HALEY ALDRICH

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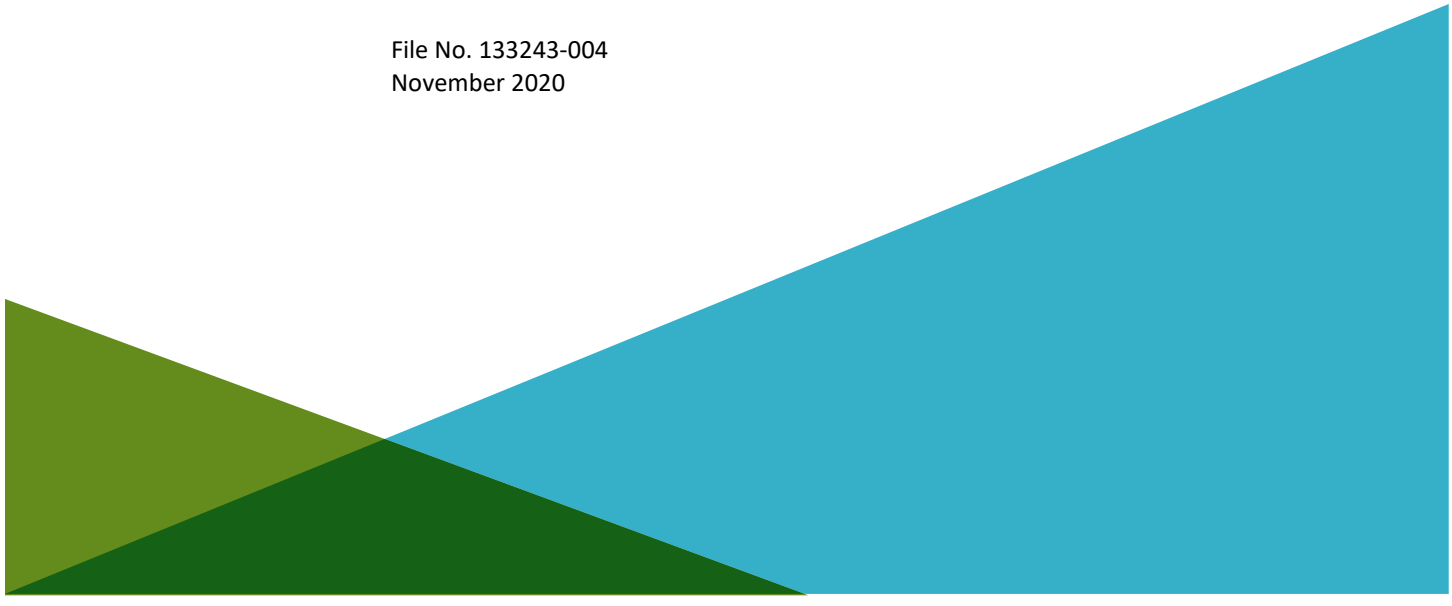
REPORT ON

NOTICE OF INTENT (NOI)
TEMPORARY CONSTRUCTION DEWATERING
BRIGHAM AND WOMEN'S FAULKNER HOSPITAL (BWFH)
BOSTON, MASSACHUSETTS

by
Haley & Aldrich, Inc.
Boston, Massachusetts

for
US Environmental Protection Agency
Boston, Massachusetts

File No. 133243-004
November 2020



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

19 November 2020
File No. 133243-004

US Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square – Suite 100 (OEP06-01)
Boston, Massachusetts 02109-3912

Attention: Shauna Little, EPA/OEP RGP Applications Coordinator

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Brigham and Women's Faulkner Hospital (BWFH)
1153 Centre Street
Boston, Massachusetts

Dear Ms. Little:

On behalf of our client, Brigham and Women's Faulkner Hospital (BWFH), this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for temporary construction site dewatering under the RGP. This letter was prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000. Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission to facilitate off-site discharge of temporary dewatering during construction activities at the BWFH project (the "site"), located at 1153 Centre Street, in Jamaica Plain, Massachusetts.

