HALEY & ALDRICH, INC.
465 Medford St.
Suite 2200
Boston, MA 02129
617.886.7400

27 November 2019
File No. 128513-008

US Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square - Suite 100 (OEP06-01)
Boston, MA 02109

Attention: Ms. Shelley Puleo
EPA/OEP RGP Applications Coordinator

Subject: Temporary Construction Dewatering
Soldiers Field Park Renovations - Phase IV
Building 1
640 Soldiers Field Road
Allston, Massachusetts

Dear Ms. Puleo:

On behalf of our client, Harvard University Housing c/o Northstar Project and Real Estate Services (Northstar), Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission for a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) to facilitate off-site discharge of dewatering effluent generated during construction activities beneath Building 1 of Soldiers Field Park located at 640 Soldiers Field Road (the "site") in Allston, Massachusetts (see Figure 1). The information presented herein has been prepared to follow requirements of the 2017 US Environmental Protection Agency (EPA) NPDES RGP. A copy of the completed Notice of Intent (NOI) form is enclosed as Appendix A.

As this site is not a listed Massachusetts of Department of Environmental Protection (MassDEP) Massachusetts Contingency Plan (MCP) Disposal Site, a WM15 Transmittal Form and $500 fee have been submitted to MassDEP concurrently with this application; a copy of the WM15 Transmittal Form is included in Appendix A.

EXISTING SITE CONDITIONS AND SITE HISTORY

Soldiers Field Park currently consists of residential buildings and landscaped areas adjacent to the Harvard Business School located in Allston, Massachusetts. The current buildings at the site were constructed in 1976 and have been used as residences since that time. Prior to 1976 the site was undeveloped grassed land and residences. The site associated with this NPDES RGP is delineated within the extent of Building 1 in Soldiers Field Park, as shown on Figure 2.

ENVIRONMENTAL CONDITIONS AND REGULATORY BACKGROUND

According to MassDEP, there are no known releases associated with the construction site.

PROPOSED CONSTRUCTION

The project consists of excavating beneath the ground floor slab of the west and south wings of Building 1 to create two separate crawl spaces for the future routing of utilities beneath the building. A permanent drainage trench will be constructed at the bottom of each crawl space. The crawl spaces will be excavated to approximately 6 ft below the bottom of the ground floor (approximately El. 7.4 Boston City Base (BCB)). As the approximate elevation of groundwater is at El. 8.5, excavation activities will be conducted below the groundwater table.

CURRENT GROUNDWATER QUALITY DATA

To evaluate groundwater quality at the site, an observation well (HA19-01 (OW)) was installed at the site on 1 October 2019. The observation well was developed on 9 October 2019, and a groundwater sample was collected from the observation well on 11 November 2019. The sampling location is shown on Figure 2.

The sample was submitted to Alpha Analytical, Inc. of Westborough, Massachusetts (Alpha) for analysis of volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), total and dissolved metals, polychlorinated biphenyls (PCBs), ammonia, cyanide, total hardness, ethanol, total chloride, total residual chlorine, total phenols, and total suspended solids. pH and temperature readings were collected in the field.

Results of the analyses indicated concentrations of iron and total suspended solids exceed the draft site-specific NPDES RGP effluent criteria. The total lead concentration in the sample collected on 11 October 2019 exceeded the MCP RCGW-2 Reportable Concentration for dissolved lead, so a supplemental sample was collected on 13 November 2019 and submitted to Alpha for dissolved lead. The results of the supplemental sampling indicated concentrations below MCP RCGW-2 Reportable Concentrations. The results are provided in Table I, and the laboratory data reports are included in Appendix B.

RECEIVING WATERS SAMPLING AND DILUTION FACTOR

On 11 November 2019, Haley & Aldrich collected one surface water sample designated CHAR-SW from upstream of the proposed SDO01 outfall location into the Charles River, and the sample was submitted to Alpha for total metals, dissolved hexavalent chromium, ammonia, and hardness. pH and temperature readings were collected in the field. The results of the surface water sample is summarized in Table II and a copy of the laboratory data report is included in Appendix B.

The seven-day-ten-year flow (7Q10) of the receiving water was established using the U.S. Geological Survey (USGS) StreamStats program and confirmed by Massachusetts Department of Environmental Protection (MassDEP) on 6 November 2019. We have additionally confirmed with the MassDEP that the dilution factor for the receiving waters is 74.61. The StreamStats Report, Dilution Factor calculations, and confirmation from MassDEP are included in Appendix C.

EFFLUENT CRITERIA DOCUMENTATION

Groundwater and Receiving Water data were input into the MALimitsBook calculation spreadsheet provided by EPA and used to calculate the effluent criteria for the site. Copies of the "EnterData" and "FreshwaterResults" tabs from the provided excel file are included in Appendix C. The effluent limitations calculated are included for reference in Table I.

DEWATERING SYSTEM AND OFF-SITE DISCHARGE

During construction activities, it will be necessary to perform temporary dewatering to control surface water runoff from groundwater seepage to enable construction in-the-dry. Construction and construction dewatering activities are currently anticipated to be required for a period of over 12 months. On average, we estimate effluent discharge rates of about 50 to 100 gallons per minute (gpm) or less, with occasional peak flows of approximately 150 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations.

Construction dewatering will include piping and discharging to at least one storm drain in the vicinity of the site that discharges into the Charles River through outfall SDO01. The proposed discharge route is shown on Figure 3. Prior to discharge, collected water will be routed through a fractionation tank and bag filters and other necessary treatment components, to remove suspended solids and undissolved chemical constituents, as shown on Figure 4. A Notice of Change (NOC) will be submitted to EPA if additional treatment components need to be mobilized at the site.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT ELIGIBILITY REQUIREMENTS

Based on a review of the resources provided by the U.S. National Register of Historic Places and a review of the Massachusetts Cultural Resource Information System (MACRIS), no historic properties have been established to be present at the project site, and discharges and discharge-related activities are not considered to have the potential to affect historic properties. The discharge is considered to meet Criterion A. Documentation is included in Appendix D.

DETERMINATION OF ENDANGERED SPECIES ACT ELIGIBILITY

According to the guidelines outlined in Appendix I of the 2017 NPDES RGP, a preliminary determination for the action area associated with this project was established using the U.S. Fish and Wildlife Service (FWS) Information for Planning and Consultation (IPaC) online system; a copy of the determination is attached in Appendix E. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A as no listed species or critical habitat have been established to be present within the project action area.

SUPPLEMENTAL INFORMATION

Applications for temporary construction dewatering permit are being submitted concurrently to the Boston Water and Sewer Commission and Department of Conservation and Recreation (DCR); copies of these applications are provided in Appendix F. Approval will be received prior to the start of discharge. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the site and is included in Appendix G.

Owner and Operator Information

Owner:
President and Fellows of Harvard College
Acting by and through
Harvard University Housing
1350 Massachusetts Avenue
Cambridge, Massachusetts 02138
Attn: Justin Stratman

Operator:
Shawmut Design and Construction
560 Harrison Avenue
Boston, Massachusetts 021118
Attn: Katie Gibbs

CLOSING

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

Sincerely yours,
HALEY & ALDRICH, INC.

Nolan T. Lescalleet, G.I.T.
Geologist

Elizabeth J. Christmas, P.E. (NH)
Assistant Project Manager

Michael Cronan, L.S.P., LEED AP
Associate | Senior Project Manager

Attachments:

Table I – Summary of Groundwater Quality Data
Table II – Summary of Receiving Water Data
Figure 1 – Project Locus
Figure 2 – Site and Subsurface Exploration Location Plan
Figure 3 – Proposed Discharge Routes
Figure 4 – Proposed Treatment System Schematic
Appendix A – Notice of Intent (NOI) and WM15 Transmittal
Appendix B – Laboratory Data Reports
Appendix C – Dilution Factor and Effluent Limit Calculations
Appendix D – National Register of Historic Places Documentation
Appendix E – Endangered Species Act Documentation
Appendix F – Copies of BWSC and DCR Permit Applications
Appendix G – Best Management Practices Plan (BMPP)

TABLE I
SUMMARY OF GROUNDWATER QUALITY DATA
SOLDIERS FIELD PARK BUILDING 1
ALLSTON, MA
FILE NO. 128513-008

	Regulatory Criteria		HA19-1(OW)	
Location Name	MCP Reportable Concentration RCGW-2 2014	NPDES RGP Freshwater Criteria	HA19-1(OW)	HA19-1(OW)
Sample Name			HA19-1(OW)-20191011	HA19-1(OW)-20191011
Sample Date			10/11/2019	11/13/2019
Lab Sample ID			L1947881-01	L1954276-01
Volatile Organic Compounds (ug/L)				
Sum Volatile Organic Compound	NA	NA	ND	-
Semi-Volatile Organic Compounds (ug/L)				
Sum Semi-volatile Organic Compound	NA	NA	ND	-
Total Petroleum Hydrocarbons (mg/L)				
Petroleum hydrocarbons	5	5	ND (4)	-
Total Metals (mg/L)				
Antimony	8	0.206	ND (0.004)	-
Arsenic	0.9	0.104	0.00408	-
Cadmium	0.004	0.0102	ND (0.0002)	-
Chromium	0.3	0.323	ND (0.001)	-
Chromium III (Trivalent)	0.6	0.323	ND (0.01)	-
Copper	100	0.242	0.00296	-
Iron	NA	5	**11.7**	-
Lead	0.01	0.16	0.03435	-
Mercury	0.02	0.000739	ND (0.0002)	-
Nickel	0.2	1.45	ND (0.002)	-
Selenium	0.1	0.2358	ND (0.005)	-
Silver	0.007	0.0351	ND (0.0004)	-
Zinc	0.9	0.42	0.02283	-
Dissolved Metals (mg/L)				
Lead	0.01	0.16	-	ND (0.001)
Chromium VI (Hexavalent)	0.3	0.323	ND (0.01)	-
Pesticides and PCBs (ug/L)				
Aroclor-1016 (PCB-1016)	5	6.40E-05	ND (0.25)	-
Aroclor-1221 (PCB-1221)	5	6.40E-05	ND (0.25)	-
Aroclor-1232 (PCB-1232)	5	6.40E-05	ND (0.25)	-
Aroclor-1242 (PCB-1242)	5	6.40E-05	ND (0.25)	-
Aroclor-1248 (PCB-1248)	5	6.40E-05	ND (0.25)	-
Aroclor-1254 (PCB-1254)	5	6.40E-05	ND (0.25)	-
Aroclor-1260 (PCB-1260)	5	6.40E-05	ND (0.2)	-
Other				
Ammonia (mg/L)	NA	Report	1.84	-
Cyanide (mg/L)	0.03	0.178	0.007	-
Total Hardness (mg/L)	NA	NA	348	-
Temperature (C)	NA	NA	16.7	-
pH (SU)	NA	6.5 to 8.3	6.99	-
Ethanol (mg/L)	NA	Report	ND (20)	-
Total Chloride (mg/L)	NA	Report	320	-
Total Residual Chlorine (mg/L)	NA	0.2	ND (0.02)	-
Total Phenols (mg/L)	NA	1.08	ND (0.03)	-
Total Suspended Solids (TSS) (mg/L)	NA	30	**35**	-

ABBREVIATIONS AND NOTES:
-: Not Analyzed
NA: Not Applicable
ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
- Bold values indicate an exceedance of the **RCGW-2** or **NPDES RGP** criteria.
- Temperature and pH sampled in field on 10/11/2019.
- NPDES RGP Freshwater Criteria are to be considered draft and were calculated from MALimitsBook provided by EPA and included in Appendix C.

TABLE II
SUMMARY OF SURFACE WATER QUALITY
SOLDIERS FIELD PARK BUILDING 1
ALLSTON, MA
FILE NO. 128513-008

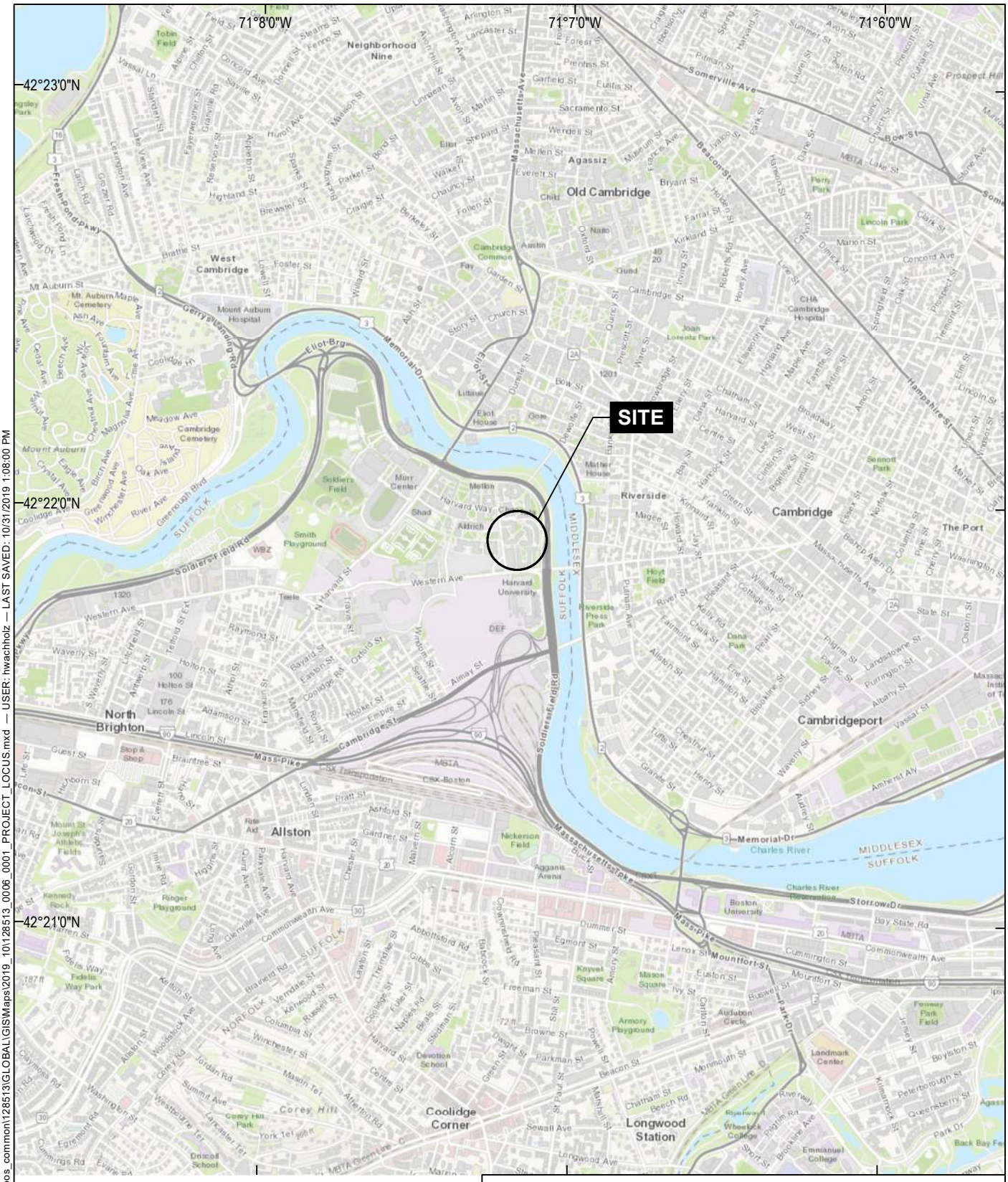
Location Name	CHAR-SW
Sample Name	CHAR-SW-20191011
Sample Date	10/11/2019
Lab Sample ID	L1947882-01
Total Metals (mg/L)	
Antimony	ND (0.004)
Arsenic	ND (0.001)
Cadmium	ND (0.0002)
Chromium	ND (0.001)
Chromium III (Trivalent)	ND (0.01)
Copper	0.00317
Iron	0.748
Lead	0.0034
Mercury	ND (0.0002)
Nickel	ND (0.002)
Selenium	ND (0.005)
Silver	ND (0.0004)
Zinc	0.01324
Dissolved Metals (mg/L)	
Chromium VI (Hexavalent)	ND (0.01)
Other	
Ammonia (mg/L)	ND (0.075)
Temperature (C)	14.09
Hardness (mg/L)	131
pH (SU)	7.2

