).

A review of information provided in an Information for Planning and Conservation Trust Resource Report (IPaC Report) prepared by the U.S. Fish and Wildlife Service for the subject site did not identify the presence of endangered species at or in the vicinity of the discharge location and/or discharge outfall. Further, the IPaC Report did not identify the presence of a critical habitat in the vicinity of the discharge location and/or discharge outfall. Based upon the above, the site is considered a Criterion A pursuant to Appendix IV of the RGP. A copy of the IPaC Report is included in **Appendix C**.

A review of the most recent National Register of Historical Places for Suffolk County in Boston, Massachusetts did not identify records or addresses of historic places that exist in the immediate vicinity of the subject site and/or outfall location.



Summary of Groundwater Analysis

In April 2019, one (1) groundwater samples was obtained from monitoring wells M-2(OW). It is noted the data presented in this application is a representation of the subject site which has remained undeveloped in recent history. The samples were submitted for chemical testing for the presence of Section A Inorganics as detailed in the NPDES RGP which include; total residual chlorine (TRC), hexavalent chromium, total cyanide, ammonia, pH, hardness, total suspended solids (TSS), and total metals (antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc). Results indicated the presence of chloride and iron concentration which did trigger Water Quality-Based Effluent Limitations (WQBELs). It is noted that the concentrations of chloride and iron did not exceed applicable MCP reporting thresholds. A summary of the chemical test results is provided in **Table 1** and chemical test data is included in **Appendix D**.

In conjunction with the updated 2017 NPDES RGP, a sample of water from the Charles River was obtained and analyzed for recoverable metals, ammonia, pH, and hardness summarized in **Table 2** and chemical test data is included in **Appendix E**.

It is noted that in December 2017, two (2) groundwater samples were obtained from monitoring wells B-3 (OW) and M-2 (OW) in anticipation of applying for temporary construction dewatering under the EPA's RGP. The data was not used in the NOI or in the determination of Technology-Based Effluent Limitations (TBELs) or WQBELs due the age of the data. A summary of the chemical test results is provided in **Table 3** and chemical test data is included in **Appendix F**.

Groundwater Treatment

The results of the groundwater completed indicate the presence of metals and chloride which require treatment prior to leaving the site. In summary, results indicated the presence of elevated levels of chloride and copper which were used in Appendix V of the 2017 RGP, to determine if WQBELs for specific inorganics apply. The Appendix V calculations indicate TBELs apply for all Inorganics except Iron and TRC. However, it is noted that the WQBEL for TRC is not applicable because groundwater at the subject site has not, nor will be treated with chlorine in accordance with the redevelop or previous environmental activities. A copy of the TBEL and WQBEL calculations is attached in **Appendix C**.

Based on the results of the above referenced groundwater analyses, it is our opinion that a 10,000-gallon capacity settling tank and bag filter in series will be required to settle and filter out suspended particulates that may contain inorganic metals in the discharge during construction dewatering to meet applicable effluent limits established by the US EPA prior to off-site discharge. A schematic of the treatment system is shown on **Figure 4**.



US EPA
First Street PUD - Parcels B&C
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Summary and Conclusions

The purpose of this report is to assess site environmental conditions and groundwater data to support a Notice of Intent to temporarily discharge under the Massachusetts Remediation General Permit during construction dewatering activities which will be encountered during the proposed development of 107 First Street, 21 Charles Street, 18 Hurley Street, and 29 Charles Street/22 Hurley Street properties (Parcels B & C) located in Cambridge, Massachusetts.

Based on the results of the above referenced groundwater analyses, treatment of construction dewatering will be necessary to meet allowable TBELS for inorganics established by the US EPA prior to off-site discharge. The proposed construction dewatering effluent treatment system will consist of one settling tank (10,000-gallons in capacity) and bag filter in series to remove sediment containing concentrations of metals. However, should the effluent monitoring results indicate levels in excess of the applicable TBELS and/or WQBEL established in the Massachusetts 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.

Very truly yours,

McPHAIL ASSOCIATES, LLC

A blue ink signature of Kirk W. Seaman, consisting of a stylized, cursive script.

Kirk W. Seaman

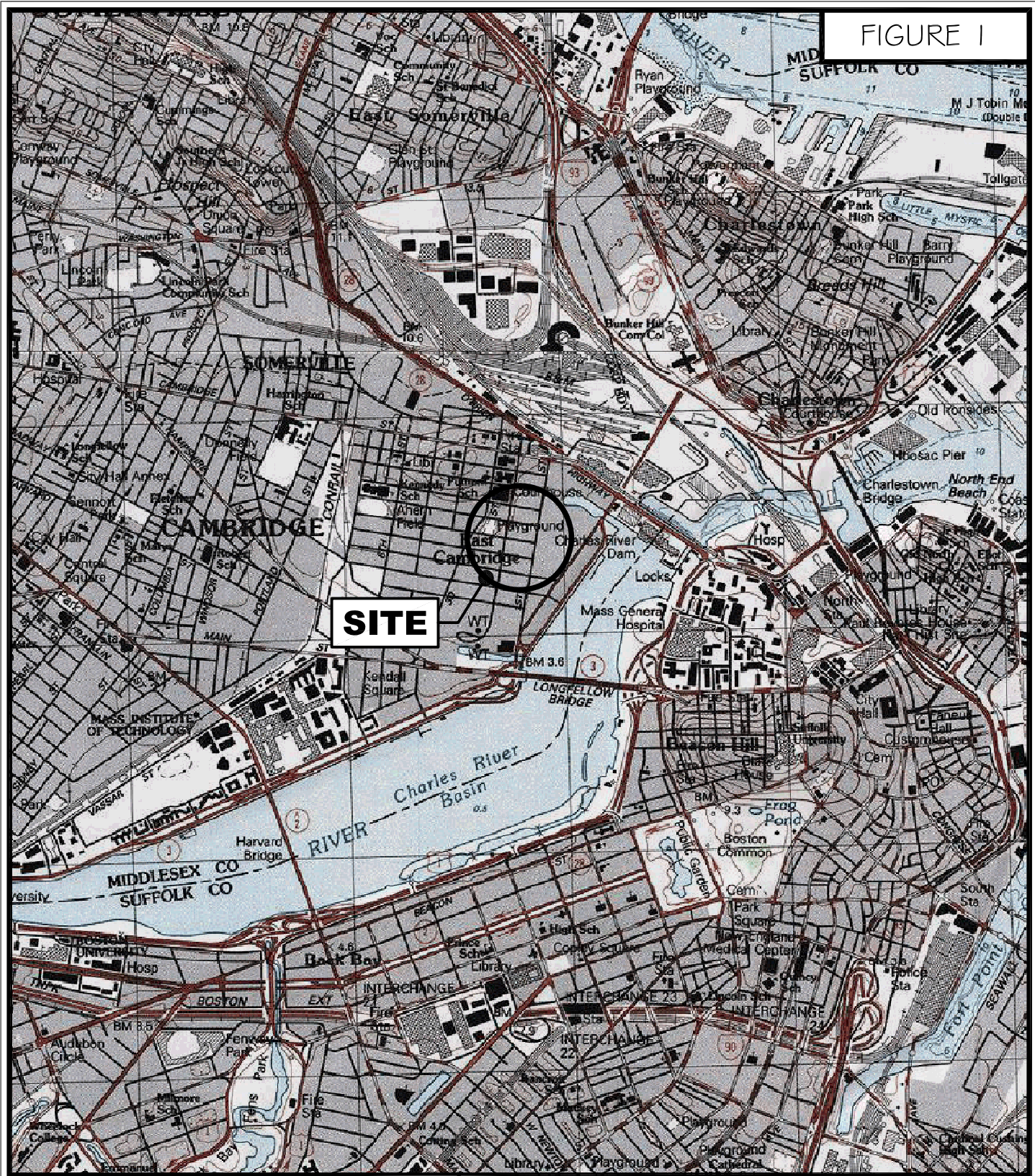
A blue ink signature of William J. Burns, L.S.P., consisting of a stylized, cursive script.

William J. Burns, L.S.P.

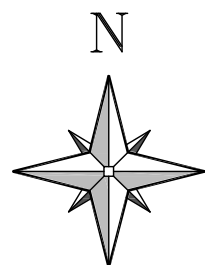
KWS/wjb

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FIGURE I



Geotechnical and
 Geoenvironmental Engineers
 2269 Massachusetts Avenue
 Cambridge, MA 02140
 617/868-1420
 617/868-1423 (Fax)
 www.mcphailgeo.com