Construction dewatering effluent will be treated and discharged off-Site in accordance with a NPDES RGP. A copy of the Notice of Intent (NOI) is included in Appendix A.

SITE LOCATION AND HISTORICAL SITE USAGE

The site is located at 1153 Centre street in Jamaica Plain, Massachusetts. The site locus is shown on Figure 1. The site is comprised of two projects on either side of the BWFH hospital building, a rear garage development and an inpatient addition. The rear garage development is comprised of an approximately 1.5-acre portion of the site located at the rear of the existing hospital and is currently occupied by bituminous surface parking and a landscaped slope. The inpatient addition is comprised of an approximately 0.4-acre portion of the site located at the southwest corner of the existing hospital and includes landscaped areas, concrete walkways, a paved loading dock ramp, and rooftop mechanical equipment.

The southern portion of the site including the inpatient addition area and a section of the existing building was developed as residential property by 1874. The original hospital building was opened in 1903 and was partially located within the limits of proposed parking garage. The original hospital

structure was demolished in the early 1970's during the construction of the current hospital building. By 1978 the current hospital building was constructed.

PROPOSED CONSTRUCTION

The parking garage development consists of the construction of 3 above grade parking levels and 3 below grade parking levels (2 full below grade levels and one partial below grade level), as well as a structured roof over the southern third of the building. The extent of the lowest (B3) level will be limited to the center-third portion of the building footprint and will be finished at approximately El. 173.5 (BCB); the B2 level will require excavation throughout the entire footprint down to finished grade of approximately El. 184 (BCB). The below-grade limits correspond to an excavation depth ranging from approximately 20 ft to 60 ft below existing site grades, with the depth of excavation generally increasing from east to west as the garage cuts into the existing landscaped slope. The excavation will be positioned approximately 20 ft and 80 ft from the existing parking garage and hospital building, respectively.

The impatient addition development consists of the construction of a 5-story building addition along the southwest corner of the existing hospital. The proposed addition is planned with one basement level with floor at approximately El. 165.

Groundwater is expected to be encountered during below grade construction for both the parking garage and inpatient addition. The parking garage construction is scheduled before the impatient addition so the dewatering for the two portions of the site will not be operating at the same time. The groundwater levels within excavation areas should be lowered and maintained during construction to maintain a stable working platform and subgrade. Accordingly, dewatering will be required during excavation and during precipitation and stormwater events.

REGULATORY STATUS

Three Massachusetts Contingency Plan (MCP) Disposal Sites are located within the limits of the site. The Disposal sites are described below:

Release Tracking Number (RTN) 3-22926

In June 2017, the Massachusetts Department of Environmental Protection (MassDEP) was notified of a release following the identification of total petroleum hydrocarbons (TPH) in soil above RCS-1 reportable concentrations as part of a precharacterization program conducted for the construction of the parking garage. MassDEP assigned RTN 3-22926 to the release. A Release Abatement Measure (RAM) Plan was submitted to MassDEP, the objective of which was to abate the documented release of TPH to soil. Approximately 3,500 cy of petroleum impacted soil was disposed off-site. Confirmatory soil samples collected following excavation indicated petroleum constituents were below applicable Method 1 S-1/GW-2 and S-1/GW-3 criteria. Groundwater samples collected did not detect petroleum constituents or VOCs, and accordingly groundwater was not part of the Disposal Site (RTN 3-22926).

A RAM Completion Statement and a Class A-2 Response Action Outcome (RAO) Statement were submitted to MassDEP in February 2004.

RTN 3-34345

In June 2017, the MassDEP was notified of a release following a photoionized detector (PID) measurement of greater than 100 parts per million by volume (ppmv) during the removal of two 20,000-gallon fuel oil underground storage tanks (USTs) installed in 1976. MassDEP assigned RTN 3-34345 to the release. Immediate Response Actions (IRA) were conducted and included the removal of fuel oil impacted soil, disposal of contaminated groundwater, and completion of additional assessment activities. Confirmatory soil samples did not detect the presence of petroleum constituents in soil and groundwater following completion of IRA response actions.