ABBREVIATIONS AND NOTES:

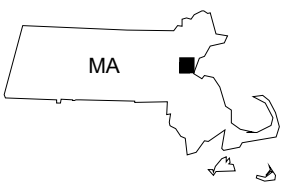
-: Not Analyzed

ND (2.5): Not detected, number in parentheses is the laboratory detection limit

- Temperature sampled in field on 10/11/2019.



GIS FILE PATH: \\haleyaldrich.com\shared\bos_common\128513\GLOBAL\GIS\Maps\2019_10\128513_0006_0001_PROJECT_LOCUS.mxd — USER: hwachholz — LAST SAVED: 10/31/2019 1:08:00 PM



MAP SOURCE: ESRI
SITE COORDINATES: 42°21'56"N, 71°7'9"W

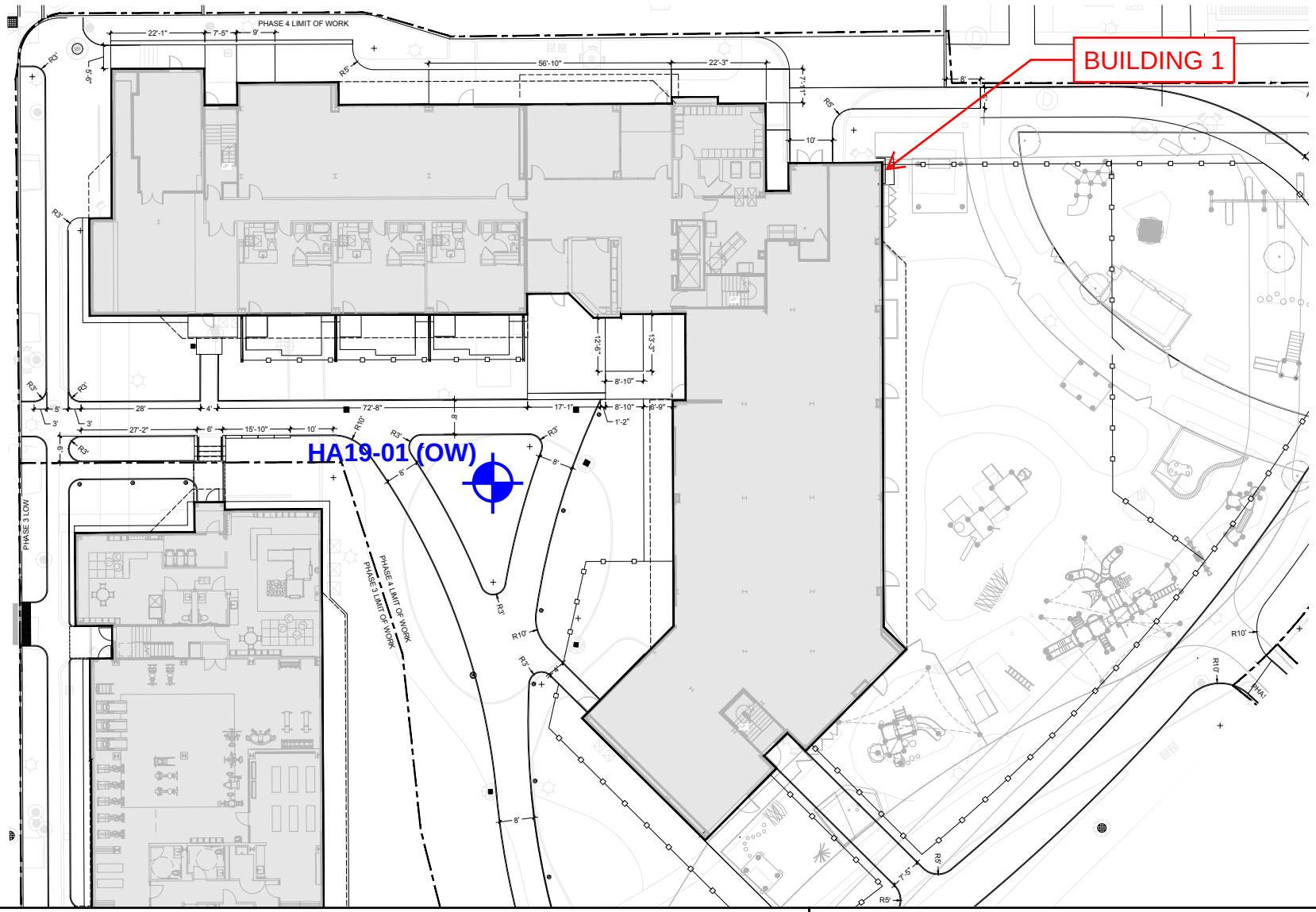
HALEY ALDRICH

SOLDIERS FIELD PARK RENOVATIONS
630 SOLDIERS FIELD ROAD
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
NOVEMBER 2019

FIGURE 1



LEGEND

APPROXIMATE LOCATION OF MONITORING WELL

NOTES

1. BASE PLAN FROM FIGURE L100, SITE PLAN DATED 24 MAY 2019, PROVIDED BY NORTHSTAR PROJECT & REAL ESTATE SERVICES ON 27 AUGUST 2019.

HALEY ALDRICH

SOLDIERS FIELD PARK RENOVATIONS - PHASE 4
630 SOLDIERS FIELD ROAD
ALLSTON, MASSACHUSETTS

SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

NOT TO SCALE
NOVEMBER 2019

FIGURE 2

\\haleyaldrich.com\share\bos_common\128513\008 SFP Phase 4 Environmental\NPDES RGP\Figu
nlescalleet

PROPOSED DISCHARGE ROUTES

HARVARD WY

WESTERN AV

SOLDIERS FIELD RD

MEMORIAL DR

CHARLES RIVER

PRIVATE RD

HAGUE

Baker Library / Bloomberg Center

Hawes

Dean's House

Aldrich

Rock

Cumnock

Burden

Guard Booth

Kresge

Soldiers Field Park

Parking Garage

One Western Av

PARKING

SDO01

SDO041

SDO5

HALEY ALDRICH

SOLDIERS FIELD PARK RENOVATIONS - PHASE 4
630 SOLDIERS FIELD ROAD
ALLSTON, MASSACHUSETTS

PROPOSED DISCHARGE ROUTES

SCALE: AS SHOWN
NOVEMBER 2019

FIGURE 3

\\haleyaldrich.com\share\bos_common\128513\008 SFP Phase 4 Environmental\NPDES RGP\Figu
nlescalleet

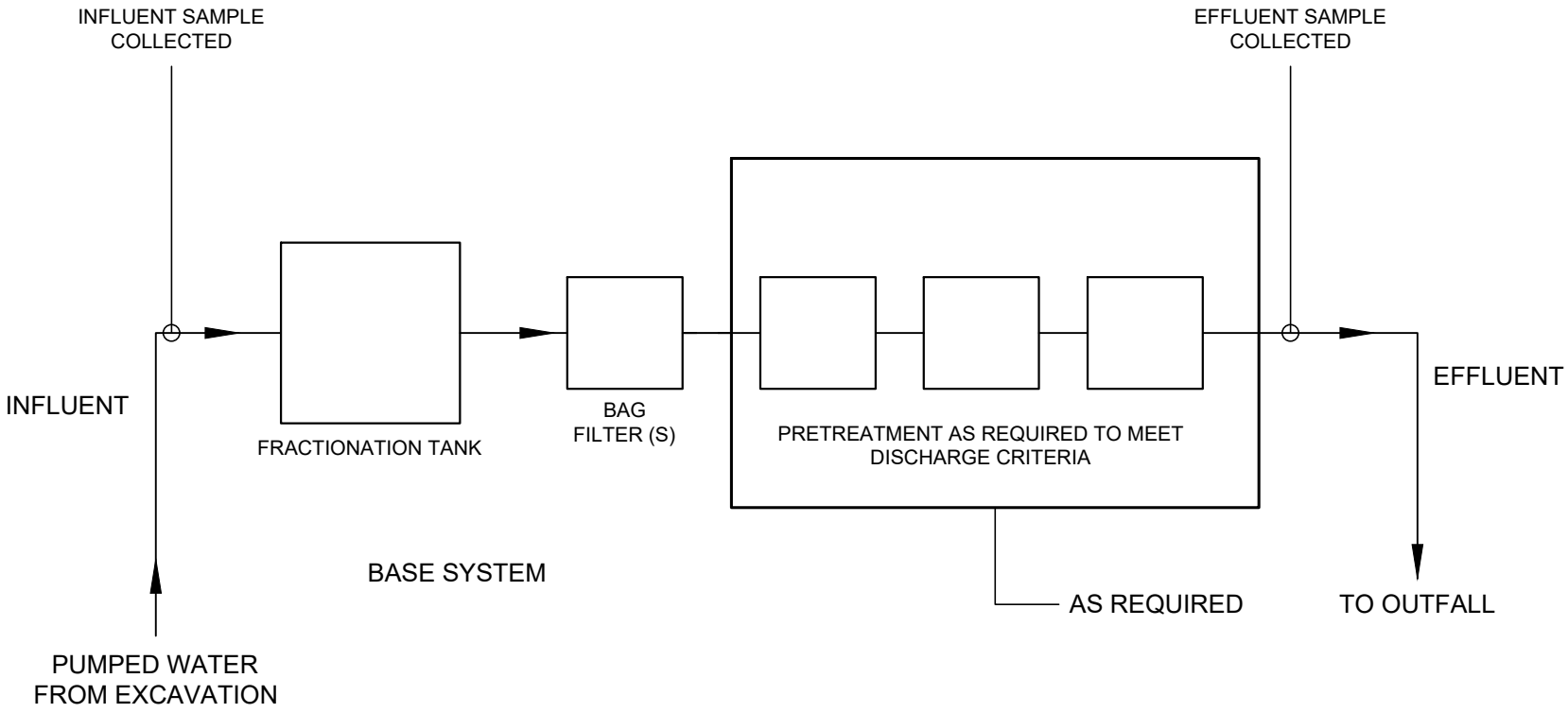
BOSTON WATER AND SEWER

N W E S

150 112 75 38 0 75 150 225 Feet

1 inch = 75 feet

Saved by: NLESCALLEET Printed: 11/8/2019 12:12 PM Sheet: HA-PTSS
\\HALEYALDRICH.COM\SHARE\BOS_COMMON\128513\008 SFP PHASE 4 ENVIRONMENTAL\NPDES RGP\FIGURES\FIGURE 4 - PROPOSED TREATMENT SYSTEM SCHEMATIC\COPY-A142-NPDES-SFR.DWG



LEGEND:

DIRECTION OF FLOW

NOTE:

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

HALEY ALDRICH

SOLDIERS FIELD PARK RENOVATIONS - PHASE 4
630 SOLDIERS FIELD ROAD
ALLSTON, MASSACHUSETTS

PROJECT TREATMENT SYSTEM SCHEMATIC

SCALE: AS SHOWN
NOVEMBER 2019

FIGURE 4

APPENDIX A

Notice of Intent (NOI) and WM15 Transmittal

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
SOLDIERS FIELD PARK RENOVATIONS - PHASE IV BUILDING 1</td><td colspan="3">Site address: 640 SOLDIERS FIELD ROAD
Street:</td></tr>
<tr><td>City: ALLSTON</td><td>State: MA</td><td>Zip: 02163</td></tr>
<tr><td rowspan="4">2. Site owner
HARVARD UNIVERSITY HOUSING
c/o NORTHSTAR PROJECT & REAL ESTATE SERVICES

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: JUSTIN STRATMAN</td></tr>
<tr><td colspan="2">Telephone: 781-496-7827</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address: 1350 MASSACHUSETTS AVENUE
Street:</td></tr>
<tr><td>City: CAMBRIDGE</td><td>State: MA</td><td>Zip: 02138</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
SHAWMUT DESIGN AND CONSTRUCTION</td><td colspan="3">Contact Person: KATIE GIBBS</td></tr>
<tr><td colspan="2">Telephone: 617-438-6144</td><td>Email: KGIBBS@SHAWMUT.COM</td></tr>
<tr><td colspan="3">Mailing address:
Street: 560 HARRISON AVENUE</td></tr>
<tr><td>City: BOSTON</td><td>State: MA</td><td>Zip: 02118</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
NOT APPLICABLE