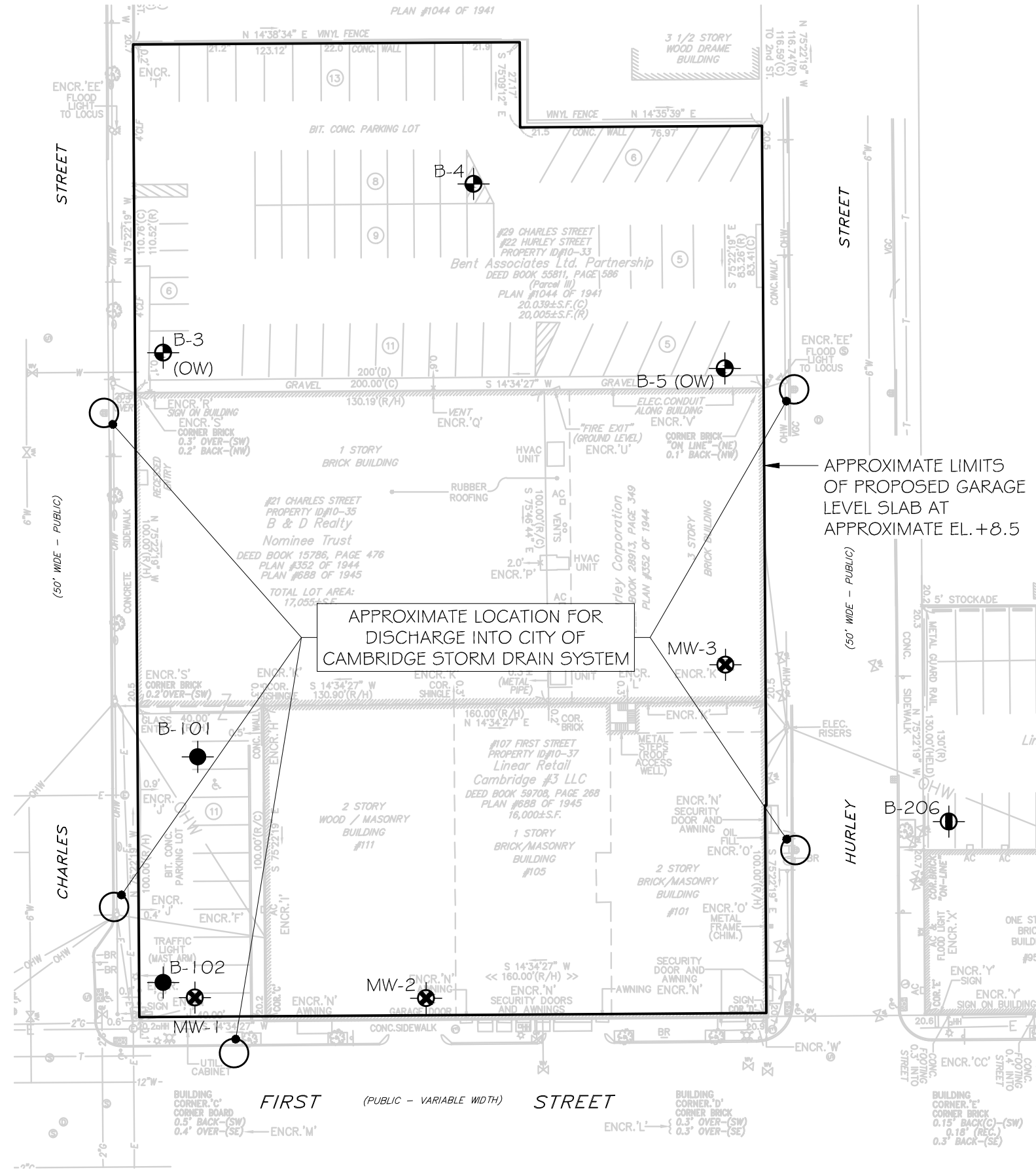
SCALE 1:25,000

PROJECT LOCATION PLAN

FIRST STREET P.U.D.

CAMBRIDGE

MASSACHUSETTS



LEGEND

- ⊗ — APPROXIMATE LOCATION OF MONITORING WELL INSTALLED BY TECHNICAL DRILLING SERVICES, INC. ON NOVEMBER 22, 2016 FOR McPHAIL ASSOCIATES, LLC
- ⊙ — APPROXIMATE LOCATION OF BOREHOLE PERFORMED BY TECHNICAL DRILLING SERVICES, INC. ON NOVEMBER 10 AND 11, 2015 FOR McPHAIL ASSOCIATES, LLC
- — APPROXIMATE LOCATION OF BOREHOLE PERFORMED BY GEOLOGIC EARTH EXPLORATION, INC. ON JUNE 30, 2015 FOR McPHAIL ASSOCIATES, LLC
- ⊕ — APPROXIMATE LOCATION OF BOREHOLE PERFORMED BY GEOLOGIC EARTH EXPLORATION, INC. DURING THE PERIOD OF NOVEMBER 24 THROUGH 26, 2014 FOR McPHAIL ASSOCIATES, LLC
- (OW) — INDICATES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

APPROXIMATE LIMITS OF PROPOSED GARAGE LEVEL SLAB AT APPROXIMATE EL. +8.5

APPROXIMATE LOCATION FOR DISCHARGE INTO CITY OF CAMBRIDGE STORM DRAIN SYSTEM

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED "ALTA / ACSM LAND TITLE SURVEY" DATED JULY 3, 2014 BY HANCOCK ASSOCIATES



FILE NAME: N:\Acad\JOB95863\MWRA 2019\5863-F02.dwg


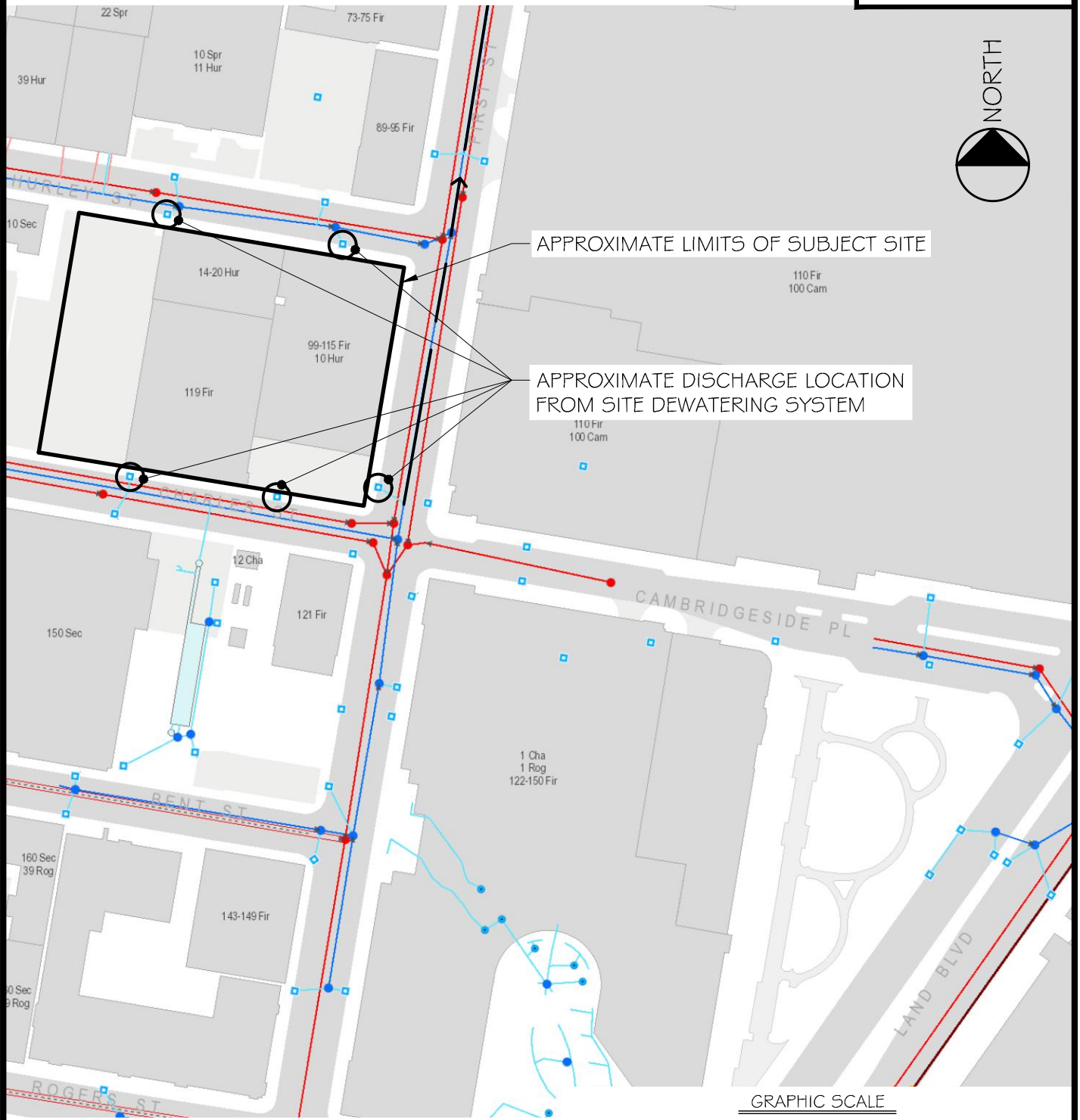
 <p>Geotechnical and Geoenvironmental Engineers 2269 Massachusetts Avenue Cambridge, MA 02140 617/868-1420 617/868-1423 (Fax) www.mcphailgeo.com</p>	FIRST STREET P.U.D. PARCELS B AND C	
	CAMBRIDGE MASSACHUSETTS	
	SITE PLAN	
	FOR URBAN SPACES, LLC BY McPHAIL ASSOCIATES, LLC	
Date: MARCH 2019	Dwn: F.G.P.	Chkd: K.W.S.
Project No: 5863	Scale: 1" = 40'	

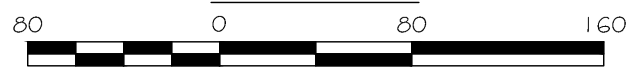
FIGURE 3A



APPROXIMATE LIMITS OF SUBJECT SITE

APPROXIMATE DISCHARGE LOCATION FROM SITE DEWATERING SYSTEM

GRAPHIC SCALE



LEGEND

↗ — INDICATES DIRECTION OF FLOW

REFERENCE: THIS PLAN WAS PREPARED FROM A 96'-SCALE DRAWING ENTITLED, "CITY OF CAMBRIDGE" PRINTED ON NOVEMBER 7, 2016 BY THE CITY OF CAMBRIDGE



Geotechnical and Geoenvironmental Engineers
 2269 Massachusetts Avenue
 Cambridge, MA 02140
 617/868-1420
 617/868-1423 (Fax)
 www.mcphailgeo.com