Based on the results of a Method 1 Risk Characterization, a Permanent Solution Statement with No Conditions was submitted to MassDEP in October 2017.

RTN 3-36281

In May 2020, the MassDEP was notified of a release following the identification of naphthalene, semi volatile organic compounds (SVOCs), TPH and lead in soil above reportable RCS-1 concentrations as part of a soil precharacterization program in the parking garage addition portion of the site. MassDEP assigned RTN 3-36281 to the release. Due to the release, soil management of the area will be conducted under a RAM Plan in accordance with the MCP, 310 CMR 40.0000.

GROUNDWATER QUALITY DATA

On 5 February 2020, a groundwater sample (HA20-REARGARAGE) was collected from the observation well B5(OW) located at the garage addition section of the property. On 7 February 2020, a groundwater sample (HA20-INPATIENT) was collected from the observation well B19-2(OW) on the inpatient addition section of the property. The samples were collected using a peristaltic pump. The samples were submitted to Alpha Analytical Laboratory (Alpha) of Westborough, MA, for chemical analysis of 2017 NPDES Remediation General Permit parameters including volatile organic compounds, semi-volatile organic compounds, polycyclic aromatic hydrocarbons, total metals, total petroleum hydrocarbons, pesticides, polychlorinated biphenyls, total suspended solids, chloride, total cyanide, total phenolics, and total residual chlorine.

Refer to Table I for a summary of groundwater analytical data. The recent groundwater analyses did not detect concentrations of chemical constituents above applicable Massachusetts Contingency Plan 2014 RCGW-1 reportable concentrations. Nonetheless, the construction dewatering effluent at the site will be managed under an RGP. The location of the observation wells B5 (OW) and B19-2(OW) are highlighted on Figures 2 and 3 respectively.

RECEIVING WATER QUALITY INFORMATION AND DILUTION FACTOR

On 5 February 2020, Haley & Aldrich collected a receiving water sample from a stream in Bussey Brook Meadow located southeast of the site. The location of the outfall sample is shown on Figure 5. The surface water sample was collected and submitted to Alpha for chemical analysis of metals, ammonia, and hardness. Field parameters, including pH and temperature, were collected from surface water at the location of the original sample on 10 September 2020. The results of water quality testing are summarized in Table I.

The pH and temperature readings collected in the field were used to calculate the site Water Quality Based Effluent Limitations (WQBELs). We have additionally confirmed with the MassDEP that the dilution factor for the receiving waters is 0 and confirmation is included in Appendix B.

EFFLUENT CRITERIA DETERMINATION

The EPA suggested WQBEL Calculation spreadsheet was used to calculate the effluent criteria for the site. Groundwater and Receiving Water data were input and the resulting criteria was tabulated in Appendix B. As requested by EPA, the Microsoft Excel spreadsheet for the WQBEL calculation will be submitted to the EPA via email, for their review upon submission of this NOI.

DEWATERING SYSTEM AND OFF-SITE DISCHARGE

During the remedial activities, it will be necessary to perform temporary dewatering to control surface water runoff from precipitation, groundwater seepage and construction-generated water to enable remedial excavations in-the-dry. Dewatering activities are anticipated to start in April 2021 and are anticipated to be required for up to 18 months. On average, we estimate effluent discharge rates of about 75 gallons per minute (gpm), with occasional peak flows of approximately 100 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located in excavations or from dewatering wells installed at the site.

Construction dewatering includes discharging to catch basins located on-site that discharge to Bussey Brook. The on-site discharge route from the catch basins to the edge of the property is shown on Figure 4 and the off-site discharge route into Bussey Brooke and outfall location are shown on Figure 5. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the site and is not being submitted with this NOI as requested by EPA.

DEWATERING TREATMENT SYSTEM INFORMATION

An effluent treatment system was designed by the contractor to meet the 2017 NPDES RGP Discharge Effluent Criteria. Prior to discharge, collected water is to be routed through a sedimentation tank and a bag filter and other necessary treatment components, to remove suspended solids and undissolved chemical constituents, as shown on Figure 4.