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
☐ MA Chapter 21e; list RTN(s):

☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:

☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-36	Class B

Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River

2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ■ Yes ☐ No

Are sensitive receptors present near the site? (check one): ☐ Yes ■ No
If yes, specify:

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. TMDL phosphorus, nutrients: Impaired-aesthetic(P), fish consump, fish, aquatic life, wildlife(P), primary contact rec.(P, pathogens), sec. contact rec (P)

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.	15.90 MGD
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.	74.61

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 6 NOVEMBER 2019

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No

C. Source water information:

1. Source water(s) is (check any that apply):

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

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): SDO01	Outfall location(s): (Latitude, Longitude) 42.36619, -71.11762
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: ■ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: BWSC and DCR permits being submitted concurrently. Approval will be received prior to start of discharge. Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): JANUARY 2020 TO JANUARY 2021 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="5">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
■ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	4500NH3	75	1840	1840	Report mg/L	---
Chloride		✓	1	300.0	25000	320000	320000	Report µg/l	---
Total Residual Chlorine	✓		1	4500CL-D	20	0	0	0.2 mg/L	
Total Suspended Solids		✓	1	2540D	5000	35000	35000	30 mg/L	---
Antimony	✓		1	200.8	4	0	0	206 µg/L	
Arsenic		✓	1	200.8	1	4.08	4.08	104 µg/L	
Cadmium	✓		1	200.8	0.2	0	0	10.2 µg/L	
Chromium III	✓		1	107	10	0	0	323 µg/L	
Chromium VI	✓		1	7196A	10	0	0	323 µg/L	
Copper		✓	1	200.8	1	2.96	2.96	242 µg/L	
Iron		✓	1	200.7	50	11700	11700	5,000 µg/L	
Lead		✓	1	200.8	1	34.35	34.35	160 µg/L	
Mercury	✓		1	245.1	0.2	0	0	0.739 µg/L	
Nickel	✓		1	200.8	2	0	0	1,450 µg/L	
Selenium	✓		1	200.8	5	0	0	235.8 µg/L	
Silver	✓		1	200.8	0.4	0	0	35.1 µg/L	
Zinc		✓	1	200.8	10	22.83	22.83	420 µg/L	
Cyanide		✓	1	4500CN-	5	7	7	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		1	624.1	1	0	0	100 µg/L	---
Benzene	✓		1	624.1	1	0	0	5.0 µg/L	---
1,4 Dioxane	✓		1	624.1-SIM	50	0	0	200 µg/L	---
Acetone	✓		1	624.1	10	0	0	7.97 mg/L	---
Phenol	✓		1	420.1	30	0	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	✔		1	624.1	1	0	0	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	624.1	5	0	0	600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	5	0	0	320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	5	0	0	5.0 µg/L	---
Total dichlorobenzene	✔		1	624.1	5	0	0	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	1.5	0	0	70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	1.5	0	0	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624.1	1	0	0	3.2 µg/L	---
Ethylene Dibromide	✔		1	504.1	10	0	0	0.05 µg/L	---
Methylene Chloride	✔		1	624.1	1	0	0	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	2	0	0	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	1.5	0	0	5.0 µg/L	---
Trichloroethylene	✔		1	624.1	1	0	0	5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	1	0	0	5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	624.1	1	0	0	70 µg/L	---
Vinyl Chloride	✔		1	624.1	1	0	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1	5	0	0	190 µg/L	
Diethylhexyl phthalate	✔		1	625.1	2.2	0	0	101 µg/L	
Total Group I PAHs	✔		1	625.1-SIM	0.1	0	0	1.0 µg/L	---
Benzo(a)anthracene	✔		1	625.1-SIM	0.1	0	0	As Total PAHs	
Benzo(a)pyrene	✔		1	625.1-SIM	0.1	0	0		
Benzo(b)fluoranthene	✔		1	625.1-SIM	0.1	0	0		
Benzo(k)fluoranthene	✔		1	625.1-SIM	0.1	0	0		
Chrysene	✔		1	625.1-SIM	0.1	0	0		
Dibenzo(a,h)anthracene	✔		1	625.1-SIM	0.1	0	0		
Indeno(1,2,3-cd)pyrene	✔		1	625.1-SIM	0.1	0	0		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	625.1-SIM	NA	0	0	100 µg/L	---
Naphthalene	✔		1	625.1-SIM	0.1	0	0	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608.3	0.25	0	0	0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1-SIM	1	0	0	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	4000	0	0	5.0 mg/L	---
Ethanol	✔		1	1671A	20000	0	0	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624.1	10	0	0	70 µg/L	
tert-Butyl Alcohol	✔		1	624.1	100	0	0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624.1	20	0	0	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Total Hardness		✔	1	200.7	660	348000	348000		
Temperature (degrees-C)		✔	1	Field	NA	16.7	16.7		
pH		✔	1	Field	NA	6.99	6.99		

E. Treatment system information

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

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

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Refer to Appendix D and Figure 4 of "Temporary Construction Dewatering, Soldiers Field Park Renovations - Phase IV, Building 1, 640 Soldiers Field Road, Allston, Massachusetts" by Haley & Aldrich, Inc.

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Bag filters Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	150
Provide the proposed maximum effluent flow in gpm.	150
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

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

Not Applicable

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

Refer to Appendix F of "Temporary Construction Dewatering, Soldiers Field Park Renovations - Phase IV, Building 1, 640 Soldiers Field Road, Allston, Massachusetts" by Haley & Aldrich, Inc.

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

Refer to Appendix E of "Temporary Construction Dewatering, Soldiers Field Park Renovations - Phase IV, Building 1, 640 Soldiers Field Road, Allston, Massachusetts" by Haley & Aldrich, Inc.

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 "Temporary Construction Dewatering, Soldiers Field Park Renovations - Phase IV, Building 1, 640 Soldiers Field Road, Allston, Massachusetts" by Haley & Aldrich, Inc.

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

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

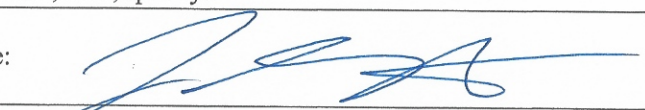
J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Katie Gibbs	Date: 11/26/19
Print Name and Title: KATIE GIBBS	

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be implemented upon initiation of discharge	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: 	Date: 11/26/14
Print Name and Title: JUSTIN STRATMAN, DIRECTOR OF HARVARD UNIVERSITY HOUSING	

Enter your transmittal number → X284759 (Transmittal Number)

Your unique Transmittal Number can be accessed online:
http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: MassDEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

1. Permit Code: 4 to 7 character code from permit instructions	2. Name of Permit Category
WM15	NPDES RGP

3. Type of Project or Activity: Construction dewatering associated with property redevelopment

B. Applicant Information – Firm or Individual

1. Name of Firm - Or, if party needing this approval is an individual enter name below: President and Fellows of Harvard College Acting By and Through Harvard University Housing

2. **Last Name** of Individual	3. **First Name** of Individual	4. MI
NA	NA	NA

5. Street Address: 1350 Massachusetts Avenue

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Cambridge	MA	02138	617-496-7827	NA

11. Contact Person	12. e-mail address
Justin Stratman	

C. Facility, Site or Individual Requiring Approval

1. Name of Facility, Site Or Individual: Soldiers Field Park Renovations - Phase IV, Building 1

2. Street Address: 640 Soldiers Field Road

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Allston	MA	02163	NA	NA

8. DEP Facility Number (if Known)	9. Federal I.D. Number (if Known)	10. BWSC Tracking # (if Known)
NA	NA	NA

D. Application Prepared by (if different from Section B)*

1. Name of Firm Or Individual: Haley & Aldrich, Inc.

2. Address: 465 Medford Street, Suite 2200

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Boston	MA	02129	617-886-7400	NA

8. Contact Person	9. LSP Number (BWSC Permits only)
Michael Cronan	8450

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☐ yes ☒ no
If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit: NA (EOEA File Number)

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☐ **Fee** Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

Check Number	Dollar Amount	Date
252905	$500.00	11/20/2019

APPENDIX B

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L1947881
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Mike Cronan
Phone:	(617) 886-7477
Project Name:	SOLDIERS FIELD PARK BUILDING 1
Project Number:	128513-008
Report Date:	10/24/19

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: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1947881-01	HA19-1(OW)	WATER	BOSTON, MA	10/11/19 12:05	10/11/19

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1947881
Project Number:	128513-008	**Report Date:**	10/24/19

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:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1947881
Project Number:	128513-008	**Report Date:**	10/24/19

Case Narrative (continued)

Report Submission

October 24, 2019: This final report includes the results of all requested analyses.

October 18, 2019: This is a preliminary report.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Chlorine, Total Residual

The WG1295497-4 MS recovery (0%), performed on L1947881-01 (HA19-1(OW)), 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: 10/24/19

ORGANICS

VOLATILES

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 10/15/19 16:53
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01 Date Collected: 10/11/19 12:05

Client ID: HA19-1(OW) Date Received: 10/11/19

Sample Location: BOSTON, MA Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	105		60-140
Fluorobenzene	104		60-140
4-Bromofluorobenzene	95		60-140

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 10/15/19 16:53
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	113		60-140
4-Bromofluorobenzene	92		60-140

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 10/16/19 13:13
Analyst: AJK

Extraction Method: EPA 504.1
Extraction Date: 10/15/19 13:22

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

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 10/16/19 10:10
Analyst: AJK

Extraction Method: EPA 504.1
Extraction Date: 10/15/19 13:22

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1296441-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 10/15/19 14:41
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1296470-8					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 10/15/19 14:41
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1296470-8					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	103		60-140
Fluorobenzene	102		60-140
4-Bromofluorobenzene	94		60-140

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 10/15/19 14:41
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1296935-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	113		60-140
4-Bromofluorobenzene	93		60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1296441-2						
1,2-Dibromoethane	86		-		80-120	-			A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1296470-7								
Methylene chloride	110		-		60-140	-		28
1,1-Dichloroethane	110		-		50-150	-		49
Carbon tetrachloride	105		-		70-130	-		41
1,1,2-Trichloroethane	100		-		70-130	-		45
Tetrachloroethene	100		-		70-130	-		39
1,2-Dichloroethane	120		-		70-130	-		49
1,1,1-Trichloroethane	115		-		70-130	-		36
Benzene	110		-		65-135	-		61
Toluene	105		-		70-130	-		41
Ethylbenzene	95		-		60-140	-		63
Vinyl chloride	130		-		5-195	-		66
1,1-Dichloroethene	115		-		50-150	-		32
cis-1,2-Dichloroethene	110		-		60-140	-		30
Trichloroethene	110		-		65-135	-		48
1,2-Dichlorobenzene	90		-		65-135	-		57
1,3-Dichlorobenzene	90		-		70-130	-		43
1,4-Dichlorobenzene	90		-		65-135	-		57
p/m-Xylene	95		-		60-140	-		30
o-xylene	90		-		60-140	-		30
Acetone	122		-		40-160	-		30
Methyl tert butyl ether	115		-		60-140	-		30
Tert-Butyl Alcohol	130		-		60-140	-		30
Tertiary-Amyl Methyl Ether	110		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1296470-7								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	104				60-140
Fluorobenzene	106				60-140
4-Bromofluorobenzene	92				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1296935-3								
1,4-Dioxane	130		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	113				60-140
4-Bromofluorobenzene	93				60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1 ***Lab Number:*** L1947881

Project Number: 128513-008 ***Report Date:*** 10/24/19

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1296441-3 QC Sample: L1946885-02 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.247	0.253	102		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.247	0.259	105		-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.247	0.257	104		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 10/16/19 12:10
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 10/14/19 20:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	65		42-122
2-Fluorobiphenyl	64		46-121
4-Terphenyl-d14	70		47-138

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 10/15/19 18:56
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 10/14/19 20:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		25-87
Phenol-d6	32		16-65
Nitrobenzene-d5	97		42-122
2-Fluorobiphenyl	81		46-121
2,4,6-Tribromophenol	113		45-128
4-Terphenyl-d14	71		47-138

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 10/15/19 11:45
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 10/14/19 16:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1296028-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		42-122
2-Fluorobiphenyl	78		46-121
4-Terphenyl-d14	100		47-138

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 10/15/19 18:05
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 10/14/19 16:29

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1296036-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		25-87
Phenol-d6	38		16-65
Nitrobenzene-d5	115		42-122
2-Fluorobiphenyl	86		46-121
2,4,6-Tribromophenol	124		45-128
4-Terphenyl-d14	87		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1296028-2								
Bis(2-ethylhexyl)phthalate	117		-		29-137	-		82
Butyl benzyl phthalate	103		-		1-140	-		60
Di-n-butylphthalate	103		-		8-120	-		47
Di-n-octylphthalate	114		-		19-132	-		69
Diethyl phthalate	94		-		1-120	-		100
Dimethyl phthalate	86		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	80				42-122
2-Fluorobiphenyl	82				46-121
4-Terphenyl-d14	93				47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1296036-2								
Acenaphthene	72		-		60-132	-		30
Fluoranthene	73		-		43-121	-		30
Naphthalene	71		-		36-120	-		30
Benzo(a)anthracene	78		-		42-133	-		30
Benzo(a)pyrene	73		-		32-148	-		30
Benzo(b)fluoranthene	77		-		42-140	-		30
Benzo(k)fluoranthene	72		-		25-146	-		30
Chrysene	72		-		44-140	-		30
Acenaphthylene	77		-		54-126	-		30
Anthracene	75		-		43-120	-		30
Benzo(ghi)perylene	83		-		1-195	-		30
Fluorene	74		-		70-120	-		30
Phenanthrene	70		-		65-120	-		30
Dibenzo(a,h)anthracene	80		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	86		-		1-151	-		30
Pyrene	70		-		70-120	-		30
Pentachlorophenol	66		-		38-152	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1296036-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	47				25-87
Phenol-d6	35				16-65
Nitrobenzene-d5	101				42-122
2-Fluorobiphenyl	70				46-121
2,4,6-Tribromophenol	101				45-128
4-Terphenyl-d14	68				47-138