FIRST STREET P.U.D. PARCELS B AND C
 CAMBRIDGE MASSACHUSETTS

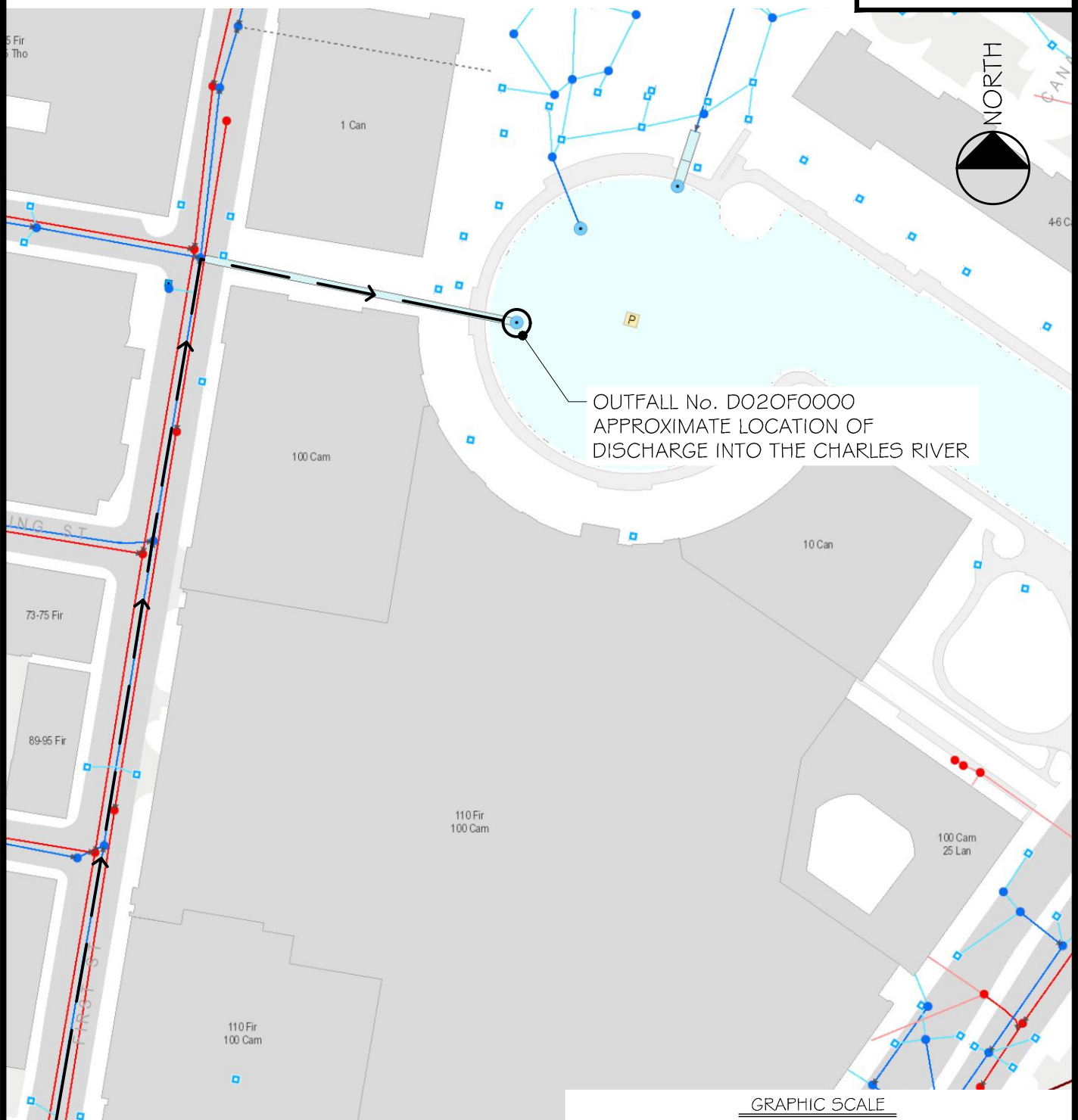
DISCHARGE LOCATION PLAN

FOR
 URBAN SPACES, LLC
 BY
 McPHAIL ASSOCIATES, LLC

Date: APRIL 2019	Dwn: F.G.P.	Chkd: K.W.S.	Scale: 1" = 80'
Project No: 5863			

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FIGURE 3B



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LEGEND

↗ — INDICATES
DIRECTION OF FLOW

REFERENCE: THIS PLAN WAS
PREPARED FROM A 96-SCALE
DRAWING ENTITLED, "CITY OF
CAMBRIDGE" PRINTED ON
NOVEMBER 7, 2016 BY THE
CITY OF CAMBRIDGE

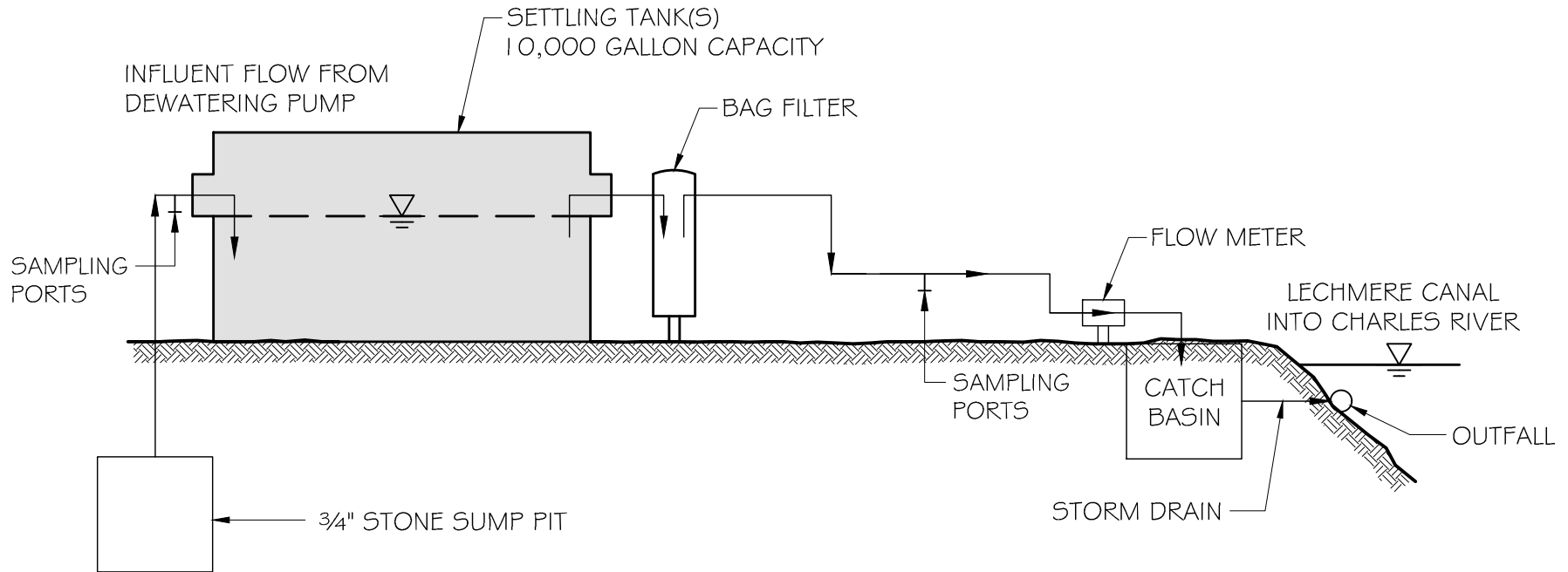



Geotechnical and
Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)
www.mcphailgeo.com



FIRST STREET P.U.D. PARCELS B AND C			
CAMBRIDGE		MASSACHUSETTS	
DISCHARGE LOCATION PLAN			
FOR			
URBAN SPACES, LLC			
BY			
McPHAIL ASSOCIATES, LLC			
Date:	MARCH 2019	Dwn:	F.G.P.
Chkd:	K.W.S.	Scale:	1" = 80'
Project No:	5863		

FIGURE 4



 <p>McPHAIL ASSOCIATES, LLC Geotechnical and Geoenvironmental Engineers 2269 Massachusetts Avenue Cambridge, MA 02140 617/868-1420 617/868-1423 (Fax) www.mcphailgeo.com</p>	FIRST STREET P.U.D. PARCELS B AND C	
	CAMBRIDGE	MASSACHUSETTS
	SCHEMATIC OF TREATMENT SYSTEM	
	FOR URBAN SPACES, LLC BY McPHAIL ASSOCIATES, LLC	
Date: MARCH 2019	Dwn: F.G.P.	Chkd: K.W.S.
Project No: 5863	Scale: N.T.S.	

**Table 1
Groundwater Analytical Results**

First Street PUD - Parcel B and C; Cambridge, MA
McPhail Job No. 5863

LOCATION		MW-2
SAMPLING DATE		4/4/2019
LAB SAMPLE ID		L1913673-02
	EPA-ALFCMC	
General Chemistry (ug/l)		
pH (SU)		7
Chromium, Trivalent	570	ND(10)
Solids, Total Suspended		ND(5000)
Cyanide, Total	22	ND(5)
Chlorine, Total Residual		ND(20)
Nitrogen, Ammonia		5790
Chromium, Hexavalent	16	ND(10)
Anions by Ion Chromatography (ug/l)		
Chloride	860000	556000
Total Hardness (ug/l)		
Hardness		529000
Total Metals (ug/l)		
Antimony, Total		ND(4)
Arsenic, Total	340	ND(1)
Cadmium, Total	2	ND(0.2)
Chromium, Total		ND(1)
Copper, Total		ND(1)
Iron, Total		4440
Lead, Total	65	ND(1)
Mercury, Total	1.4	ND(0.2)
Nickel, Total	470	ND(2)
Selenium, Total		ND(5)
Silver, Total	3.2	ND(0.4)
Zinc, Total	120	ND(10)

EPA-ALFCMC - National Recommended Water
Quality Criteria - Freshwater Aquatic CMC (acute)
(#) - Laboratory detection limit
ND - Not detected above lab reporting limits

Table 2 - Surface Water Analytical Results

First Street PUD - Parcel B and C; Cambridge, MA
McPhail Job No. 5863

LOCATION		Lechmere Canal
SAMPLING DATE		12/27/2017
LAB SAMPLE ID		L1747719-01
SAMPLE TYPE		Surface Water
	EPA-ALFCMC	
General Chemistry (ug/l)		
Chromium, Trivalent	570	ND(10)
Solids, Total Suspended		ND(5000)
pH (SU)		7.1
Nitrogen, Ammonia		126
Chromium, Hexavalent	16	ND(10)
Total Hardness (ug/l)		
Hardness		118000
Total Metals (ug/l)		
Arsenic, Total	340	ND(1)
Chromium, Total		ND(1)
Copper, Total		2.44
Iron, Total		460
Lead, Total	65	1.34
Nickel, Total	470	ND(2)
Zinc, Total	120	12.34

ND - Not detected in excess of the detection limit

(#) - Detection Limit

EPA-ALFCMC - National Recommended Water
Quality Criteria - Freshwater Aquatic CMC (acute)