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, Planning, and Conservation (IPAC) online system; a copy of the determination is attached in Appendix C. IPAC indicated the presence of two wetlands but no listed endangered species. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A as no critical habitats have been established to be present within the project action area.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT 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), one historic property, Arnold Arboretum, National Register of Historic Places reference Number: 66000127, has been established to be present at the southeast section of the site on the inpatient addition section. While the discharge route shown on Figure 5, passes through the Arnold Arboretum, the planned treatment process, discharges and discharge-related activities are not considered to have the potential to impact this historic property. The discharge is considered to meet Criterion B. Documentation is included in Appendix D.

OWNER AND OPERATOR INFORMATION

Owner:
Brigham and Women's Faulkner Hospital
1153 Centre Street
Boston, MA 02130
Contact: Edward Pitts
Executive Director – Facilities & Support

Operator:
Turner Construction Company
2 Seaport Lane
Boston, MA 02210
Contact: Richard Parsons
Title: Construction Executive

APPENDICES

The completed "Suggested Notice of Intent" (NOI) form as provided in the RGP is enclosed in Appendix A. The site owner is Brigham and Women's Faulkner Hospital. Brigham and Women's Faulkner Hospital has hired Turner Construction Company as the general contractor conducting the site work, including dewatering activities. The excavation subcontractor will operate the dewatering system. Haley & Aldrich is monitoring the Contractor's dewatering activities on behalf of Brigham and Women's Faulkner Hospital in accordance with the requirements for this NOI submission. Calculations to determine the dilution factor and effluent criteria for the site as well as MassDEP confirmation for the dilution factor used is included in Appendix B.

Appendices C and D include the National Register of Historic Places and Endangered Species Act Documentation, respectively. Appendix E provides a copy of the Boston Water and Sewer Dewatering Permit Application letter. Copies of the groundwater testing laboratory data reports are provided in Appendix F. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the site and is not being submitted with this NOI as requested by EPA.

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

Liza Joyce
Engineer

Cole E. Worthy, LSP
Senior Associate

Attachments:

Table I – Summary of Groundwater Quality Data
Figure 1 – Site Locus
Figure 2 – Proposed Rear Garage Site and Subsurface Location Plan
Figure 3 – Proposed Inpatient Addition Site and Subsurface Location Plan
Figure 4 – Proposed On-Site Discharge Route
Figure 5 – Proposed Off-Site Discharge Route
Figure 6 – Proposed Treatment System Schematic
Appendix A – NOI for RGP
Appendix B – Discharge Calculations
Appendix C – Endangered Species Act Documentation
Appendix D – National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix E – BWSC Permit Application
Appendix F – Laboratory Data Reports