PCBS

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 10/16/19 16:24
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 10/15/19 20:45
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		37-123	B
Decachlorobiphenyl	69		38-114	B
2,4,5,6-Tetrachloro-m-xylene	66		37-123	A
Decachlorobiphenyl	82		38-114	A

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 10/16/19 14:38
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 10/15/19 11:41
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1296398-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		37-123	B
Decachlorobiphenyl	69		38-114	B
2,4,5,6-Tetrachloro-m-xylene	69		37-123	A
Decachlorobiphenyl	77		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1296398-2									
Aroclor 1016	74		-		50-140	-		36	A
Aroclor 1260	78		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70				37-123	B
Decachlorobiphenyl	69				38-114	B
2,4,5,6-Tetrachloro-m-xylene	71				37-123	A
Decachlorobiphenyl	76				38-114	A

METALS

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01 Date Collected: 10/11/19 12:05

Client ID: HA19-1(OW) Date Received: 10/11/19

Sample Location: BOSTON, 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	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00408		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Copper, Total	0.00296		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Iron, Total	11.7		mg/l	0.050	--	1	10/15/19 18:48	10/16/19 18:05	EPA 3005A	19,200.7	MC
Lead, Total	0.03435		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	10/16/19 10:53	10/16/19 16:32	EPA 245.1	3,245.1	GD
Nickel, Total	ND		mg/l	0.00200	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Zinc, Total	0.02283		mg/l	0.01000	--	1	10/15/19 18:48	10/16/19 14:00	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	348		mg/l	0.660	NA	1	10/15/19 18:48	10/16/19 18:05	EPA 3005A	19,200.7	MC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		10/16/19 14:00	NA	107,-	

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

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: WG1296589-1										
Antimony, Total	ND		mg/l	0.00400	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1296590-1										
Iron, Total	ND		mg/l	0.050	--	1	10/15/19 18:48	10/16/19 17:00	19,200.7	MC

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: WG1296590-1										
Hardness	ND		mg/l	0.660	NA	1	10/15/19 18:48	10/16/19 17:00	19,200.7	MC

Prep Information

Digestion Method: EPA 3005A

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

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: WG1296862-1										
Mercury, Total	ND		mg/l	0.0002	--	1	10/16/19 10:53	10/16/19 15:47	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296589-2								
Antimony, Total	91		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	92		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	94		-		85-115	-		
Selenium, Total	103		-		85-115	-		
Silver, Total	98		-		85-115	-		
Zinc, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296590-2								
Iron, Total	111		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1296590-2								
Hardness	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296862-2								
Mercury, Total	97		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-3 QC Sample: L1946243-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4385	88		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1174	98		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05414	106		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2022	101		-	-		70-130	-		20
Copper, Total	0.00401	0.25	0.2445	96		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5484	108		-	-		70-130	-		20
Nickel, Total	0.0081	0.5	0.4913	97		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1300	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05048	101		-	-		70-130	-		20
Zinc, Total	0.0247	0.5	0.5481	105		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-5 QC Sample: L1947882-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4125	82		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1191	99		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05461	107		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2036	102		-	-		70-130	-		20
Copper, Total	0.00317	0.25	0.2493	98		-	-		70-130	-		20
Lead, Total	0.00340	0.51	0.5479	107		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4914	98		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1203	100		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05006	100		-	-		70-130	-		20
Zinc, Total	0.01324	0.5	0.5398	105		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

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: WG1296590-3 QC Sample: L1947882-01 Client ID: MS Sample									
Iron, Total	0.748	1	1.83	108	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-3 QC Sample: L1947882-01 Client ID: MS Sample									
Hardness	131	66.2	199	103	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-3 QC Sample: L1946749-21 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	94	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-5 QC Sample: L1946749-30 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	95	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-4 QC Sample: L1946243-01 Client ID: DUP Sample						
Copper, Total	0.00401	0.00424	mg/l	6		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-6 QC Sample: L1947882-01 Client ID: DUP Sample						
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	0.00317	0.00385	mg/l	19		20
Lead, Total	0.00340	0.00340	mg/l	0		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	0.01324	0.01247	mg/l	6		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-4 QC Sample: L1947882-01 Client ID: DUP Sample						
Iron, Total	0.748	0.693	mg/l	8		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-4 QC Sample: L1947882-01 Client ID: DUP Sample						
Hardness	131	129	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-4 QC Sample: L1946749-21 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-6 QC Sample: L1946749-30 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008
Lab Number: L1947881
Report Date: 10/24/19

SAMPLE RESULTS

Lab ID: L1947881-01
Client ID: HA19-1(OW)
Sample Location: BOSTON, MA
Sample Depth:
Matrix: Water

Date Collected: 10/11/19 12:05
Date Received: 10/11/19
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	35.		mg/l	5.0	NA	1	-	10/14/19 11:07	121,2540D	DR
Cyanide, Total	0.007		mg/l	0.005	--	1	10/13/19 17:40	10/14/19 16:01	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/12/19 03:19	121,4500CL-D	JW
Nitrogen, Ammonia	1.84		mg/l	0.075	--	1	10/12/19 20:38	10/15/19 22:28	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	10/12/19 16:30	10/14/19 22:45	74,1664A	MM
Phenolics, Total	ND		mg/l	0.030	--	1	10/15/19 10:40	10/16/19 07:44	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/12/19 05:00	10/12/19 05:49	1,7196A	JA
Anions by Ion Chromatography - Westborough Lab										
Chloride	320.		mg/l	25.0	--	50	-	10/15/19 21:15	44,300.0	AT

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1947881

Project Number: 128513-008 **Report Date:** 10/24/19

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: WG1295422-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/12/19 05:00	10/12/19 05:45	1,7196A	JA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1295497-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/12/19 03:19	121,4500CL-D	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1295595-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/12/19 20:38	10/15/19 22:15	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1295703-1										
Cyanide, Total	ND		mg/l	0.005	--	1	10/13/19 17:40	10/14/19 15:40	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1295832-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/14/19 11:07	121,2540D	DR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1296012-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	10/12/19 16:30	10/14/19 22:45	74,1664A	MM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1296357-1										
Phenolics, Total	ND		mg/l	0.030	--	1	10/15/19 10:40	10/16/19 07:41	4,420.1	MV
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1297073-1										
Chloride	ND		mg/l	0.500	--	1	-	10/15/19 17:47	44,300.0	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295422-2								
Chromium, Hexavalent	92		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295497-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295595-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295703-2								
Cyanide, Total	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1296012-2								
TPH	70		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1296357-2								
Phenolics, Total	96		-		70-130	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1297073-2								
Chloride	101		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

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: WG1295422-4 QC Sample: L1947881-01 Client ID: HA19-1(OW)												
Chromium, Hexavalent	ND	0.1	0.093	93		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295497-4 QC Sample: L1947881-01 Client ID: HA19-1(OW)												
Chlorine, Total Residual	ND	0.25	ND	**0**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295595-4 QC Sample: L1947881-01 Client ID: HA19-1(OW)												
Nitrogen, Ammonia	1.84	4	5.28	86		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295703-4 QC Sample: L1947457-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.183	92		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1296012-4 QC Sample: L1947607-01 Client ID: MS Sample												
TPH	ND	20	13.9	70		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1296357-4 QC Sample: L1947881-01 Client ID: HA19-1(OW)												
Phenolics, Total	ND	0.4	0.36	91		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1297073-3 WG1297073-4 QC Sample: L1948083-08 Client ID: MS Sample												
Chloride	1710	400	2340	**158**	Q	2110	101		90-110	**24**	Q	18

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1947881

Report Date: 10/24/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295422-3 QC Sample: L1947881-01 Client ID: HA19-1(OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295497-3 QC Sample: L1947881-01 Client ID: HA19-1(OW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295595-3 QC Sample: L1947881-01 Client ID: HA19-1(OW)						
Nitrogen, Ammonia	1.84	1.84	mg/l	0		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295703-3 QC Sample: L1947457-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295832-2 QC Sample: L1947595-01 Client ID: DUP Sample						
Solids, Total Suspended	1200	1200	mg/l	0		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1296012-3 QC Sample: L1947607-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1296357-3 QC Sample: L1947881-01 Client ID: HA19-1(OW)						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

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(*)
L1947881-01A	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01A1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01B	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01B1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01C	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01C1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1947881-01D	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		504(14)
L1947881-01D1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		504(14)
L1947881-01E	Vial unpreserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1947881-01E1	Vial unpreserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1947881-01E2	Vial unpreserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1947881-01F	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		HOLD-METAL-DISSOLVED(180)
L1947881-01G	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),FE-UI(180),CU-2008T(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),PB-2008T(180),CR-2008T(180),SB-2008T(180)
L1947881-01H	Plastic 250ml NaOH preserved	A	>12	>12	4.0	Y	Absent		TCN-4500(14)
L1947881-01J	Plastic 250ml NaOH preserved	A	>12	>12	4.0	Y	Absent		HOLD-WETCHEM()
L1947881-01K	Plastic 500ml H2SO4 preserved	A	<2	<2	4.0	Y	Absent		NH3-4500(28)
L1947881-01L	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		HEXCR-7196(1),CL-300(28),TRC-4500(1)
L1947881-01M	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		TSS-2540(7)
L1947881-01P	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		PCB-608.3(7)
L1947881-01Q	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		PCB-608.3(7)
L1947881-01R	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		PCB-608.3(7)

*Values in parentheses indicate holding time in days

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1947881
Report Date: 10/24/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1947881-01S	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1947881-01T	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1947881-01U	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1947881-01V	Amber 950ml H2SO4 preserved	A	<2	<2	4.0	Y	Absent		TPHENOL-420(28)
L1947881-01W	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)
L1947881-01X	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)

*Values in parentheses indicate holding time in days

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1947881
Project Number:	128513-008	**Report Date:**	10/24/19

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:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1947881
Project Number:	128513-008	**Report Date:**	10/24/19

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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.

Report Format: Data Usability Report

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1947881
Project Number:	128513-008	**Report Date:**	10/24/19

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.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers: Mahwah, NJ 07430 — Albany, NY 12205 — Tonawanda, NY 14150 — Holmes, PA 19043

Page 1 of 1

Date Rec'd in Lab: 10/11/19

ALPHA Job #: L1947681

Project Information

Project Name: Soldiers Field Parcel 1

Project Location: Boston, MA

Project #: 126513-008

(Use Project name as Project #)

Project Manager: Mike Cronan

ALPHAQuote #: HARVARD

Turn-Around Time

Standard ☑ Due Date:

(only if pre approved) ☐ # of Days: 5 Day

H&A Information

H&A Client: Harvard

H&A Address 465 Medford St

Boston, MA 0212-1400

H&A Phone: 617-886-7400

H&A Fax: echristmas@haleyaldrich.com

H&A Email: kchatterton@haleyaldrich.com

Deliverables

☑ Email ☐ Fax

☐ EQuIS (1 File) ☐ EQuIS (4 File)

☐ Other:

Billing Information

☑ Same as Client Info

PO #

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:

☐ NJ ☐ NY

☐ Other:

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

3. HOLD PACN & ACN 13. Dissolved Metals ON HOLD (Field Filtered)

Please sample per EPA Approved 2017 RGP Permit methods

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	1. TSS - 2540	2. TRC-4500	3. TCN-4500 HOLD PACN & ACN	4. 504	5. 8260 & 8260 SIM for Dioxane, or applicable method	6. HEXCR-3500 & Trivalent Chromium	7. TPHENOL-420	8. 8270TCL (including Diethylhexylphthalate)	9. 8270TCL-SIM, or applicable method	10. CL-300	11. Total Metals - Ag,As,Cd,Cr III,Cr VI,Cu,Ni,Pb,Sb,Se,Zn,Fe,Hg	12. Ammonia	13.Diss. Metals-Ag,As,Cd,Cr, Cu,Ni,Pb,Sb,Se,Zn,Fe,Hg	14. A2-ALCOHOL (Ethanol)	15. TPH-1664	16. PCB-608	Sample Specific Comments	Total Bottles
47861-01	HA19-1(OW)	10/11/19	1205	AQ	JDB	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		27

Sample Filtration

☑ Done ☐ Lab to do

Preservation

☐ Lab to do

(Please Specify below)

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935

Mansfield: Certification No: MA015

Container Type																							
Preservative																							

Relinquished By:	Date/Time	Received By:	Date/Time
Jack Bitney	10/11/19 1615	AAL	10/11/19 1621
	10/11/19 1858		10/11/19 1858

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L1947881

Client Information

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

Phone: 603.319.5010
Email: mgulli@alphalab.com

Project Information

Project Location: MA
Project Manager: Melissa Gulli

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1947881

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	HA19-1(OW)	10-11-19 12:05	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		10/14/19		
Form No: AL_subcoc				

Teklab, Inc.
Environmental Laboratory
http://www.teklabinc.com/

October 24, 2019

Melissa Gulli
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (603) 319-5010
FAX:

RE: L1947881 **WorkOrder:** 19101147

Dear Melissa Gulli:

TEKLAB, INC received 1 sample on 10/16/2019 9:42:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 19101147
Client Project: L1947881
Report Date: 24-Oct-2019

This reporting package includes the following:

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 19101147

Client Project: L1947881
Report Date: 24-Oct-2019

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
C -	RL shown is a Client Requested Quantitation Limit	E -	Value above quantitation range
H -	Holding times exceeded	I -	Associated internal standard was outside method criteria
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L1947881

Work Order: 19101147
Report Date: 24-Oct-2019

Cooler Receipt Temp: 2.4 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 19101147
Client Project: L1947881
Report Date: 24-Oct-2019

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2020	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2020	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2020	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2020	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2020	Collinsville
Arkansas	ADEQ	88-0966		3/14/2020	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Indiana	ISDH	C-IL-06		1/31/2020	Collinsville
Kentucky	KDEP	98006		12/31/2019	Collinsville
Kentucky	UST	0073		1/31/2020	Collinsville
Louisiana	LDPH	LA016		12/31/2019	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Tennessee	TDEC	04905		1/31/2020	Collinsville

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 19101147
Client Project: L1947881
Report Date: 24-Oct-2019
Lab ID: 19101147-001
Client Sample ID: HA19-1(OW)
Matrix: AQUEOUS
Collection Date: 10/11/2019 12:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	10/23/2019 15:15	R268536

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L1947881

Work Order: 19101147
Report Date: 24-Oct-2019

EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORG

Batch R268536 **SampType:** MBLK Units **mg/L**
SampID: MBLK-102319

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						10/23/2019

Batch R268536 **SampType:** LCS Units **mg/L**
SampID: LCS-102319

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**290**	250.0	0	116.7	70	132	10/23/2019

Batch R268536 **SampType:** MS Units **mg/L**
SampID: 19101351-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**260**	250.0	0	104.5	70	132	10/23/2019

Batch R268536 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 19101351-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**290**	250.0	0	116.3	261.4	10.65	10/23/2019

Teklab, Inc. Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical

Client Project: L1947881

Work Order: 19101147

Report Date: 24-Oct-2019

Carrier: UPS

Received By: EEP

Completed by: Amber M. Dilallo
On: 16-Oct-2019

Reviewed by: Elizabeth A. Hurley
On: 16-Oct-2019

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C **2.4**
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L1947881

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 603.319.5010 Email: mgulli@alphalab.com	Project Location: MA Project Manager: Melissa Gulli **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1947881

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
1910147-001	HA19-1(OW)	10-11-19 12:05	WATER	Ethanol by EPA 1671 Revision A	

2.4°C CTG3
ice
OL HS
VM 10/14/19

Relinquished By:	Date/Time:	Received By:	Date/Time:
	10/14/19	WDS	10/16/19 0942

ANALYTICAL REPORT

Lab Number:	L1947882
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Mike Cronan
Phone:	(617) 886-7477
Project Name:	SOLDIER'S FIELD PARK BLDG 1
Project Number:	128513-008
Report Date:	10/17/19

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: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008

Lab Number: L1947882
Report Date: 10/17/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1947882-01	CHAR-SW	WATER	BOSTON, MA	10/11/19 14:50	10/11/19

Project Name:	SOLDIER'S FIELD PARK BLDG 1	**Lab Number:**	L1947882
Project Number:	128513-008	**Report Date:**	10/17/19

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.