McPhail Associates, LLC

**Table 3
Historical Groundwater Analytical Results**

First Street PUD - Parcel B and C; Cambridge, MA
McPhail Job No. 5863

LOCATION		B-3(OW)	MW-2 (OW)
SAMPLING DATE		12/7/2017	12/7/2017
LAB SAMPLE ID		L1745109-01	L1745109-02
	EPA-ALFCMC		
General Chemistry (ug/l)			
pH (SU)		6.7	6.9
Chromium, Trivalent	570	ND(10)	ND(10)
Solids, Total Suspended		6400	ND(5000)
Cyanide, Total	22	ND(5)	ND(5)
Chlorine, Total Residual		ND(20)	ND(20)
Nitrogen, Ammonia		8380	12400
Chromium, Hexavalent	16	ND(10)	ND(10)
Anions by Ion Chromatography (ug/l)			
Chloride	860000	1150000	2370000
Total Hardness (ug/l)			
Hardness		448000	508000
Total Metals (ug/l)			
Antimony, Total		ND(4)	ND(4)
Arsenic, Total	340	1.72	ND(1)
Cadmium, Total	2	ND(0.2)	ND(0.2)
Chromium, Total		2.4	6
Copper, Total		26.92	7.43
Iron, Total		2960	116
Lead, Total	65	5	2.73
Mercury, Total	1.4	ND(0.2)	ND(0.2)
Nickel, Total	470	ND(2)	3.34
Selenium, Total		ND(5)	ND(5)
Silver, Total	3.2	ND(0.4)	ND(0.4)
Zinc, Total	120	31.2	59.56

EPA-ALFCMC - National Recommended Water
Quality Criteria - Freshwater Aquatic CMC (acute)
(#) - Laboratory detection limit
ND - Not detected above lab reporting limits

McPhail Associates, LLC



**APPENDIX A:
LIMITATIONS**



LIMITATIONS

The purpose of this report is to present a summary of environmental conditions, including the results of testing of groundwater samples obtained from groundwater monitoring wells on the property located at 107 First Street of Cambridge, Massachusetts in support of an application for approval of temporary construction dewatering discharge of groundwater 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 analytical 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 the course of this assessment, as described in the text. However, it should be noted that additional constituents not searched for during the current study may be present in soil and/or groundwater at the site.

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



APPENDIX B:

**NOTICE OF INTENT TRANSMITTAL FORM
CITY OF CAMBRIDGE PERMIT TO DEWATER**

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

A. General site information:

1. Name of site: First Street Planned Urban Development - Parcel B&C	Site address: 107 First Street, 21 Charles Street, 18 Hurley Street, and 29 Charles Street/22 Hurley Street		
	City: CAMBRIDGE	State: MA	Zip: 02142
2. Site owner Urban Space LLC for US Parcel B, LP and US Parcel C, LLC Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input checked="" type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify:	Contact Person: Jeff Hirsch		
	Telephone: (617) 868 5558	Email: jhirsch@urbanspacesllc.com	
	Mailing address: 111 First Street Street:		
	City: CAMBRIDGE	State: MA	Zip: 02141
3. Site operator, if different than owner Tocci Building Companies/ First & Hurley Builders LLC	Contact Person: Bill Sturgis		
	Telephone: 781-844-2452	Email: bsturgis@tocci.com	
	Mailing address: Street: 660 Main Street		
	City: Woburn	State: MA	Zip: 01801
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <input checked="" type="checkbox"/> MA Chapter 21e; list RTN(s): RTN 3-23447 <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404		

B. Receiving water information:

1. Name of receiving water(s): CHARLES RIVER	Waterbody identification of receiving water(s): MA72-38	Classification of receiving water(s): CLASS B
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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. Water Code: 7239050 Class: B Category: 5 TMDL Count: 1 TMDL - 301.0		
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.		n/a
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 7Q10 and dilution factor indicated? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received: January 30, 2018		
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): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

1. Source water(s) is (check any that apply):			
<input checked="" type="checkbox"/> Contaminated groundwater	<input type="checkbox"/> Contaminated surface water	<input type="checkbox"/> The receiving water	<input type="checkbox"/> Potable water; if so, indicate municipality or origin:
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): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	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): <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> A surface water other than the receiving water; if so, indicate waterbody:	<input type="checkbox"/> Other; if so, specify:

2. Source water contaminants: Inorganics	
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): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No <p style="text-align: center;">N / A</p>
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

D. Discharge information

1. The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input checked="" type="checkbox"/> New discharge <input type="checkbox"/> New source	
Outfall(s): City of Cambridge - D04OF0000	Outfall location(s): (Latitude, Longitude) Latitude: 42.369133 Longitude: -71.076219
Discharges enter the receiving water(s) via (check any that apply): <input type="checkbox"/> Direct discharge to the receiving water <input checked="" type="checkbox"/> Indirect discharge, if so, specify: <input type="checkbox"/> A private storm sewer system <input checked="" type="checkbox"/> 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): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No, if so, explain, with an estimated timeframe for obtaining permission: Upon approval of NPDES RGP Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No	
Provide the expected start and end dates of discharge(s) (month/year): 04/2019 - 03/2020	
Indicate if the discharge is expected to occur over a duration of: <input checked="" type="checkbox"/> less than 12 months <input type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)	
<input type="checkbox"/> I – Petroleum-Related Site Remediation <input type="checkbox"/> II – Non-Petroleum-Related Site Remediation <input checked="" type="checkbox"/> III – Contaminated Site Dewatering <input type="checkbox"/> IV – Dewatering of Pipelines and Tanks <input type="checkbox"/> V – Aquifer Pump Testing <input type="checkbox"/> VI – Well Development/Rehabilitation <input type="checkbox"/> VII – Collection Structure Dewatering/Remediation <input type="checkbox"/> VIII – Dredge-Related Dewatering	<p>a. If Activity Category I or II: (check all that apply)</p> <input type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters	
	<p>b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</p>	
	<input checked="" type="checkbox"/> G. Sites with Known Contamination	<input type="checkbox"/> H. Sites with Unknown Contamination
	<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <input checked="" type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>

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	121.4500	75	5790	5790	Report mg/L	---
Chloride		✓	1	44.300	12500	556000	556000	Report µg/l	---
Total Residual Chlorine	✓		1	121.4500	20	<DL	<DI.	0.2 mg/L	
Total Suspended Solids		✓	1	121.2540C	5.000	<DL	<DI.	30 mg/L	
Antimony	✓		1	3200.8	4	<DI.	<DI.	206 µg/L	
Arsenic	✓		1	3200.8	0.5	<DI.	<DI.	104 µg/L	
Cadmium	✓		1	3200.8	0.2	<DL	<DI.	10.2 µg/L	
Chromium III	✓		1	3200.8	10	<DL	<DI.	323 µg/L	
Chromium VI	✓		1	3200.8	10	<DI.	<DI.	323 µg/L	
Copper	✓		1	3200.8	1	<DI.	<DI.	242 µg/L	
Iron		✓	1	19,200.70	50	4440	4440	5,000 µg/L	1000
Lead	✓		1	3200.8	0.5	<DI.	<DI.	160 µg/L	
Mercury	✓		1	3,245.10	0.2	<DI.	<DI.	0.739 µg/L	
Nickel	✓		1	3200.8	2	<DL	<DI.	1,450 µg/L	
Selenium	✓		1	3200.8	5	<DI.	<DI.	235.8 µg/L	
Silver	✓		1	3200.8	0.4	<DL	<DI.	35.1 µg/L	
Zinc	✓		1	3200.8	10	<DI.	<DL	420 µg/L	
Cyanide	✓		1	30.4500C	5	<DI.	<DI.	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		0					100 µg/L	---
Benzene	✓		0					5.0 µg/L	---
1,4 Dioxane	✓		0					200 µg/L	---
Acetone	✓		0					7.97 mg/L	---
Phenol	✓		0					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					4.4 µg/L	
1,2 Dichlorobenzene	✓		0					600 µg/L	---
1,3 Dichlorobenzene	✓		0					320 µg/L	---
1,4 Dichlorobenzene	✓		0					5.0 µg/L	---
Total dichlorobenzene	✓		0					763 µg/L in NH	---
1,1 Dichloroethane	✓		0					70 µg/L	---
1,2 Dichloroethane	✓		0					5.0 µg/L	---
1,1 Dichloroethylene	✓		0					3.2 µg/L	---
Ethylene Dibromide	✓		0					0.05 µg/L	---
Methylene Chloride	✓		0					4.6 µg/L	---
1,1,1 Trichloroethane	✓		0					200 µg/L	---
1,1,2 Trichloroethane	✓		0					5.0 µg/L	---
Trichloroethylene	✓		0					5.0 µg/L	---
Tetrachloroethylene	✓		0					5.0 µg/L	
cis-1,2 Dichloroethylene	✓		0					70 µg/L	---
Vinyl Chloride	✓		0					2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		0					190 µg/L	
Diethylhexyl phthalate	✓		0					101 µg/L	
Total Group I PAHs	✓		0					1.0 µg/L	---
Benzo(a)anthracene	✓		0					As Total PAHs	
Benzo(a)pyrene	✓		0						
Benzo(b)fluoranthene	✓		0						
Benzo(k)fluoranthene	✓		0						
Chrysene	✓		0						
Dibenzo(a,h)anthracene	✓		0						
Indeno(1,2,3-cd)pyrene	✓		0						

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p><input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption <input type="checkbox"/> Ion Exchange <input type="checkbox"/> Precipitation/Coagulation/Flocculation <input checked="" type="checkbox"/> Separation/Filtration <input type="checkbox"/> Other; if so, specify:</p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge. Refer to attached report.</p> <p>Identify each major treatment component (check any that apply):</p> <p><input checked="" type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input checked="" type="checkbox"/> Media filter <input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input checked="" type="checkbox"/> Bag filter <input type="checkbox"/> Other; if so, specify:</p> <p>Indicate if either of the following will occur (check any that apply):</p> <p><input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination</p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Is use of a flow meter feasible? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	150
<p>Provide the proposed maximum effluent flow in gpm.</p>	150
<p>Provide the average effluent flow in gpm.</p>	25
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	N/A
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

- FWS Criterion A:** No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the “action area”.
- FWS Criterion B:** Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are “not likely to adversely affect” listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): Yes No; if no, is consultation underway? (check one): Yes No
- FWS Criterion C:** Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have “no effect” on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) the operator EPA Other; if so, specify:

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): Yes No
Proposed activities to have the potential to affect historic properties. 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 system(s) will consist of temporary structures.