c: Edward Pitts, Brigham and Women's Faulkner Hospital

TABLE

TABLE I
SUMMARY OF WATER QUALITY DATA
1153 CENTRE STREET
BOSTON, MASSACHUSETTS
FILE NO. 133243-004

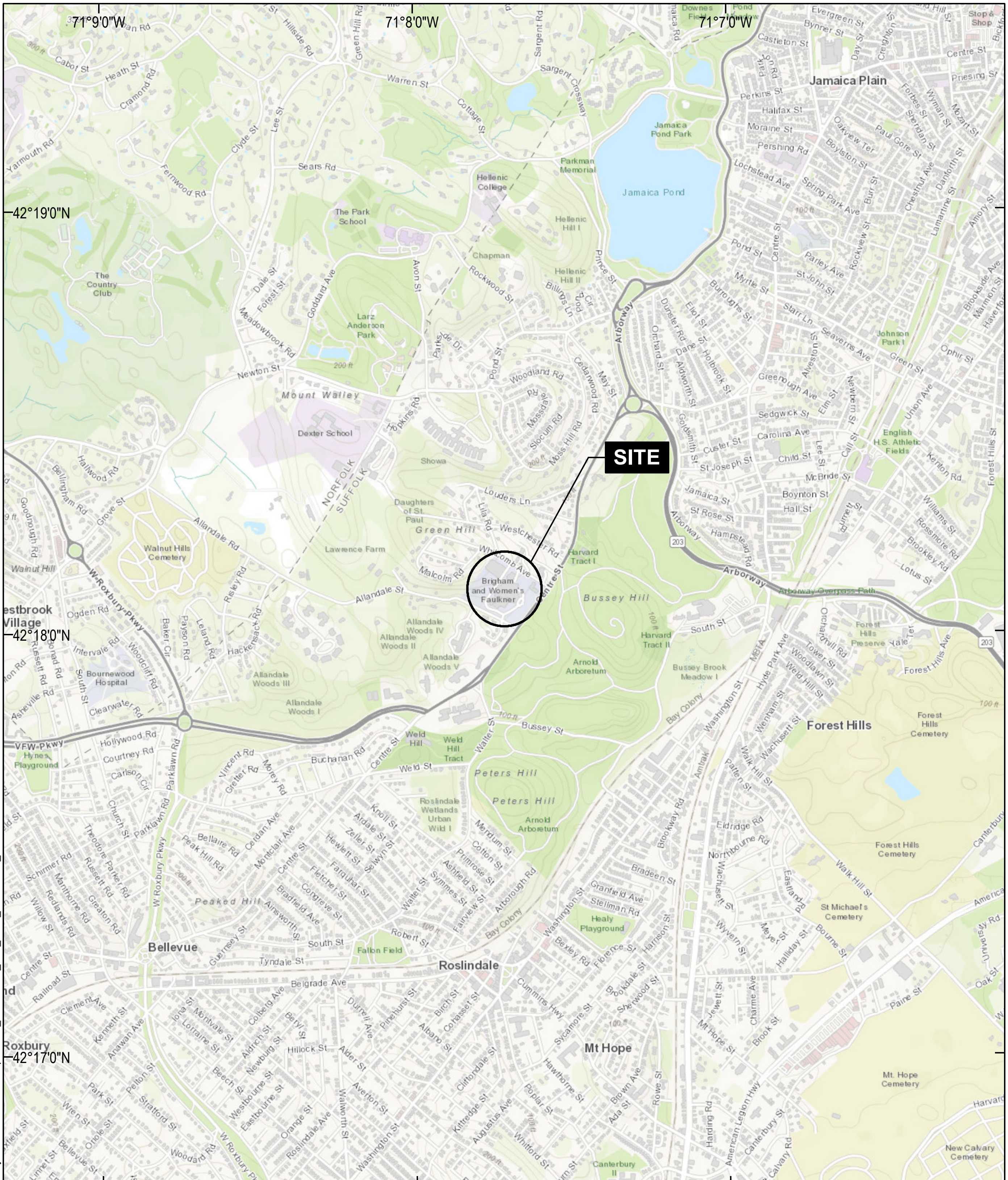
LOCATION			SOURCE WATER		REVEIVING WATER
SAMPLE NAME	2017 NPDES RGP Estimated Site-Specific Criteria	MCP RCGW-2 2014 Reportable Concentrations	HA20-INPATIENT-02072020	HA20-REARGARAGE-02052020	HA20-OUTFALL-02052020
SAMPLING DATE			2/7/2020	2/5/2020	2/5/2020
LAB SAMPLE ID			L2005847-01	L2005306-01	L2005306-02
SAMPLE TYPE			WATER	WATER	WATER
Volatile Organics (µg/l)					
1,1,1-Trichloroethane	200	4000	ND(2)	ND(2)	-
1,1,2-Trichloroethane	5	900	ND(1.5)	ND(1.5)	-
1,1-Dichloroethane	70	2000	ND(1.5)	ND(1.5)	-
1,1-Dichloroethene	3.2	80	ND(1)	ND(1)	-
1,2-Dichlorobenzene	600	2000	ND(5)	ND(5)	-
1,2-Dichloroethane	5	5	ND(1.5)	ND(1.5)	-
1,3-Dichlorobenzene	320	6000	ND(5)	ND(5)	-
1,4-Dichlorobenzene	5	60	ND(5)	ND(5)	-
Acetone	7970	50000	ND(10)	ND(10)	-
Benzene	5	1000	ND(1)	ND(1)	-
Carbon tetrachloride	4.4	2	ND(1)	ND(1)	-
cis-1,2-Dichloroethene	70	20	ND(1)	ND(1)	-
Ethylbenzene	100	5000	ND(1)	ND(1)	-
Methyl tert butyl ether	70	5000	ND(10)	ND(10)	-
Methylene chloride	4.6	2000	ND(1)	ND(1)	-
o-xylene	NA	3000	ND(1)	ND(1)	-
p/m-Xylene	NA	3000	ND(2)	ND(2)	-
Tert-Butyl Alcohol	120	NA	ND(100)	ND(100)	-
Tertiary-Amyl Methyl Ether	90	NA	ND(20)	ND(20)	-
Tetrachloroethene	5	50	ND(1)	ND(1)	-
Toluene	100	40000	ND(1)	ND(1)	-
Trichloroethene	5	5	ND(1)	ND(1)	-
Vinyl chloride	2	2	ND(1)	ND(1)	-
Xylenes, Total	100	3000	ND(1)	ND(1)	-
Total BTEX	100	NA	ND	ND	-