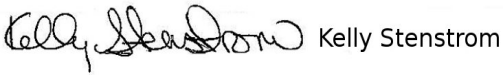
When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded 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.

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

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 10/17/19

METALS

Project Name: SOLDIER'S FIELD PARK BLDG 1 **Lab Number:** L1947882

Project Number: 128513-008 **Report Date:** 10/17/19

SAMPLE RESULTS

Lab ID: L1947882-01 Date Collected: 10/11/19 14:50

Client ID: CHAR-SW Date Received: 10/11/19

Sample Location: BOSTON, 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	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Copper, Total	0.00317		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Iron, Total	0.748		mg/l	0.050	--	1	10/15/19 18:48	10/16/19 17:19	EPA 3005A	19,200.7	MC
Lead, Total	0.00340		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	10/16/19 10:53	10/16/19 16:33	EPA 245.1	3,245.1	GD
Nickel, Total	ND		mg/l	0.00200	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Zinc, Total	0.01324		mg/l	0.01000	--	1	10/15/19 18:48	10/16/19 13:56	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	131		mg/l	0.660	NA	1	10/15/19 18:48	10/16/19 17:19	EPA 3005A	19,200.7	MC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		10/16/19 13:56	NA	107,-	

Project Name: SOLDIER'S FIELD PARK BLDG 1 **Lab Number:** L1947882

Project Number: 128513-008 **Report Date:** 10/17/19

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: WG1296589-1										
Antimony, Total	ND		mg/l	0.00400	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	10/15/19 18:48	10/16/19 12:46	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1296590-1										
Iron, Total	ND		mg/l	0.050	--	1	10/15/19 18:48	10/16/19 17:00	19,200.7	MC

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: WG1296590-1										
Hardness	ND		mg/l	0.660	NA	1	10/15/19 18:48	10/16/19 17:00	19,200.7	MC

Prep Information

Digestion Method: EPA 3005A

Project Name: SOLDIER'S FIELD PARK BLDG 1 **Lab Number:** L1947882

Project Number: 128513-008 **Report Date:** 10/17/19

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: WG1296862-1										
Mercury, Total	ND		mg/l	0.0002	--	1	10/16/19 10:53	10/16/19 15:47	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1

Project Number: 128513-008

Lab Number: L1947882

Report Date: 10/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296589-2								
Antimony, Total	91		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	92		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	94		-		85-115	-		
Selenium, Total	103		-		85-115	-		
Silver, Total	98		-		85-115	-		
Zinc, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296590-2								
Iron, Total	111		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1296590-2								
Hardness	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1296862-2								
Mercury, Total	97		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008

Lab Number: L1947882
Report Date: 10/17/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-3 QC Sample: L1946243-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4385	88		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1174	98		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05414	106		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2022	101		-	-		70-130	-		20
Copper, Total	0.00401	0.25	0.2445	96		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5484	108		-	-		70-130	-		20
Nickel, Total	0.0081	0.5	0.4913	97		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1300	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05048	101		-	-		70-130	-		20
Zinc, Total	0.0247	0.5	0.5481	105		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-5 QC Sample: L1947882-01 Client ID: CHAR-SW												
Antimony, Total	ND	0.5	0.4125	82		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1191	99		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05461	107		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2036	102		-	-		70-130	-		20
Copper, Total	0.00317	0.25	0.2493	98		-	-		70-130	-		20
Lead, Total	0.00340	0.51	0.5479	107		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4914	98		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1203	100		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05006	100		-	-		70-130	-		20
Zinc, Total	0.01324	0.5	0.5398	105		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008

Lab Number: L1947882
Report Date: 10/17/19

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: WG1296590-3 QC Sample: L1947882-01 Client ID: CHAR-SW									
Iron, Total	0.748	1	1.83	108	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-3 QC Sample: L1947882-01 Client ID: CHAR-SW									
Hardness	131	66.2	199	103	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-3 QC Sample: L1946749-21 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	94	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-5 QC Sample: L1946749-30 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	95	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1

Project Number: 128513-008

Lab Number: L1947882

Report Date: 10/17/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-4 QC Sample: L1946243-01 Client ID: DUP Sample						
Copper, Total	0.00401	0.00424	mg/l	6		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296589-6 QC Sample: L1947882-01 Client ID: CHAR-SW						
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	0.00317	0.00385	mg/l	19		20
Lead, Total	0.00340	0.00340	mg/l	0		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	0.01324	0.01247	mg/l	6		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-4 QC Sample: L1947882-01 Client ID: CHAR-SW						
Iron, Total	0.748	0.693	mg/l	8		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296590-4 QC Sample: L1947882-01 Client ID: CHAR-SW						
Hardness	131	129	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-4 QC Sample: L1946749-21 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1

Project Number: 128513-008

Lab Number: L1947882

Report Date: 10/17/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1296862-6 QC Sample: L1946749-30 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008
Lab Number: L1947882
Report Date: 10/17/19

SAMPLE RESULTS

Lab ID: L1947882-01
Client ID: CHAR-SW
Sample Location: BOSTON, MA
Sample Depth:
Matrix: Water

Date Collected: 10/11/19 14:50
Date Received: 10/11/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.2		SU	-	NA	1	-	10/11/19 22:05	121,4500H+-B	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/12/19 20:38	10/15/19 22:31	121,4500NH3-BH	AT
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/12/19 05:00	10/12/19 05:51	1,7196A	JA

Project Name: SOLDIER'S FIELD PARK BLDG 1 **Lab Number:** L1947882

Project Number: 128513-008 **Report Date:** 10/17/19

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: WG1295423-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/12/19 05:00	10/12/19 05:45	1,7196A	JA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1295595-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/12/19 20:38	10/15/19 22:15	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1

Project Number: 128513-008

Lab Number: L1947882

Report Date: 10/17/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295352-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295423-2								
Chromium, Hexavalent	92		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1295595-2								
Nitrogen, Ammonia	90		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008

Lab Number: L1947882
Report Date: 10/17/19

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: WG1295423-4 QC Sample: L1947882-01 Client ID: CHAR-SW												
Chromium, Hexavalent	ND	0.1	0.098	98		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295595-4 QC Sample: L1947881-01 Client ID: MS Sample												
Nitrogen, Ammonia	1.84	4	5.28	86		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIER'S FIELD PARK BLDG 1

Project Number: 128513-008

Lab Number: L1947882

Report Date: 10/17/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295352-2 QC Sample: L1947375-01 Client ID: DUP Sample						
pH	7.2	7.1	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295423-3 QC Sample: L1947882-01 Client ID: CHAR-SW						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1295595-3 QC Sample: L1947881-01 Client ID: DUP Sample						
Nitrogen, Ammonia	1.84	1.84	mg/l	0		20

Project Name: SOLDIER'S FIELD PARK BLDG 1
Project Number: 128513-008

Lab Number: L1947882
Report Date: 10/17/19

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(*)
L1947882-01A	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AS-2008T(180),HG-U(28),AG-2008T(180),SE-2008T(180),CR-2008T(180),SB-2008T(180),PB-2008T(180)
L1947882-01B	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		HEXCR-7196(1),PH-4500(.01)
L1947882-01C	Plastic 500ml H2SO4 preserved	A	<2	<2	4.0	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	SOLDIER'S FIELD PARK BLDG 1	**Lab Number:**	L1947882
Project Number:	128513-008	**Report Date:**	10/17/19

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:	SOLDIER'S FIELD PARK BLDG 1	**Lab Number:**	L1947882
Project Number:	128513-008	**Report Date:**	10/17/19

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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.

Report Format: Data Usability Report

Project Name:	SOLDIER'S FIELD PARK BLDG 1	**Lab Number:**	L1947882
Project Number:	128513-008	**Report Date:**	10/17/19

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.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

Page 1 of 1

Service Centers
Brewer, ME 04412 Portsmouth, NH 03801 Mahwah, NJ 07430 Albany, NY 12205
Tonawanda, NY 14150 Holmes, PA 19043

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Date Rec'd in Lab: 10/11/19

ALPHA Job #: L1947882

H&A Information
- H&A Client: Harvard
- H&A Address: 465 Medford St, Boston, MA 02129-1400
- H&A Phone: 617-886-7400
- H&A Fax: kchatterton@haleyaldrich.com
- H&A Email: echristmas@haleyaldrich.com

Project Information
- Project Name: Soldiers Field Park Building 1
- Project Location: Boston, MA
- Project #: 128513-008
- (Use Project name as Project #) ☐
- Project Manager: Mike Cronan
- ALPHAQuote #: HARVARD

Turn-Around Time
- Standard ☑ Due Date:
- (only if pre approved) ☐ # of Days: 5 Day

Deliverables
- ☑ Email ☐ Fax
- ☐ EQuIS (1 File) ☐ EQuIS (4 File)
- ☐ Other:

Billing Information
- ☑ Same as Client Info
- PO #

Regulatory Requirements (Program/Criteria)
MA NPDES RGP

Note: Select State from menu & identify criteria.

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha [

Other project specific requirements/comments:

Please sample per EPA Approved 2017 RGP Permit methods
Note 1: Total Metals - Ag.As.Cd.Cr III.Cr VI.Cu.Ni.Pb.Sb.Se.Zn.Fe.Hg

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ammonia	pH	Hardness	Total Metals (see note 1)	Total Bottles
47882-01	Char-SW	10/11/19	1450	AQ	JDR	X	X	X	X	3

Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

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

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type																								
Preservative																								

Relinquished By:	Date/Time	Received By:	Date/Time
Jacki Bittner	10/11/19 1615	[signature]	10/11/19 1801
[signature]	10/11/19 1858	[signature]	10/11/19 1858

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

ANALYTICAL REPORT

Lab Number:	L1954276
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Mike Cronan
Phone:	(617) 886-7477
Project Name:	SOLDIERS FIELD PARK BUILDING 1
Project Number:	128513-008
Report Date:	11/14/19

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: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1954276
Report Date: 11/14/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1954276-01	2019-1113-HA19-1(OW)	WATER	BOSTON, MA	11/13/19 12:25	11/13/19

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1954276
Project Number:	128513-008	**Report Date:**	11/14/19

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:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1954276
Project Number:	128513-008	**Report Date:**	11/14/19

Case Narrative (continued)

Sample Receipt

L1954276-01: Additional sample containers were received for the "2019-1113-HA19-1(OW)" sample, they were placed on hold.

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

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 11/14/19

METALS

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1954276

Project Number: 128513-008 **Report Date:** 11/14/19

SAMPLE RESULTS

Lab ID: L1954276-01 Date Collected: 11/13/19 12:25

Client ID: 2019-1113-HA19-1(OW) Date Received: 11/13/19

Sample Location: BOSTON, MA Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Lead, Dissolved	ND		mg/l	0.0010	--	1	11/14/19 07:09	11/14/19 11:55	EPA 3005A	3,200.8	AM

Project Name: SOLDIERS FIELD PARK BUILDING 1 **Lab Number:** L1954276

Project Number: 128513-008 **Report Date:** 11/14/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1308556-1										
Lead, Dissolved	ND		mg/l	0.0010	--	1	11/14/19 07:09	11/14/19 11:09	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1954276

Report Date: 11/14/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1308556-2								
Lead, Dissolved	103		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1954276
Report Date: 11/14/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1308556-3 QC Sample: L1954276-01 Client ID: 2019-1113-HA19-1(OW)												
Lead, Dissolved	ND	0.51	0.5502	108		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOLDIERS FIELD PARK BUILDING 1

Project Number: 128513-008

Lab Number: L1954276

Report Date: 11/14/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1308556-4 QC Sample: L1954276-01 Client ID: 2019-1113-HA19-1(OW)						
Lead, Dissolved	ND	ND	mg/l	NC		20

Project Name: SOLDIERS FIELD PARK BUILDING 1
Project Number: 128513-008

Lab Number: L1954276
Report Date: 11/14/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1954276-01A	Plastic 250ml HNO3 preserved	C	<2	<2	3.0	Y	Absent		PB-2008S(180)
L1954276-01B	Plastic 950ml unpreserved	C	7	7	3.0	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1954276
Project Number:	128513-008	**Report Date:**	11/14/19

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:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1954276
Project Number:	128513-008	**Report Date:**	11/14/19

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.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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.