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.

Refer to attached Report and supporting documentation.

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.

A BMPP meeting the requirements of this general permit will be developed and implemented prior to
BMPP certification statement: **the initiation of discharge.**

Notification provided to the appropriate State, including a copy of this NOI, if required. Check one: Yes No N/A

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested. Check one: Yes No

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested. Check one: Yes No NA

Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission. Upon Approval of this NOI
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 Yes No NA
 Other; if so, specify:

Signature: *Bill Sturgis, First & Hurley Builders, LLC*

Date: *3/27/19*

Print Name and Title: *Bill Sturgis, Project Executive*



PERMIT TO DEWATER

Location: 107 First Street

Owner: Urban Spaces LLC, US Parcel B, LP, & US Parcel C, LLC

Contractor: Tocci Building Companies / First & Hurley Builders, LLC

Temporary

Permanent

The property owner, Urban Spaces LLC, US Parcel B, LP, & US Parcel C, LLC agrees to hold harmless and indemnify the City of Cambridge for any liability on the part of the City directly or indirectly arising out of the dewatering operation.

The issuance of this permit is based in part in the submission packet of the applicant with documentation as follows:

EPA RGP NOI + Supporting Material

In addition, the application has been reviewed by the City under third party agreement as documented in the following reports:

All activities conducted in conjunction with the issuance of this permit must be in accordance with the provisions of the aforementioned reports. Any deviations in conditions must be reported to and approved by the Commissioner of Public Works.

This permit is in addition to any other street permit issued by the Department in connection with any street excavation or obstruction; and all conditions as specified in the Discharge Permit for Dewatering.

For the entire period of time the groundwater is being discharged to a storm drain, the property owner shall provide copies of each Discharge Monitoring Report Form submitted to the EPA, pursuant to the owner's discharge permit.

If in the future the EPA requires the City of Cambridge to bring existing stormwater drainage into compliance with EPA quality standards, as a condition to the continuation of discharge of that stormwater (also including groundwater) into an EPA regulated system into which the

Urban Spaces LLC, US Parcel B, LP, & US Parcel C, LLC (property owner) drains, the owner will agree to maintain its water discharge with such EPA water quality standards.

The property owner and contractor shall at all times meet the conditions specified in the requisite legal agreement/affidavits.

All groundwater pumped from the work shall be disposed of without damage to pavements, other surfaces or property.

Where material or debris has washed or flowed into or has been placed in existing gutters, drains, pipes or structures, such material or debris shall be entirely removed and satisfactorily disposed of by the

Contractor during the progress of work as directed by the Public Works Department.

Any flooding or damage of property and possessions caused by siltation of existing gutters, pipes or structures shall be the responsibility of the Contractor.

Provisions shall be made to insure that no material, water or solid, will freeze on any pavement or in any location which will cause inconvenience or hazard to the general public.

Upon completion of the work, existing gutters, drains, pipes and structures shall be (bucket) cleaned and material disposed of satisfactorily prior to release by the Public Works Department.

Any permit issued by the City of Cambridge shall be revoked upon transfer of any ownership interest unless and until subsequent owner(s) or parties of interest agree to the foregoing terms.

This permit shall remain in effect for one year and shall be renewable thereafter at the agreement of the parties.

The following special conditions as set forth below are part of the permit.

n/a

City Manager

Property Manager: Corporate Entity
President, General Partner or Trustee
Trustee with Instrument of Authority

Date

Date

City Solicitor

Contractor

Date

Date

Commissioner of Public

First $\frac{1}{2}$ Hurley, Builders, LLC
Contractor

Date

3/27/19
Date

CC: Engineering
Supervisor of Sewer Maintenance and Engineering
Superintendent of Streets
Commissioner of Inspectional Services

Ben Stinger
Project Executive



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:

107 FIRST STREET CAMBRIDGE, MA

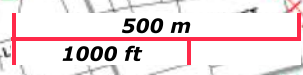
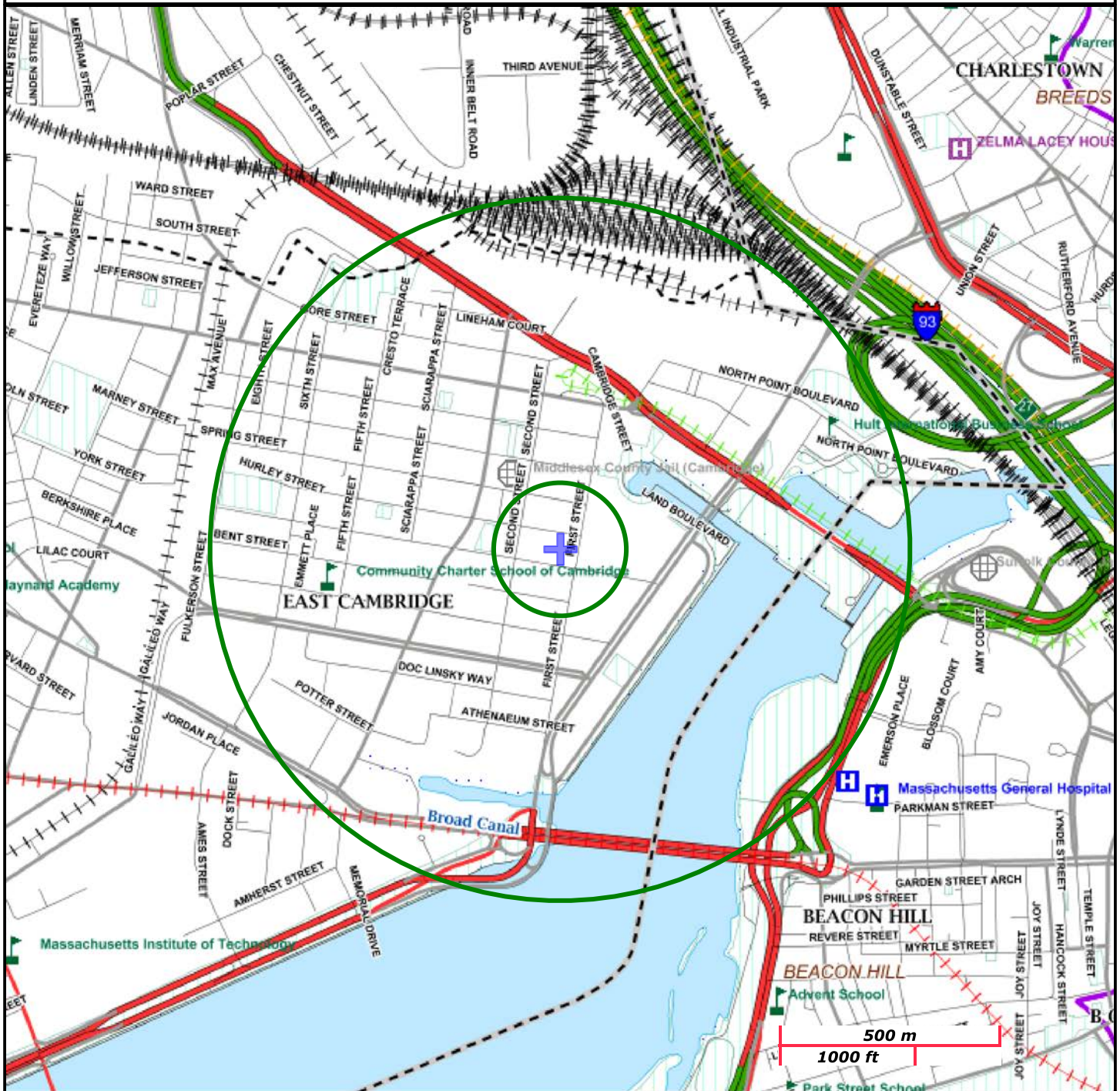
NAD83 UTM Meters:
4692688mN , 328886mE (Zone: 19)
January 16, 2018

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/mqis/>.



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail	PWS Protection Areas: Zone II, IWPA, Zone A		
Boundaries: Town, County, DEP Region; Train, Powerline; Pipeline; Aqueduct	Hydrography: Open Water, PWS Reservoir, Tidal Flat		
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam	Wetlands: Freshwater, Saltwater, Cranberry Bog		
Aquifers: Medium Yield, High Yield, EPA Sole Source	FEMA 100yr Floodplain; Protected Open Space; ACEC		
Non Potential Drinking Water Source Area: Medium, High (Yield)	Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential		
	Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.		



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:

January 16, 2018

Consultation Code: 05E1NE00-2018-SLI-0661

Event Code: 05E1NE00-2018-E-01538

Project Name: First Street P.U.D Parcels B and C

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-0661

Event Code: 05E1NE00-2018-E-01538

Project Name: First Street P.U.D Parcels B and C

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/42.367638654581256N71.07828841774094W>



Counties: Middlesex, 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. 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.

Critical habitats

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

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Cambridge; Street No: 107; Street Name: First St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
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Kirk W. Seaman

From: Vakalopoulos, Catherine (DEP) <Catherine.Vakalopoulos@MassMail.State.MA.US>
Sent: Wednesday, January 10, 2018 3:51 PM
To: Kirk W. Seaman
Subject: RE: 7Q10 Issue

Hi Kirk,

Ok, as discussed, you are all set with your question below. I checked what I said to another RGP applicant with a discharge to Lechmere Canal and it matched what we discussed on the phone – no dilution if discharging in Lechmere Canal. A dilution factor could be calculated if the discharge was directly to the Charles River.

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026

 Please consider the environment before printing this e-mail

From: Kirk W. Seaman [mailto:KSeaman@mcphailgeo.com]
Sent: Wednesday, January 10, 2018 3:08 PM
To: Vakalopoulos, Catherine (DEP)
Subject: 7Q10 Issue

Hi Cathy,

Just left you a message.

Thanks for the update and don't worry about the mix up. I am guilty of that mistake as well.

I do have another questions for you regarding 7Q10 values for two other sites. The issue I am having is StreamStats will not spit out at 7Q10 because, as Peter Steeves of the USGS puts it, "this is a rare exception for a delineated location in Massachusetts. The underlying vector stream is not there, so one of the key significant variables "DRIFTPERSTR" (or Stratified Drift per unit stream length) is not computing. We have no way currently of computing the 7Q10 for this site. Its simply too small and unusual."