SUM of Volatile Organic Compounds	NA	NA	NA	NA	-
Volatile Organics by SIM (µg/l)					
1,4-Dioxane	200	6000	ND(50)	ND(50)	-
Semivolatile Organics (µg/l)					
Bis(2-ethylhexyl)phthalate	101	50000	ND(2.2)	ND(2.2)	-
Butyl benzyl phthalate	NA	10000	ND(5)	ND(5)	-
Di-n-butylphthalate	NA	5000	ND(5)	ND(5)	-
Di-n-octylphthalate	NA	100000	ND(5)	ND(5)	-
Diethyl phthalate	101	9000	ND(5)	ND(5)	-
Dimethyl phthalate	NA	50000	ND(5)	ND(5)	-
Total Phthalates	190	NA	ND	ND	-
Pentachlorophenol	1	200	ND(1)	ND(1)	-
Phenol	1080	2	ND(30)	ND(30)	-
SUM of Semivolatile Organic Compounds	NA	NA	ND	ND	-
Semivolatile Organics by SIM (µg/l)					
Acenaphthene	Group II PAHs	10000	ND(0.1)	ND(0.1)	-
Acenaphthylene	Group II PAHs	40	ND(0.1)	ND(0.1)	-
Anthracene	Group II PAHs	30	ND(0.1)	ND(0.1)	-
Benzo(a)anthracene	1	1000	ND(0.1)	ND(0.1)	-
Benzo(a)pyrene	1	500	ND(0.1)	ND(0.1)	-
Benzo(b)fluoranthene	1	400	ND(0.1)	ND(0.1)	-
Benzo(ghi)perylene	Group II PAHs	20	ND(0.1)	ND(0.1)	-
Benzo(k)fluoranthene	1	100	ND(0.1)	ND(0.1)	-
Chrysene	1	70	ND(0.1)	ND(0.1)	-
Dibenzo(a,h)anthracene	1	40	ND(0.1)	ND(0.1)	-
Fluoranthene	Group II PAHs	200	ND(0.1)	ND(0.1)	-
Fluorene	Group II PAHs	40	ND(0.1)	ND(0.1)	-
Indeno(1,2,3-cd)pyrene	1	100	ND(0.1)	ND(0.1)	-
Naphthalene	20	700	ND(0.1)	ND(0.1)	-
Phenanthrene	Group II PAHs	10000	ND(0.1)	ND(0.1)	-
Pyrene	Group II PAHs	20	ND(0.1)	ND(0.1)	-
SUM of Group I PAHs	1	NA	ND	ND	-
SUM of Group II PAHs	100	NA	ND	ND	-
SUM of Semivolatile Organic Compounds (SIM)	NA	NA	ND	ND	-
Total Petroleum Hydrocarbons (µg/l)					
TPH, SGT-HEM	5000	5000	ND(4000)	ND(4000)	-