Report Format: Data Usability Report

Project Name:	SOLDIERS FIELD PARK BUILDING 1	**Lab Number:**	L1954276
Project Number:	128513-008	**Report Date:**	11/14/19

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Brewer, ME 04412 Portsmouth, NH 03801 Mahwah, NJ 07430
Albany, NY 12205
Tonawanda, NY 14150 Holmes, PA 19043

Page 1 of 1

Date Rec'd in Lab: 11/13/19

ALPHA Job # L1942176

H&A Information
H&A Client: Harvard
H&A Address: 465 Medford Street
Boston, MA 02129
H&A Phone: 617-886-7400
H&A Fax: echristmas@haleyaldrich.com
H&A Email: kchatterton@haleyaldrich.com

Project Information
Project Name: Soldiers Field Park Building 1
Project Location: Boston, MA
Project #: 128513-008
(Use Project name as Project #) ☐
Project Manager: Mike Cronan
ALPHAQuote #: HARVARD

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☑ # of Days: 1 Day

Deliverables
☑ Email ☐ Fax
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other:

Billing Information
☑ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)
EPA NPDES
Note: Select State from menu & identify criteria.

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Please sample per EPA Approved 2017 RGP Permit methods

Please specify Metals or TAL.

ANALYSIS
1. Dissolved Lead

Sample Filtration
☑ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	1. Dissolved Lead	Total Bottles
54276-01	2019-1113-HA19-1(OW)	11/13/2019	12:25	AQ	JDB	X	2 JDB

Container Type: P
Preservative: C

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

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

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Jack Bitney	11/13/19-1325	M. Cronan	11/13/19 1630
M. Cronan	11/13/19 16:30	AJL	11/13/19 1630
	11/13/19 1814		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

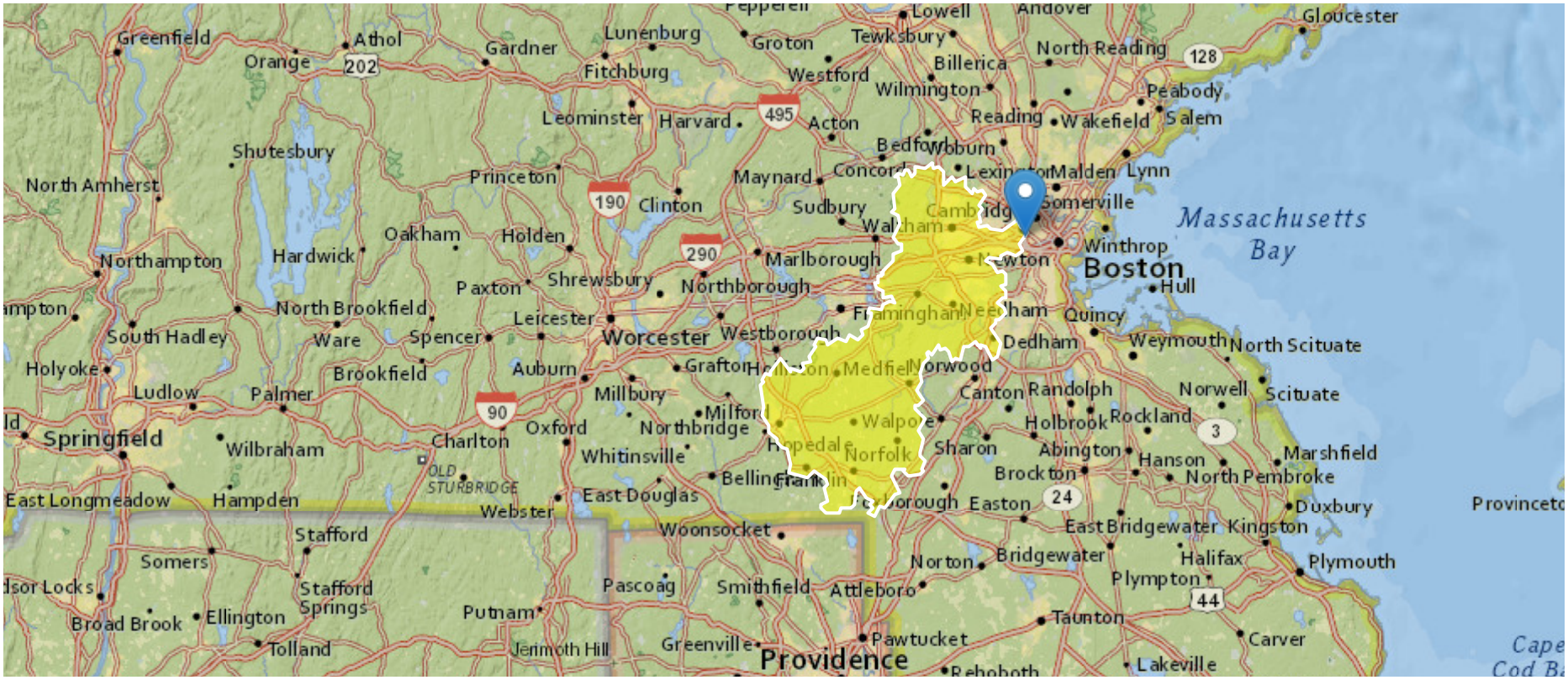
Document ID: 20455 Rev 1 (1/28/2016)

APPENDIX C

Dilution Factor and Effluent Limit Calculations

StreamStats Report- Soldiers Field Park- Building 1

Region ID: MA
Workspace ID: MA20191031185452879000
Clicked Point (Latitude, Longitude): 42.36435, -71.11708
Time: 2019-10-31 14:55:10 -0400



1 Soldiers Field Way Allston, Massachusetts 02135

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	282	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.334	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.23	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Low-Flow Statistics Parameters[Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	282	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.334	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.23	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Disclaimers[Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
7 Day 2 Year Low Flow	49.4	ft^3/s
7 Day 10 Year Low Flow	24.6	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

Application Version: 4.3.8

HALEY & ALDRICH, INC.		**CALCULATIONS**	FILE NO.	128513-008
			SHEET	1 of 1
CLIENT	Harvard University Housing		DATE	31 October 2019
PROJECT	Soldiers Field Park - Phase IV (Building 1)		COMPUTED BY	NTL
SUBJECT	Dilution Factor Calculations			

PURPOSE: Calculate Dilution Factor (DF) for project based on 7 Day 10 Year (7Q10) Low Flow values.

APPROACH: Calculate DF based on EPA formula $(Q_S + Q_D)/Q_D$, where Q_S is 7Q10 in million gallons per day (MGD) and Q_D is discharge flow in MGD.

ASSUMPTIONS:
1. 7Q10 is 24.6 cfs (from StreamStats 4.0)
2. A conversion of 7.48 is used to convert cubic feet to gallons
3. A discharge flowrate of 150 gpm is assumed

CALCULATIONS:

7Q10 Low Flow Value (Q_S)

$$Q_S = \frac{24.6\ ft^3}{sec} \times \frac{7.48\ gallons}{ft^3} \times \frac{86{,}400\ sec}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

Q_S = 15.90 MGD

Discharge Flowrate (Q_D)

$$Q_D = \frac{150\ gallons}{min} \times \frac{1{,}440\ min}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons}$$

Q_D = 0.216 MGD

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{QD} = \frac{15.90\ MGD + 0.216\ MGD}{0.216\ MGD} = 74.61$$

CONCLUSION The dilution factor for this project is calculated to be 74.61 based on the provided 7Q10 low flow value and discharge flowrate.

From: Ruan, Xiaodan (DEP) <xiaodan.ruan@state.ma.us>
Sent: Wednesday, November 6, 2019 1:34 PM
To: Lescalleet, Nolan
Cc: Vakalopoulos, Catherine (DEP)
Subject: RE: NPDES RGP - 1 Soldiers Field Way Building 1 - 7Q10 and Dilution Factor Confirmation

---

Hi Nolan,

Sorry for the late reply. I wasn't able to look at this yesterday.

I can confirm that the 7Q10 value of 24.6 cfs, 15.90 MGD, and the dilution calculation of 74.61 for the proposed discharge from the location 1 Soldiers Field Way, Allston at a maximum flow rate of 150 gpm are correct.

To assist you with filling out the NOI for coverage under the RGP, this segment of the Charles River is identified as MA72-36, classified as Class B, and is not listed as an Outstanding Resource Water. There are two approved TMDLs for pathogens and nutrients. To see the causes of impairments, go to: https://www.mass.gov/files/documents/2016/08/sa/14list2_0.pdf and search for "MA72-36".

In addition to submitting the EPA NOI for the RGP, if this is not a *current* MCP site, you will have to apply to MassDEP and submit a fee (unless fee exempt, e.g. a municipality). Instructions are located here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent.

Please let me know if you have any questions.

Thanks,
Xiaodan

From: Lescalleet, Nolan <NLescalleet@haleyaldrich.com>
Sent: Wednesday, November 6, 2019 10:53 AM
To: Ruan, Xiaodan (DEP) <xiaodan.ruan@mass.gov>
Cc: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Subject: RE: NPDES RGP - 1 Soldiers Field Way Building 1 - 7Q10 and Dilution Factor Confirmation

Good morning Xiaodan,

Just following up on these calculations. I am trying to get the report finalized by the end of the week. Let me know!

Thanks,
Nolan

Nolan T. Lescalleet, GIT | Haley & Aldrich, Inc.
Geologist

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Tuesday, November 5, 2019 11:19 AM
To: Ruan, Xiaodan (DEP) <xiaodan.ruan@state.ma.us>
Cc: Lescalleet, Nolan <NLescalleet@haleyaldrich.com>
Subject: FW: NPDES RGP - 1 Soldiers Field Way Building 1 - 7Q10 and Dilution Factor Confirmation

CAUTION: External Email

Hi Xiaodan,
Can you please review this when you have the chance later today?
Thanks,
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: Lescalleet, Nolan [mailto:NLescalleet@haleyaldrich.com]
Sent: Thursday, October 31, 2019 3:55 PM
To: Vakalopoulos, Catherine (DEP)
Subject: NPDES RGP - 1 Soldiers Field Way Building 1 - 7Q10 and Dilution Factor Confirmation

Good afternoon Cathy.

I was given your contact from my company to complete a NPDES Permit for the attached site. As this is my first NPDES permit preparation, please let me know if the below and attached information is sufficient for this dilution factor calculation!

As required in Appendix V of the 2017 RGP, I have attached to this email our StreamStats report detailing the 7 Day 10 Year (7Q10) low flow value for our project (listed below) along with the dilution factor calculations for your review and confirmation.

Project:
1 Soldiers Field Way
Allston Massachusetts

7 Day 10 Year Low Flow value (from attached StreamStats Report) = 24.6 cfs, 15.90 MGD

Dilution Factor (from attached calculations) = 74.61

We are assuming a flow of 50 gpm with peak flows up to 150 gpm. The discharge route for this project travels east then discharges to the Charles River.

Can you please confirm if these values are appropriate for use for our project?

Thanks you for your help.

Nolan T. Lescalleet, GIT
Geologist

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

T: 617-886-7520
C: 508-439-7303

www.haleyaldrich.com

Enter number values in green boxes below

Enter values in the units specified

↓	
15.9	Q_R = Enter upstream flow in **MGD**
0.216	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓	
74.61	

Enter values in the units specified

↓	
348	C_d = Enter influent hardness in **mg/L** $CaCO_3$
131	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

Enter **receiving water** concentrations in the units specified

↓	
7.2	pH in **Standard Units**
14.09	Temperature in **°C**
0	Ammonia in **mg/L**
131	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
3.17	Copper in **µg/L**
748	Iron in **µg/L**
3.4	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
13.24	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓	
0	TRC in **µg/L**
1.84	Ammonia in **mg/L**
0	Antimony in **µg/L**
4.08	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
2.96	Copper in **µg/L**
11700	Iron in **µg/L**
34.35	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
22.83	Zinc in **µg/L**
7	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved
Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Only if approved by State as the entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State
Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges
Hardness required for freshwater
Salinity required for saltwater (estuarine and marine)
Metals required for all discharges if present and if dilution factor is > 1
Enter 0 if non-detect or testing not required

if >1 sample, enter maximum
if >10 samples, may enter 95th percentile
Enter 0 if non-detect or testing not required

Dilution Factor	74.6					
	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
A. Inorganics						
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	**0.2**	mg/L	821	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	47751	µg/L		
Arsenic	**104**	µg/L	746	µg/L		
Cadmium	**10.2**	µg/L	25.0680	µg/L		
Chromium III	**323**	µg/L	8167.0	µg/L		
Chromium VI	**323**	µg/L	853.1	µg/L		
Copper	**242**	µg/L	659.9	µg/L		
Iron	**5000**	µg/L	19550	µg/L		
Lead	**160**	µg/L	93.97	µg/L		
Mercury	**0.739**	µg/L	67.59	µg/L		
Nickel	**1450**	µg/L	4982.5	µg/L		
Selenium	**235.8**	µg/L	373.1	µg/L		
Silver	**35.1**	µg/L	466.6	µg/L		
Zinc	**420**	µg/L	10474.3	µg/L		
Cyanide	**178**	mg/L	388.0	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	22383	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	119.4	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	246.2	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	164.1	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.2835	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	1492	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