I am not sure if you have run into this situation yet and if you have how you applied a dilution factor without a 7Q10.

Feel free to give me a call to discuss.

Thanks

Kirk W. Seaman

McPHAIL ASSOCIATES, LLC

2269 Massachusetts Avenue
Cambridge, MA 02140

Tel: 617-349-7352
Cell: 626-590-8418



APPENDIX D:

LABORATORY ANALYTICAL DATA - GROUNDWATER



ANALYTICAL REPORT

Lab Number:	L1913673
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FIRST STREET PUD PARCELS B&C
Project Number:	5863.9.08
Report Date:	04/10/19

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

Certifications & Approvals: MA (M-MA086), 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: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1913673-01	MW-2	WATER	CAMBRIDGE, MA	04/04/19 14:30	04/04/19

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

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. 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 Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data 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.

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 Alpha Project Manager 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 Project Management at 800-624-9220 with any questions.

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08


Lab Number: L1913673
Report Date: 04/10/19

Case Narrative (continued)

Chlorine, Total Residual

The WG1223296-4 MS recovery (0%), performed on L1913673-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

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

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative

Date: 04/10/19

METALS

Project Name: FIRST STREET PUD PARCELS B&C**Lab Number:** L1913673**Project Number:** 5863.9.08**Report Date:** 04/10/19**SAMPLE RESULTS**

Lab ID: L1913673-01

Date Collected: 04/04/19 14:30

Client ID: MW-2

Date Received: 04/04/19

Sample Location: CAMBRIDGE, MA

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
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Iron, Total	4.44		mg/l	0.050	--	1	04/05/19 16:52	04/08/19 11:53	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	04/05/19 10:53	04/05/19 21:24	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	04/05/19 16:52	04/08/19 10:41	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	529		mg/l	0.660	NA	1	04/05/19 16:52	04/06/19 15:31	EPA 3005A	19,200.7	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		04/08/19 10:41	NA	107,-	



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

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: WG1223463-1									
Mercury, Total	ND	mg/l	0.0002	--	1	04/05/19 10:53	04/05/19 20:35	3,245.1	EA

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: WG1223622-1									
Iron, Total	ND	mg/l	0.050	--	1	04/05/19 16:52	04/08/19 11:21	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1223622-1									
Hardness	ND	mg/l	0.660	NA	1	04/05/19 16:52	04/06/19 15:08	19,200.7	LC

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: WG1223624-1									
Antimony, Total	ND	mg/l	0.00400	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Arsenic, Total	ND	mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Chromium, Total	ND	mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Copper, Total	ND	mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM



Project Name: FIRST STREET PUD PARCELS B&C

Lab Number: L1913673

Project Number: 5863.9.08

Report Date: 04/10/19

Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.00100	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Selenium, Total	ND	mg/l	0.00500	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Silver, Total	ND	mg/l	0.00040	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	04/05/19 16:52	04/08/19 10:16	3,200.8	AM

Prep Information

 Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Lab Number: L1913673

Project Number: 5863.9.08

Report Date: 04/10/19

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1223463-2								
Mercury, Total	112		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1223622-2								
Iron, Total	106		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1223622-2								
Hardness	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1223624-2								
Antimony, Total	92		-		85-115	-		
Arsenic, Total	103		-		85-115	-		
Cadmium, Total	106		-		85-115	-		
Chromium, Total	101		-		85-115	-		
Copper, Total	94		-		85-115	-		
Lead, Total	108		-		85-115	-		
Nickel, Total	101		-		85-115	-		
Selenium, Total	110		-		85-115	-		
Silver, Total	99		-		85-115	-		
Zinc, Total	104		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223463-3 QC Sample: L1912929-28 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0053	105		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223463-5 QC Sample: L1912929-37 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0052	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-3 QC Sample: L1912889-17 Client ID: MS Sample												
Iron, Total	0.849	1	1.93	108		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-3 QC Sample: L1912889-17 Client ID: MS Sample												
Hardness	693	66.2	777	127	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-7 QC Sample: L1913673-01 Client ID: MW-2												
Iron, Total	4.44	1	5.42	98		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-7 QC Sample: L1913673-01 Client ID: MW-2												
Hardness	529	66.2	604	113		-	-		75-125	-		20



Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223624-3 QC Sample: L1913673-01 Client ID: MW-2									
Antimony, Total	ND	0.5	0.6398	128	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1274	106	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.05421	106	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2017	101	-	-	70-130	-	20
Copper, Total	ND	0.25	0.2446	98	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5616	110	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5039	101	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1058	88	-	-	70-130	-	20
Silver, Total	ND	0.05	0.05081	102	-	-	70-130	-	20
Zinc, Total	ND	0.5	0.5104	102	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Project Number: 5863.9.08

Lab Number: L1913673

Report Date: 04/10/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223463-4 QC Sample: L1912929-28 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223463-6 QC Sample: L1912929-37 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-8 QC Sample: L1913673-01 Client ID: MW-2						
Hardness	529	522	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223622-8 QC Sample: L1913673-01 Client ID: MW-2						
Iron, Total	4.44	4.27	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1223624-4 QC Sample: L1913673-01 Client ID: MW-2						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

SAMPLE RESULTS

Lab ID: L1913673-01
Client ID: MW-2
Sample Location: CAMBRIDGE, MA

Date Collected: 04/04/19 14:30
Date Received: 04/04/19
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										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/05/19 11:30	121,2540D	DR
Cyanide, Total	ND		mg/l	0.005	--	1	04/05/19 10:35	04/05/19 13:27	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/05/19 02:58	121,4500CL-D	JW
pH (H)	7.0		SU	-	NA	1	-	04/05/19 06:08	121,4500H+-B	MA
Nitrogen, Ammonia	5.79		mg/l	0.075	--	1	04/05/19 03:00	04/08/19 21:40	121,4500NH3-BH	ML
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/05/19 02:30	04/05/19 02:59	1,7196A	MA
Anions by Ion Chromatography - Westborough Lab										
Chloride	556.		mg/l	12.5	--	25	-	04/09/19 07:08	44,300.0	JT



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

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: WG1223291-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/05/19 02:30	04/05/19 02:58	1,7196A	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1223296-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	04/05/19 02:58	121,4500CL-D	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1223301-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	04/05/19 03:00	04/08/19 21:23	121,4500NH3-BH	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1223436-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/05/19 11:30	121,2540D	DR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1223458-1										
Cyanide, Total	ND		mg/l	0.005	--	1	04/05/19 10:35	04/05/19 13:14	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1224535-1										
Chloride	ND		mg/l	0.500	--	1	-	04/09/19 06:44	44,300.0	JT

Lab Control Sample Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Project Number: 5863.9.08

Lab Number: L1913673

Report Date: 04/10/19

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1223291-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1223296-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1223301-2								
Nitrogen, Ammonia	99		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1223356-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1223458-2								
Cyanide, Total	93		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1224535-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

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: WG1223291-4 QC Sample: L1913673-01 Client ID: MW-2												
Chromium, Hexavalent	ND	0.1	0.096	96		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223296-4 QC Sample: L1913673-01 Client ID: MW-2												
Chlorine, Total Residual	ND	0.25	ND	0	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223301-4 QC Sample: L1913672-04 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.78	94		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223458-4 QC Sample: L1913569-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.175	88	Q	-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1224535-4 QC Sample: L1913446-01 Client ID: MS Sample												
Chloride	353	100	440	87	Q	-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Project Number: 5863.9.08

Lab Number: L1913673

Report Date: 04/10/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223291-3 QC Sample: L1913673-01 Client ID: MW-2						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223296-3 QC Sample: L1913673-01 Client ID: MW-2						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223301-3 QC Sample: L1913672-04 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223356-2 QC Sample: L1913673-01 Client ID: MW-2						
pH (H)	7.0	7.0	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223436-2 QC Sample: L1913449-01 Client ID: DUP Sample						
Solids, Total Suspended	180	180	mg/l	0		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1223458-3 QC Sample: L1913569-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1224535-3 QC Sample: L1914038-01 Client ID: DUP Sample						
Chloride	705	706	mg/l	0		18

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Serial_No:04101915:39
Lab Number: L1913673
Report Date: 04/10/19

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(*)
L1913673-01A	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1913673-01B	Plastic 250ml NaOH preserved	A	>12	>12	3.4	Y	Absent		TCN-4500(14)
L1913673-01C	Plastic 250ml H2SO4 preserved	A	<2	<2	3.4	Y	Absent		NH3-4500(28)
L1913673-01D	Plastic 250ml H2SO4 preserved	A	<2	<2	3.4	Y	Absent		NH3-4500(28)
L1913673-01E	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		-
L1913673-01F	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1913673-01G	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1913673-01H	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		TSS-2540(7)
L1913673-01X	Plastic 120ml HNO3 preserved Filtrates	A	N/A	N/A	3.4	Y	Absent		HOLD-METAL-DISSOLVED(180)

*Values in parentheses indicate holding time in days



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

GLOSSARY

Acronyms

DL	- 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 limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
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.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
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. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
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

Report Format: Data Usability Report



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

- 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.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

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 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.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- 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.