Total Metals (µg/l)					
Antimony, Total	206	8000	ND(4)	ND(4)	ND(4)
Arsenic, Total	104	900	ND(1)	ND(1)	ND(1)
Cadmium, Total	10.2	4	0.48	ND(0.2)	ND(0.2)
Chromium, Total	NA	300	ND(1)	2.12	ND(1)
Copper, Total	242	100000	1.39	3.75	2.61
Iron, Total	5000	NA	104	952	64
Lead, Total	160	10	ND(1)	2.50	ND(1)
Mercury, Total	0.739	20	ND(0.2)	ND(0.2)	ND(0.2)
Nickel, Total	1450	200	11.68	2.55	ND(2)
Selenium, Total	235.8	100	ND(5)	ND(5)	ND(5)
Silver, Total	35.1	7	ND(0.4)	ND(0.4)	ND(0.4)
Zinc, Total	420	900	ND(10)	ND(10)	21.11
Polychlorinated Biphenyls (µg/l)					
Aroclor 1016	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1221	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1232	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1242	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1248	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1254	0.000064	5	ND(0.25)	ND(0.25)	-
Aroclor 1260	0.000064	5	ND(0.2)	ND(0.2)	-
Total PCBs	0.000064	5	ND	ND	-
Microextractables (µg/l)					
1,2-Dibromo-3-chloropropane	NA	1000	-	ND(0.01)	-
1,2-Dibromoethane (Ethylene Dibromide)	0.05	2	ND(0.01)	ND(0.01)	-
General Chemistry (µg/l)					
Chloride	Report	NA	920000	55900	-
Chlorine, Total Residual	11	NA	ND(20)	ND(20)	-
Chromium, Hexavalent	323	300	ND(10)	ND(10)	-
Chromium, Trivalent	323	600	ND(10)	ND(10)	-
Cyanide, Total	178000	30	ND(5)	ND(5)	-
Ethanol	Report	NA	ND(20000)	ND(20000)	-
Hardness	NA	NA	-	385000	91500
Nitrogen, Ammonia	Report	NA	99	ND(75)	103
pH (H)	NA	NA	6.1	7.4	6.45
Phenolics, Total	NA	NA	ND(30)	ND(30)	-
Total Suspended Solids	30000	NA	6200	41000	-