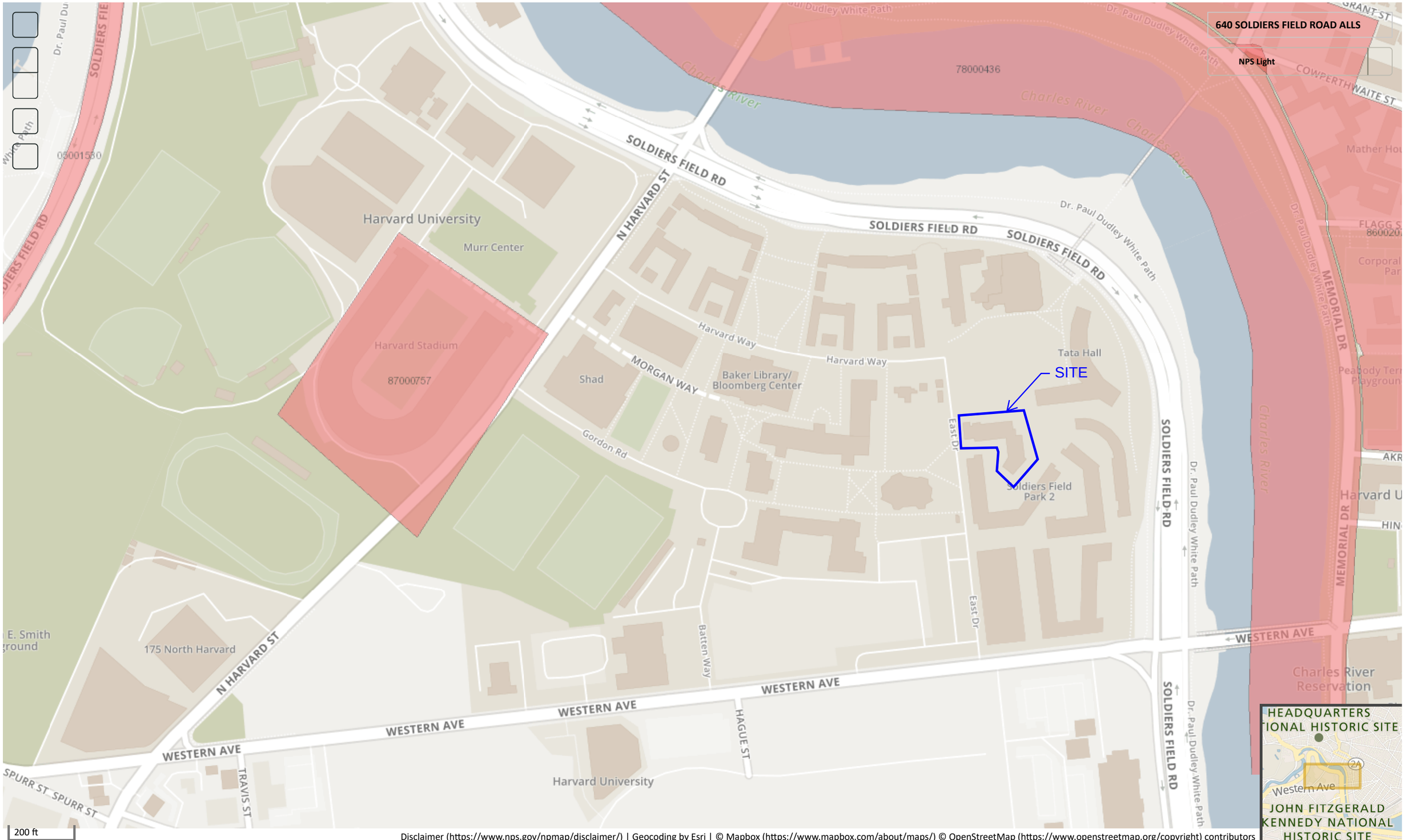
APPENDIX D

National Register of Historic Places Documentation

National Register of Historic Places

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. Data last updated in April, 2014.

National Park Service
U.S. Department of the Interior



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Allston; Street No: 640; Street Name: Soldiers Field Rd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

APPENDIX E

Endangered Species Act Documentation

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: November 14, 2019
Consultation Code: 05E1NE00-2020-SLI-0449
Event Code: 05E1NE00-2020-E-01270
Project Name: Soldiers Field Park Renovations - Phase IV, Building 1

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: 05E1NE00-2020-SLI-0449

Event Code: 05E1NE00-2020-E-01270

Project Name: Soldiers Field Park Renovations - Phase IV, Building 1

Project Type: DEVELOPMENT

Project Description: Temporary construction dewatering to enable construction in-the-dry during excavations in the crawl space of the existing building.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.365704471703786N71.11868691019714W

Counties: Suffolk, MA

Endangered Species Act Species

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

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

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

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

---

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

Critical habitats

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

IPaC **U.S. Fish & Wildlife Service**

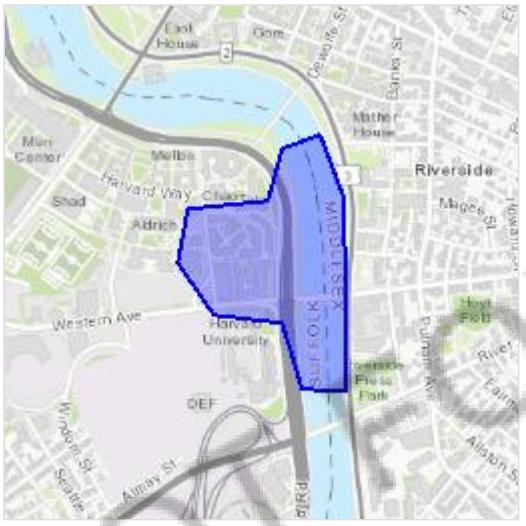
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Middlesex and Suffolk counties, Massachusetts



Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have

sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler Dendroica cerulea — Breeds Apr 29 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Dunlin Calidris alpina arcticola — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Evening Grosbeak Coccothraustes vespertinus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Kentucky Warbler Oporornis formosus — Breeds Apr 20 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Nelson's Sparrow Ammodramus nelsoni — Breeds May 15 to Sep 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-throated Loon Gavia stellata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird Euphagus carolinus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Semipalmated Sandpiper Calidris pusilla — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Snowy Owl Bubo scandiacus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

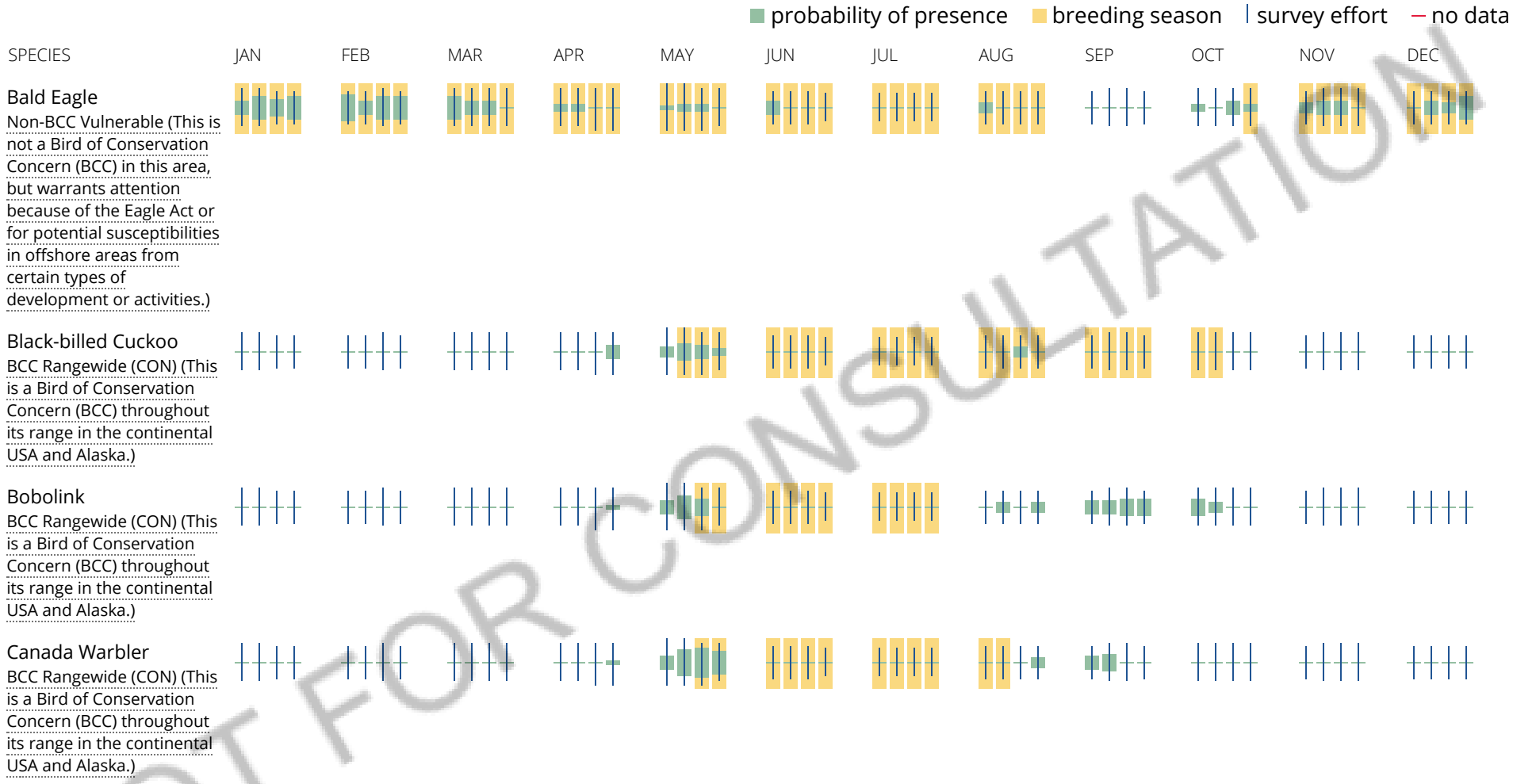
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

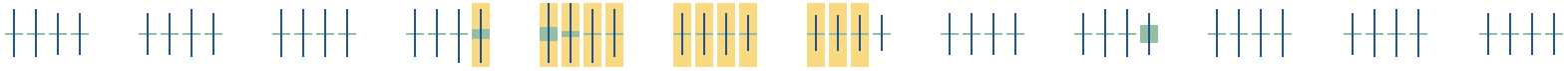
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



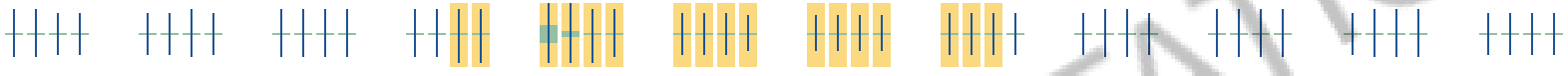
Cerulean Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Dunlin
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

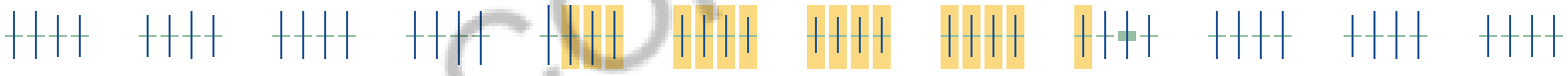
Evening Grosbeak
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Kentucky Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

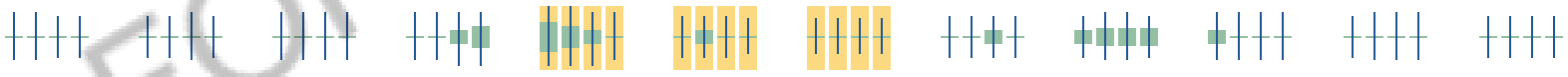


Lesser Yellowlegs
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nelson's Sparrow
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Prothonotary Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Red-headed Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

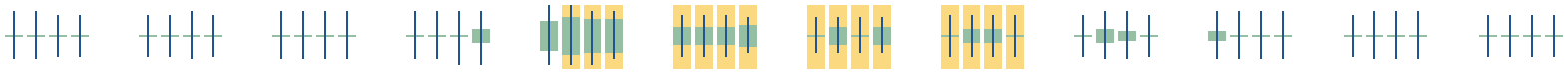
Red-throated Loon
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rusty Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Semipalmated Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Snowy Owl
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

LAKE

L1UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX F

Copies of BWSC and DCR Permit Applications

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129
617.886.7400

26 November 2019
File No. 128513-008

Boston Water and Sewer Commission
Engineering Customer Services
900 Harrison Avenue
Boston, MA 02119

Attention: Matthew Tuttle

Subject: Request for Approval of Temporary Construction Dewatering
Soldiers Field Park Renovations - Phase IV
Building 1
640 Soldiers Field Road
Allston, Massachusetts

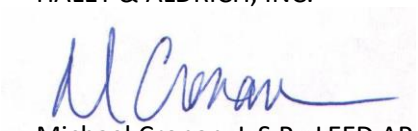
Dear Mr. Tuttle:

On behalf of our client, Harvard University Housing c/o Northstar Project and Real Estate Services, this letter submits the Dewatering Discharge Permit Application in support of the planned Soldiers Field Park Renovations – Phase IV Building 1 project located at 640 Soldiers Field Road in Allston.

Dewatering is necessary to enable construction in-the-dry and is anticipated to begin in January 2020 and continue for up to 13 months. Prior to discharge, collected water will be routed through a fractionation tank and bag filters (5-micron) to remove suspended solids and undissolved chemical constituents. Other pre-treatment may be conducted as necessary to comply with NPDES discharge criteria. The site location is shown on Figures 1 and 2, and the proposed dewatering discharge route and BWSC outfall location are shown on Figure 3.

A Notice of Intent to discharge under the 2017 NPDES Remediation General Permit (RGP) has been submitted to the Environmental Protection Agency (EPA). A copy of the submitted application is attached. If you have any questions, please feel free to contact the undersigned at 617-886-7477.

Sincerely yours,
HALEY & ALDRICH, INC.