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1913673
Report Date: 04/10/19

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.
- 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 624/624.1: 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 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; 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, **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 300:** Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: 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 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, 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, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

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



APPENDIX E:

LABORATORY ANALYTICAL DATA – SURFACE WATER



ANALYTICAL REPORT

Lab Number:	L1747719
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FIRST ST. PUD PARCELS B+C
Project Number:	5863.9.08
Report Date:	01/03/18

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

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1747719-01	CR_122717	GROUNDWATER	CAMBRIDGE, MA	12/27/17 15:30	12/27/17

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

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: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

Case Narrative (continued)

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

Authorized Signature:  Cristin Walker

Title: Technical Director/Representative

Date: 01/03/18

METALS

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

SAMPLE RESULTS

Lab ID: L1747719-01
Client ID: CR_122717
Sample Location: CAMBRIDGE, MA
Matrix: Groundwater

Date Collected: 12/27/17 15:30
Date Received: 12/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	ND		mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Copper, Total	0.00244		mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Iron, Total	0.460		mg/l	0.050	--	1	01/02/18 08:20	01/03/18 09:07	EPA 3005A	19,200.7	AB
Lead, Total	0.00134		mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Zinc, Total	0.01234		mg/l	0.01000	--	1	01/02/18 08:20	01/02/18 17:22	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	118		mg/l	0.660	NA	1	01/02/18 08:20	01/03/18 09:07	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		01/02/18 17:22	NA	107,-	



Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

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: WG1077978-1									
Iron, Total	ND	mg/l	0.050	--	1	01/02/18 08:20	01/03/18 08:58	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 Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1077978-1									
Hardness	ND	mg/l	0.660	NA	1	01/02/18 08:20	01/03/18 08:58	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: WG1077980-1									
Arsenic, Total	ND	mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM
Chromium, Total	ND	mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM
Copper, Total	ND	mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM
Lead, Total	ND	mg/l	0.00100	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	01/02/18 08:20	01/02/18 16:23	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C

Project Number: 5863.9.08

Lab Number: L1747719

Report Date: 01/03/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1077978-2								
Iron, Total	106		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1077978-2								
Hardness	111		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1077980-2								
Arsenic, Total	110		-		85-115	-		
Chromium, Total	109		-		85-115	-		
Copper, Total	107		-		85-115	-		
Lead, Total	106		-		85-115	-		
Nickel, Total	106		-		85-115	-		
Zinc, Total	114		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077978-3 QC Sample: L1747719-01 Client ID: CR_122717												
Iron, Total	0.460	1	1.52	106	-	-	-	-	75-125	-	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077978-3 QC Sample: L1747719-01 Client ID: CR_122717												
Hardness	118	66.2	186	103	-	-	-	-	75-125	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077980-3 QC Sample: L1747719-01 Client ID: CR_122717												
Arsenic, Total	ND	0.12	0.1352	113	-	-	-	-	70-130	-	-	20
Chromium, Total	ND	0.2	0.2266	113	-	-	-	-	70-130	-	-	20
Copper, Total	0.00244	0.25	0.2789	110	-	-	-	-	70-130	-	-	20
Lead, Total	0.00134	0.51	0.5664	111	-	-	-	-	70-130	-	-	20
Nickel, Total	ND	0.5	0.5445	109	-	-	-	-	70-130	-	-	20
Zinc, Total	0.01234	0.5	0.5862	115	-	-	-	-	70-130	-	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C

Project Number: 5863.9.08

Lab Number: L1747719

Report Date: 01/03/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077978-4 QC Sample: L1747719-01 Client ID: CR_122717						
Iron, Total	0.460	0.460	mg/l	0		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077978-4 QC Sample: L1747719-01 Client ID: CR_122717						
Hardness	118	117	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1077980-4 QC Sample: L1747719-01 Client ID: CR_122717						
Arsenic, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.00244	0.00252	mg/l	3		20
Lead, Total	0.00134	0.00138	mg/l	2		20
Nickel, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01234	0.01259	mg/l	2		20

INORGANICS & MISCELLANEOUS

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

SAMPLE RESULTS

Lab ID: L1747719-01
Client ID: CR_122717
Sample Location: CAMBRIDGE, MA
Matrix: Groundwater

Date Collected: 12/27/17 15:30
Date Received: 12/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/28/17 04:10	121,2540D	VB
pH (H)	7.1		SU	-	NA	1	-	12/27/17 20:58	1,9040C	AS
Nitrogen, Ammonia	0.126		mg/l	0.075	--	1	12/28/17 15:30	12/29/17 12:54	121,4500NH3-BH	JO
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/28/17 01:02	12/28/17 01:28	1,7196A	UN



Project Name: FIRST ST. PUD PARCELS B+C

Lab Number: L1747719

Project Number: 5863.9.08

Report Date: 01/03/18

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: WG1077120-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/28/17 01:02	12/28/17 01:25	1,7196A	UN
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1077124-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/28/17 04:10	121,2540D	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1077449-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	12/28/17 15:30	12/29/17 12:25	121,4500NH3-BH	JO

Lab Control Sample Analysis

Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C

Project Number: 5863.9.08

Lab Number: L1747719

Report Date: 01/03/18

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1077088-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1077120-2								
Chromium, Hexavalent	100		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1077449-2								
Nitrogen, Ammonia	92		-		80-120	-		20

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077120-4 QC Sample: L1747719-01 Client ID: CR_122717												
Chromium, Hexavalent	ND	0.1	0.102	102	-	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077449-4 QC Sample: L1747719-01 Client ID: CR_122717												
Nitrogen, Ammonia	0.126	4	3.92	95	-	-	-	-	80-120	-	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST ST. PUD PARCELS B+C

Project Number: 5863.9.08

Lab Number: L1747719

Report Date: 01/03/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077088-2 QC Sample: L1747719-01 Client ID: CR_122717						
pH (H)	7.1	7.0	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077120-3 QC Sample: L1747719-01 Client ID: CR_122717						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077124-2 QC Sample: L1747640-01 Client ID: DUP Sample						
Solids, Total Suspended	71	63	mg/l	12		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1077449-3 QC Sample: L1747719-01 Client ID: CR_122717						
Nitrogen, Ammonia	0.126	0.144	mg/l	13		20

Project Name: FIRST ST. PUD PARCELS B+C**Lab Number:** L1747719**Project Number:** 5863.9.08**Report Date:** 01/03/18**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(*)
L1747719-01A	Plastic 250ml HNO3 preserved	A	<2	<2	2.0	Y	Absent		NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AS-2008T(180),CR-2008T(180),PB-2008T(180)
L1747719-01B	Plastic 500ml H2SO4 preserved	A	<2	<2	2.0	Y	Absent		NH3-4500(28)
L1747719-01C	Plastic 950ml unpreserved	A	7	7	2.0	Y	Absent		HEXCR-7196(1),PH-9040(1)
L1747719-01D	Plastic 950ml unpreserved	A	7	7	2.0	Y	Absent		TSS-2540(7)
L1747719-01E	Plastic 250ml NaOH preserved	A	>12	>12	2.0	Y	Absent		ARCHIVE()

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

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: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

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.

Project Name: FIRST ST. PUD PARCELS B+C
Project Number: 5863.9.08

Lab Number: L1747719
Report Date: 01/03/18

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.
- 107 Alpha Analytical - In-house calculation method.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, 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, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water

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

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

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



APPENDIX F:

LABORATORY ANALYTICAL DATA – HISTORICAL GROUNDWATER



ANALYTICAL REPORT

Lab Number:	L1745109
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	FIRST STREET PUD PARCELS B&C
Project Number:	5863.9.08
Report Date:	12/13/17

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

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1745109-01	B-3(OW) 120717	WATER	CAMBRIDGE, MA	12/07/17 13:30	12/07/17
L1745109-02	MW-2 120717	WATER	CAMBRIDGE, MA	12/07/17 11:00	12/07/17

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY

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

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

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

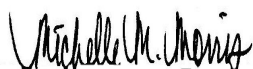
Case Narrative (continued)

Sample Receipt

The analyses performed were specified by the client.

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

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 12/13/17

METALS

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

SAMPLE RESULTS

Lab ID: L1745109-01
Client ID: B-3(OW) 120717
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 12/07/17 13:30
Date Received: 12/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00172		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Chromium, Total	0.00240		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Copper, Total	0.02692		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Iron, Total	2.96		mg/l	0.050	--	1	12/09/17 12:20	12/12/17 17:46	EPA 3005A	19,200.7	AB
Lead, Total	0.00500		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	12/12/17 12:12	12/12/17 16:16	EPA 245.1	3,245.1	MG
Nickel, Total	ND		mg/l	0.00200	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Zinc, Total	0.03120		mg/l	0.01000	--	1	12/09/17 12:20	12/12/17 16:52	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	448		mg/l	0.660	NA	1	12/09/17 12:20	12/12/17 17:46	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		12/12/17 16:52	NA	107,-	



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

SAMPLE RESULTS

Lab ID: L1745109-02
Client ID: MW-2 120717
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 12/07/17 11:00
Date Received: 12/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Chromium, Total	0.00600		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Copper, Total	0.00743		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Iron, Total	0.116		mg/l	0.050	--	1	12/09/17 12:20	12/12/17 17:51	EPA 3005A	19,200.7	AB
Lead, Total	0.00273		mg/l	0.00100	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	12/12/17 12:12	12/12/17 16:22	EPA 245.1	3,245.1	MG
Nickel, Total	0.00334		mg/l	0.00200	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Zinc, Total	0.05956		mg/l	0.01000	--	1	12/09/17 12:20	12/12/17 16:56	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	508		mg/l	0.660	NA	1	12/09/17 12:20	12/12/17 17:51	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		12/12/17 16:56	NA	107,-	



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1070940-1									
Antimony, Total	ND	mg/l	0.00400	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Arsenic, Total	ND	mg/l	0.00100	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Chromium, Total	ND	mg/l	0.00100	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Copper, Total	ND	mg/l	0.00100	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Lead, Total	ND	mg/l	0.00100	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Nickel, Total	ND	mg/l	0.00200	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Selenium, Total	ND	mg/l	0.00500	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Silver, Total	ND	mg/l	0.00040	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM
Zinc, Total	ND	mg/l	0.01000	--	1	12/09/17 12:20	12/11/17 15:04	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1071570-1									
Iron, Total	ND	mg/l	0.050	--	1	12/09/17 12:20	12/12/17 16:32	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 Hardness by SM 2340B - Mansfield Lab for sample(s): 01-02 Batch: WG1071570-1									
Hardness	ND	mg/l	0.660	NA	1	12/09/17 12:20	12/12/17 16:32	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Project Name: FIRST STREET PUD PARCELS B&C

Lab Number: L1745109

Project Number: 5863.9.08

Report Date: 12/13/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1071710-1									
Mercury, Total	ND	mg/l	0.00020	--	1	12/12/17 12:12	12/12/17 16:13	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Lab Number: L1745109