Michael Cronan, L.S.P., LEED AP
Associate | Senior Project Manager

Attachments:

- Dewatering Discharge Permit Application
- Figure 1 – Project Locus
- Figure 2 – Site and Subsurface Exploration Location Plan
- Figure 3 – Proposed Discharge Routes
- Copy of NPDES RGP Application

G:\128513\008 SFP Phase 4 Environmental\NPDES RGP\Appendix F - BWSC and DCR Permits\2019-1126-HAI-SFP-BWSC Letter_F.docx

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Harvard University Housing Address: 1350 MASSACHUSETTS AVE

Phone Number: (617) 496-7827 Fax number: _____

Contact person name: Justin Stratman Title: Managing Director, Harvard University Housing

Cell number: (781) 413-5625 Email address: _____

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

Owner's Information (if different from above):

Owner of property being dewatered: _____

Owner's mailing address: _____ Phone number: _____

Location of Discharge & Proposed Treatment System(s):

Street number and name: 640 SOLDIERS FIELD ROAD Neighborhood ALLSTON

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

Describe Proposed Pre-Treatment System(s): SEDIMENTATION TANK AND BAG FILTERS

BWSC Outfall No. SDO01 Receiving Waters CHARLES RIVER

Temporary Discharges (Provide Anticipated Dates of Discharge): From 01/01/2020 To 01/31/2021

- ☐ Groundwater Remediation
- ☐ Utility/Manhole Pumping
- ☐ Accumulated Surface Water
- ☐ Tank Removal/Installation
- ☐ Test Pipe
- ☐ Hydrogeologic Testing
- ☐ Foundation Excavation
- ☐ Trench Excavation
- ☑ Other TEMPORARY CONSTRUCTION DEWATERING

Permanent Discharges

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

---

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

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

Signature of Authorized Representative for Property Owner: _____ Date: 11/26/19

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129
617.886.7400

26 November 2019
File No. 128513-008

Department of Conservation & Recreation
Permit Section
251 Causeway Street, Suite 600
Boston, MA 02114

Subject: Request for Approval of Temporary Construction Dewatering
Soldiers Field Park Renovations - Phase IV
Building 1
640 Soldiers Field Road
Allston, Massachusetts

Ladies and Gentlemen:

On behalf of our client, Harvard University Housing c/o Northstar Project and Real Estate Services, this letter submits the Permit Application for Construction for temporary construction dewatering in support of the planned Soldiers Field Park Renovations – Phase IV Building 1 project located at 640 Soldiers Field Road in Allston.

Dewatering is necessary to enable construction in-the-dry and is anticipated to begin in January 2020 and continue for up to 13 months. Prior to discharge, collected water will be routed through a fractionation tank and bag filters (5-micron) to remove suspended solids and undissolved chemical constituents. Other pre-treatment may be conducted as necessary to comply with NPDES discharge criteria. The site location is shown on Figures 1 and 2, and the proposed dewatering discharge route and BWSC outfall location are shown on Figure 3. We understand that the portion of the storm drainage piping located below the Charles River Reservation and adjacent to Soldiers Field Road is controlled by DCR. This letter and attached permit application seek permission to discharge dewatering effluent through these pipes.

A Notice of Intent to discharge under the 2017 NPDES Remediation General Permit (RGP) has been submitted to the Environmental Protection Agency (EPA). A copy of the submitted application is attached. If you have any questions, please feel free to contact the undersigned at 617-886-7477.

Sincerely yours,
HALEY & ALDRICH, INC.

Michael Cronan, L.S.P., LEED AP
Associate | Senior Project Manager

Attachments:

Permit Application for Construction and/or Associated Access to DCR Park Lands and Roadways
Figure 1 – Project Locus
Figure 2 – Site and Subsurface Exploration Location Plan
Figure 3 – Proposed Discharge Routes
Copy of NPDES RGP Application

G:\128513\008 SFP Phase 4 Environmental\NPDES RGP\Appendix F - BWSC and DCR Permits\2019-1126-HAI-SFP-DCR Letter_F.docx

dcr
Massachusetts
Department of Conservation & Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119

PERMIT APPLICATION FOR CONSTRUCTION &/OR ASSOCIATED ACCESS TO DCR PARK LANDS & ROADWAYS

Application DATE: 11/15/2019 Permit Requested by Harvard University Housing c/o Northstar Project & Real Estate Services
PROPOSED Construction Start Date: 1/2/2020 Completion Date: 1/31/2021 See next page for instructions.
PLEASE USE ADDITIONAL SHEETS AS NECESSARY

1. **PROJECT LOCATION:** Soldiers Field Park - Building 1 Address: Street 640 Soldiers Field Road
DCR Property: Charles River Reservation + DCR owned drain lines Town /City Allston

2. **PROJECT DESCRIPTION:** Attach a locus plan of the area + a minimum of 3 photos of the existing work location conditions, taken from different angles.
Temporary construction dewatering in support of the building renovations at Soldiers Field Park, Building 1. DCR-owned pipes below and near the Charles River Reservation will be used for discharge of construction dewatering effluent to the Charles River at the outfall shown on the attached plan.

3. **PROJECT IMPLEMENTATION INFORMATION: how** performed; implemented, within, and short term and long term impacts to DCR property. Submit one full size set of construction engineering plans (+ e-data) additional copies shall be submitted upon request .Either clearly mark drawings relevant to DCR property or remove all drawings not relevant to DCR.
The construction dewatering effluent from the Soldiers Field Park Building 1 work will be piped and directly discharged to BWSC 27" drain line located behind Soldiers Field Park which connects to a 36", then 42", then 30" DCR pipes under Soldiers Field Road to outfall SDO01. The proposed discharge route is shown on Figure 3. Refer to the attached EPA NPDES RGP permit application for proposed treatment of dewatering discharge.

4. TIME FRAME: Desired project start date & how long it will take to complete planning and construction
Project duration is estimated to run from January 2020 through January 2021.

5. AREA USED AND OR IMPACTED: Length width and depth of DCR area being used and or altered:
Dewatering effluent will be routed to the Charles River via catch basins and storm drains as shown on Figure 3. The proposed route includes storm drains owned by DCR.

6. DCR restricted **roadways access**: provide proposed travel route, schedule for roadway usage and vehicle proportions (**weight, height, & length**)
Not applicable

7. Material transportation and or temporary placement of equipment and/or vehicles (lay down area) on or over DCR property provide specifications on travel route and vehicle specifications (loaded weight and dimensions and Cargo description)
Not applicable

8. Traffic Management Plan (TMP) is required and shall conform to current Federal Highway Standards; certified by a Traffic Engineer or Traffic Control Technician. **please** submit a full size set (24"x36") copies; Not applicable ____ **# of pages/ plans attached**

9. Dig Safe # To be obtained

10. List OTHER PERMIT:& LICENSES Dewatering permit applications are being submitted to the EPA and BWSC simultaneously

11. Applicant Information (**Permit Signatory**, Proponent, Property Owner, Consultant, primary contact)

12. On site contact (Contractor, engineer, installer, utility, management co....):
X Check here if second signatory on permit.

Contact Name	Justin Stratman, Managing Director	Contact Name	Shawmut Design and Construction
Print Name	President & Fellows of Harvard College c/o Harvard	Print Name	Katie Gibbs
Corporate Title	University Housing	Corporate Title	Senior Project Manager
Mailing Address	1350 Massachusetts Avenue Cambridge, MA 02138	Mailing Address	560 Harrison Ave Boston MA 02118
Telephone #	781-413-5625	Telephone #	617-438-6144
Cell Phone #		Cell Phone #	
Fax #r		Fax #	
E- Mail		E- Mail	kgibbs@shawmut.com
*Signature		*Signature	

***Signature denotes acceptance of the conditions of the DCR Construction/Access Permit**

Return completed application; with the $50.00 application fee to:
DCR: PERMIT SECTION, 251 Causeway Street, 7th Fl. Boston, MA 02114, attn Construction/Access Permits

For Office Use Only Do Not Write Below This Line

Application #		Permit Issued		EIR-EOEA Cert		Stormwater	
Date received:		Plans returned;		Local Con Com		Water Resource	
App. complete		Revision submitted		Mass Historic		Gates	
		Permit Denied		TMP		Dams	
Fee amount		Paid date		Roadway const		St. Light	
Permit Writer		MEPA required		Planning		21E	

Instructions for Completing

Application for Construction &/or Associated Access Permit to DCR Park Lands & Roadways

General Information

M.G.L. C.132A§7, C.92§33, 801CMR11.06 and all other enabling powers grant DCR the authority to issue Construction and Access Permits.
Access is defined as:

I. Use by motor vehicles and/or construction equipment entry and/or exit to any DCR property including roads, parkway, parkland, structures and/or facility from abutting properties.

II. Any physical work (i.e. curb cuts, trench work, street openings) performed on under and or within DCR owned land including parklands, reservations, roadways, parkways…

Application, Mitigation and / or Restoration Fees

The non refundable **$50** Administrative Application Fee shall accompany this form. All check shall be payable to the Massachusetts, Department of Conservation and Recreation.

Include a minimum of 3 existing conditions photographs, taken from 3 or 4 angles, a locus plan of the area and a sketch which indicates lot size, DCR parkway frontage, proposed work location and details, property lines, building location(s), related to proposed physical work with respect to DCR Property baseline. Traffic Management Plan in accordance with current Federal Highway Administration MUTCD requirements. **All documents should be relevant to the work on DCR properties/issues**; if off the point information documents are included in the application package please clearly mark ALL relative information.

III. Application for all non-residential and residential developments greater than 5 units must include engineered access plans (minimum of 4 copies) at an appropriate scale (1 inch = 20 or 40 feet) which clearly show all proposed work and:

- DCR Property Layout line and baseline
- Location and dimensions of proposed work
- Location of existing structures, trees, and utilities
- Complete details of existing and proposed drainage.
- Information on over weight equipment and routes to access site

Please note: activities such as camping, or DCR park facilities use require a reservation, work related to Dam Safety and Water Supply issues are permitted by those sections, please see DCR web site at: http://www.mass.gov/dcr/

Specific Instructions (print or type)

Line 1 Project location: Name the DCR property or properties; Park and/or Parkway, plus specific location and municipality the access and/or construction is sought, address of work site.

Line 2 Project Description: Description of work to be done; Type of access sought, briefly describe facility for which access is sought. Ownership Plan showing property lines

Example 1: Single family residential driveway at 10 DCR Parkway (80' north of the intersection of X road) proposed drive frontage will be 12' wide.

Example 2: 500,000 s.f. shopping mall off of DCR XX parkway and Route XYZ in Anytown MA, bordering XXX Park; roadway geometry modified to accommodate left-turn lane, relocation of lights, traffic signals, remove and replace 15 mature trees, installation of drainage, & utilities (see plans, Environmental, Conservation Commission, MA Historical permits, Fish and Wildlife).

Line 3 Project Implementation and effects: Include DCR property impacts:
Temporary impacts + how they will be rectified
Permanent impacts – how they will be minimized
Environmental impacts (including copies of permits)
Flora and Fauna impacts and replacement plan
Short explanation of the need for the permit
Short description of the whole construction project
Specific details on all components, phases, construction schedule and Timelines that will directly impact DCR property.
Details on components of the job that will indirectly impact DCR property
Details on the project benefit to DCR, the public, and/or the community
(Attach additional sheets if necessary).

Mitigation (note Access and Excavation Fees will be charged: Mitigation in the form of improvement to the Project area may not amount to less than the total of the access and excavation fees)

Example 1: Remove 50 ft of existing granite curb on south side of Property to construct driveway access & modify the roadway geometry to accommodate left-turn lane. Three day project starting July 1, 20XX

Example 2: Excavate 10 x 10 ft section of roadway at Station 100+00 in westbound lanes in order to install residential water service to 100 DCR Parkway on heavily traveled roadway therefore permittee will provide 2 police details and use 4 days; plus additional signage.

Line 4 Time Frames: Planning, Design and Construction

Line 5 Usage Area: DCR property usage size (length and width) including excavation dimensions, sizes of components installed.

For projects with permanent installation: O&M requirements, duration and financial responsibility.

Line 6: DCR restricted roadways access

Line 7: Material transportation

Line 8: Traffic Management for motor vehicles, pedestrians, and bicycles in accordance with the most recent MUTCD

Submit a full size (24"x36") plan(s) certified by a Traffic Engineer or Traffic Control Technician.

1. Detours for motor vehicles, pedestrians, and bicycles.
2. Logistics and effects on: procurement, maintenance, and transportation …
   a. Items of concern – i.e. schools, playgrounds, handicapped children, and elderly housing

Line 9: Dig Safe # must be obtained by calling 1-888-DIG-SAFE.

Line 10: Other Permit & licenses: List all permits; including application dates and status; enclose 1 copies of each application/permit. Including DCR permits issued for this work location.

Line 11 & 12: Contact information for the applicant and or their contractors Proponent, Owner, Permittee name(s) must be the name of the person or entity responsible for funding the construction and/or the property or facility owner (other than DCR), for the construction activity being permitted: NOT an agent. Contact may be the owner's agent and may be an additional signatory.

Individual or business making application must complete the required information, including date of application and signature

- Contact names and business title(s)
- Addresses (location and E-mail)
- Phone numbers (office, cell, and fax)
- Name and title of the individual who will accept permit conditions for the permittee

Return completed permit application along with Fee

to: Director of Permits
Department of Conservation and Recreation ("DCR")
Permit Section, 251 Causeway Street, 7th Floor,
Boston, MA 02114

APPENDIX G

Best Management Practices Plan (BMPP)

APPENDIX G – BEST MANAGEMENT PRACTICES PLAN
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDIATION GENERAL PERMIT
630 SOLDIERS FIELD ROAD
ALLSTON, MASSACHUSETTS

Best Management Practices Plan

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering planned to occur during the construction of the proposed improvements located at Building 1 of Soldiers Field Road (640 Soldiers Field Road), Allston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time that temporary construction dewatering is occurring at the site.

Water Treatment and Management

Construction dewatering will be conducted using a combination of drainage ditches and sumps located inside the excavation. The treatment system has been designed by the Contractor. Prior to discharge, collected water will be routed through a sedimentation tank and bag filters, as required, to remove suspended solids and undissolved chemical constituents. The Proposed Treatment System Schematic is shown on Figure 4. Construction dewatering under this RGP NOI will include piping and discharging to storm drains located beneath and parallel to an unnamed service road immediately north of Building 1 trending to the east, and a concrete sidewalk located southeast and east of Building 1 trending to the northeast. The storm drains travel short distances east away from the site before discharging to the Charles River through outfall SDO01, as shown on Figure 3.

Discharge Monitoring and Compliance

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

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

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

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

System Maintenance

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

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

Miscellaneous Items

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

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

No adverse affects of designated water use of surrounding surface water bodies is anticipated. The Charles River is the nearest surface water body to the site located approximately 560-feet east of the site. Dewatering effluent will be pumped to a sedimentation tank, bag filters, and any other treatment components (as required), prior to discharge to the storm drains.

Management of Treatment System Materials

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

Sediment from the sedimentation tank used in the treatment system will be characterized and disposed of as soil at an appropriate receiving facility in accordance with applicable laws and regulations.