Project Number: 5863.9.08

Report Date: 12/13/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1070940-2								
Antimony, Total	103		-		85-115	-		
Arsenic, Total	110		-		85-115	-		
Cadmium, Total	110		-		85-115	-		
Chromium, Total	106		-		85-115	-		
Copper, Total	108		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	108		-		85-115	-		
Selenium, Total	110		-		85-115	-		
Silver, Total	102		-		85-115	-		
Zinc, Total	113		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1071570-2								
Iron, Total	99		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1071570-2								
Hardness	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1071710-2								
Mercury, Total	113		-		85-115	-		

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1070940-3 QC Sample: L1744981-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5401	108		-	-		70-130	-		20
Arsenic, Total	0.0024	0.12	0.1379	113		-	-		70-130	-		20
Cadmium, Total	0.0002	0.051	0.05512	108		-	-		70-130	-		20
Chromium, Total	0.0036	0.2	0.2079	102		-	-		70-130	-		20
Copper, Total	0.09440	0.25	0.3566	105		-	-		70-130	-		20
Lead, Total	0.0065	0.51	0.5543	107		-	-		70-130	-		20
Nickel, Total	0.0067	0.5	0.5180	102		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1301	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04896	98		-	-		70-130	-		20
Zinc, Total	0.2227	0.5	0.7673	109		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1070940-7 QC Sample: L1745192-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4949	99		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1284	107		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05332	104		-	-		70-130	-		20
Chromium, Total	0.0013	0.2	0.2015	100		-	-		70-130	-		20
Copper, Total	0.4718	0.25	0.6777	82		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5451	107		-	-		70-130	-		20
Nickel, Total	0.0054	0.5	0.5043	100		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1324	110		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04729	94		-	-		70-130	-		20
Zinc, Total	0.1421	0.5	0.6770	107		-	-		70-130	-		20

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071570-3 QC Sample: L1700012-73 Client ID: MS Sample									
Iron, Total	3.27	1	4.08	81	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071570-3 QC Sample: L1700012-73 Client ID: MS Sample									
Hardness	294	66.2	348	82	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071710-3 QC Sample: L1745109-01 Client ID: B-3(OW) 120717									
Mercury, Total	ND	0.005	0.00498	100	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071710-5 QC Sample: L1745109-02 Client ID: MW-2 120717									
Mercury, Total	ND	0.005	0.00399	80	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1070940-4 QC Sample: L1744981-01 Client ID: DUP Sample						
Copper, Total	0.09440	0.09546	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1070940-8 QC Sample: L1745192-01 Client ID: DUP Sample						
Lead, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071570-4 QC Sample: L1700012-73 Client ID: DUP Sample						
Iron, Total	3.27	3.31	mg/l	1		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071570-4 QC Sample: L1700012-73 Client ID: DUP Sample						
Hardness	294	292	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071710-4 QC Sample: L1745109-01 Client ID: B-3(OW) 120717						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1071710-6 QC Sample: L1745109-02 Client ID: MW-2 120717						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

SAMPLE RESULTS

Lab ID: L1745109-01
Client ID: B-3(OW) 120717
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 12/07/17 13:30
Date Received: 12/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	6.4		mg/l	5.0	NA	1	-	12/08/17 04:50	121,2540D	VB
Cyanide, Total	ND		mg/l	0.005	--	1	12/11/17 11:00	12/11/17 14:24	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/07/17 21:23	121,4500CL-D	AS
pH (H)	6.7		SU	-	NA	1	-	12/08/17 09:37	121,4500H+-B	GD
Nitrogen, Ammonia	8.38		mg/l	0.075	--	1	12/08/17 04:00	12/08/17 22:55	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/08/17 01:28	12/08/17 02:23	1,7196A	UN
Anions by Ion Chromatography - Westborough Lab										
Chloride	1150		mg/l	25.0	--	50	-	12/11/17 19:46	44,300.0	AU



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

SAMPLE RESULTS

Lab ID: L1745109-02
Client ID: MW-2 120717
Sample Location: CAMBRIDGE, MA
Matrix: Water

Date Collected: 12/07/17 11:00
Date Received: 12/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/08/17 04:50	121,2540D	VB
Cyanide, Total	ND		mg/l	0.005	--	1	12/11/17 11:00	12/11/17 14:26	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/07/17 21:23	121,4500CL-D	AS
pH (H)	6.9		SU	-	NA	1	-	12/08/17 09:37	121,4500H+-B	GD
Nitrogen, Ammonia	12.4		mg/l	0.075	--	1	12/08/17 04:00	12/08/17 22:58	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/08/17 01:28	12/08/17 02:23	1,7196A	UN
Anions by Ion Chromatography - Westborough Lab										
Chloride	2370		mg/l	25.0	--	50	-	12/11/17 19:58	44,300.0	AU



Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Method Blank Analysis
Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1070321-1									
Chlorine, Total Residual	ND	mg/l	0.02	--	1	-	12/07/17 21:23	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1070371-1									
Solids, Total Suspended	ND	mg/l	5.0	NA	1	-	12/08/17 04:50	121,2540D	VB
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1070394-1									
Chromium, Hexavalent	ND	mg/l	0.010	--	1	12/08/17 01:28	12/08/17 02:13	1,7196A	UN
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1070395-1									
Nitrogen, Ammonia	ND	mg/l	0.075	--	1	12/08/17 04:00	12/08/17 22:31	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1071205-1									
Cyanide, Total	ND	mg/l	0.005	--	1	12/11/17 11:00	12/11/17 13:43	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1071965-1									
Chloride	ND	mg/l	0.500	--	1	-	12/11/17 18:22	44,300.0	AU

Lab Control Sample Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1070321-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1070394-2								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1070395-2								
Nitrogen, Ammonia	96		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1070540-1								
pH	99		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1071205-2								
Cyanide, Total	97		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG1071965-2								
Chloride	96		-		90-110	-		

Matrix Spike Analysis Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MS Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070321-4 QC Sample: L1744990-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.248	ND	0	Q	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070394-4 QC Sample: L1745109-01 Client ID: B-3(OW) 120717												
Chromium, Hexavalent	ND	0.1	0.102	102		-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070395-4 QC Sample: L1745109-01 Client ID: B-3(OW) 120717												
Nitrogen, Ammonia	8.38	4	12.2	96		-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1071205-4 QC Sample: L1745109-02 Client ID: MW-2 120717												
Cyanide, Total	ND	0.2	0.190	95		-	-	-	90-110	-	-	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1071965-3 QC Sample: L1744593-03 Client ID: MS Sample												
Chloride	6.88	4	10.8	99		-	-	-	90-110	-	-	18

Lab Duplicate Analysis

Batch Quality Control

Project Name: FIRST STREET PUD PARCELS B&C

Project Number: 5863.9.08

Lab Number: L1745109

Report Date: 12/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070321-3 QC Sample: L1744990-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070371-2 QC Sample: L1744780-01 Client ID: DUP Sample						
Solids, Total Suspended	920	980	mg/l	6		29
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070394-3 QC Sample: L1745109-02 Client ID: MW-2 120717						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070395-3 QC Sample: L1745109-01 Client ID: B-3(OW) 120717						
Nitrogen, Ammonia	8.38	8.87	mg/l	6		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1070540-2 QC Sample: L1745109-01 Client ID: B-3(OW) 120717						
pH (H)	6.7	6.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1071205-3 QC Sample: L1745109-01 Client ID: B-3(OW) 120717						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1071965-4 QC Sample: L1744593-03 Client ID: DUP Sample						
Chloride	6.88	6.85	mg/l	0		18

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Serial_No:12131721:09
Lab Number: L1745109
Report Date: 12/13/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1745109-01A	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1745109-01B	Plastic 250ml NaOH preserved	A	>12	>12	2.1	Y	Absent		TCN-4500(14)
L1745109-01C	Plastic 500ml H2SO4 preserved	A	<2	<2	2.1	Y	Absent		NH3-4500(28)
L1745109-01D	Plastic 950ml unpreserved	A	7	7	2.1	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1745109-01E	Plastic 950ml unpreserved	A	7	7	2.1	Y	Absent		TSS-2540(7)
L1745109-02A	Plastic 250ml HNO3 preserved	A	<2	<2	2.1	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1745109-02B	Plastic 250ml NaOH preserved	A	>12	>12	2.1	Y	Absent		TCN-4500(14)
L1745109-02C	Plastic 500ml H2SO4 preserved	A	<2	<2	2.1	Y	Absent		NH3-4500(28)
L1745109-02D	Plastic 950ml unpreserved	A	7	7	2.1	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1),PH-4500(.01)
L1745109-02E	Plastic 950ml unpreserved	A	7	7	2.1	Y	Absent		TSS-2540(7)

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

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GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
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: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

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Report Date: 12/13/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: FIRST STREET PUD PARCELS B&C
Project Number: 5863.9.08

Lab Number: L1745109
Report Date: 12/13/17

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 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.
- 107 Alpha Analytical - In-house calculation method.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.

SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, 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, EPA 350.1: Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water

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

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

SM2340B

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



CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 12/7/17

ALPHA Job #: L1745709

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

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

Project Information

Project Name: First Street PVD Parcels B&C

Project Location: Cambridge, MA

Project #: 5863.9.08

Project Manager: Scott Smith

ALPHA Quote #:

Turn-Around Time

Standard RUSH (only confirmed if pre-approved)

Date Due: 12/14 Time: 16:00

Report Information - Data Deliverables

ADEX EMAIL

Billing Information

Same as Client info PO #:

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA

Phone: 617-868-1420

Email: SSmith@mcphailco.com

Additional Project Information:

Regulatory Requirements & Project Information Requirements

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

ANALYSIS		SAMPLE INFO	TOTAL BOTTLES
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH		
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRA45 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PPT13	Preservation <input type="checkbox"/> Lab to do	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	Sample Comments	
PCB: <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		
Total RGP Metals			
HEXCR-7196 CR III			
TCN-4500			
TSS			
CL-300, IRL-4500			
W173-4500			

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
45709 01	B-3(aw) 120717	12/7/17	13:30	GW	PJH
02	MW-2 120717	12/7/17	11:00	GW	PJH

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

Preservative
A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₈
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Container Type	P P P P P P P
Preservative	NA C A E A A D

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Scott Smith</i>	12/7/17 16:00	<i>John Doe</i>	12/7/17 16:00
<i>John Doe</i>	12/7/17 17:45	<i>Scott Smith</i>	12/7/17 17:45

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
FORM NO. 01-01 (rev. 12-Mar-2012)