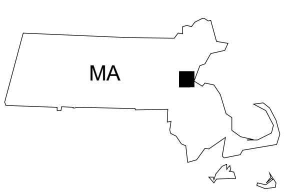
ABBREVIATIONS NOTES:

-- : Not analyzed
NA: Not Applicable
ug/l: micrograms per liter
SU: Standard Units
ND (2.5): Result not detected above reporting limit (shown in parentheses)

1. Analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
2. **Blue bold** values indicate an exceedance of the applicable site-specific 2017 RGP Criteria.

FIGURES





MAP SOURCE: ESRI
SITE COORDINATES: 42°18'06"N, 71°7'42"W

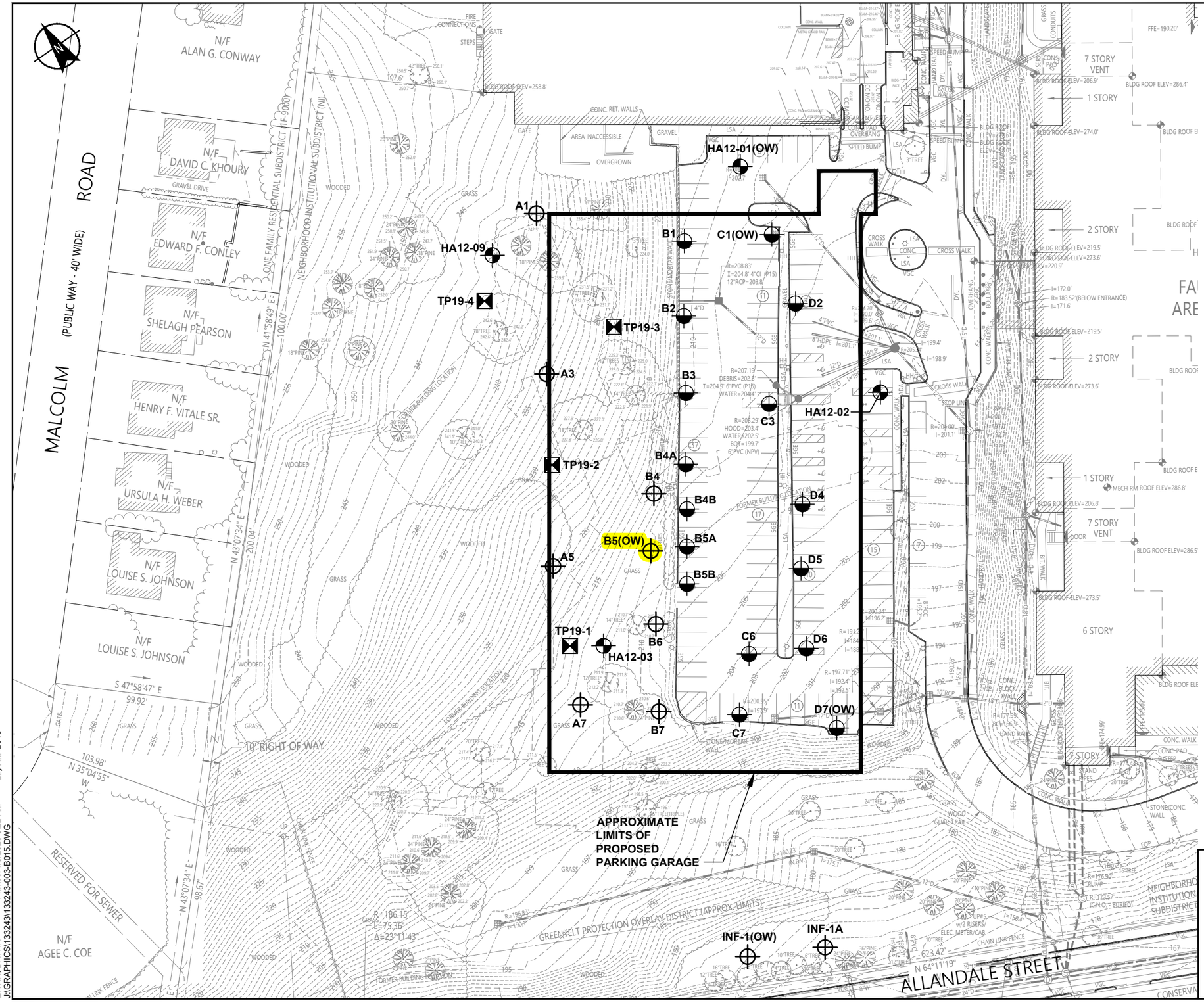
BRIGHAM AND WOMEN'S FAULKNER HOSPITAL
1153 CENTRE STREET
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
NOVEMBER 2020

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\133243\GIS\Maps\2020_01\133243_006_0001_PROJECT_LOCUS.mxd — USER: craumann — LAST SAVED: 1/9/2020 11:39:27 AM



LEGEND

B2	DESIGNATION AND LOCATION OF TEST BORING CONDUCTED BY NEW ENGLAND BORING CONTRACTORS AND MONITORED BY HALEY & ALDRICH, INC. IN DECEMBER 2019
A1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING CONDUCTED BY NEW ENGLAND BORING CONTRACTORS AND MONITORED BY HALEY & ALDRICH, INC. IN SEPTEMBER 2019
TP19-1	DESIGNATION AND APPROXIMATE OF TEST PIT CONDUCTED BY EARTHWORK INDUSTRIES AND MONITORED BY HALEY & ALDRICH, INC. ON 13 JUNE 2019.
HA12-02	DESIGNATION AND APPROXIMATE LOCATION OF EXPLORATORY TEST BORING PERFORMED BY GEOLOGIC/EARTH EXPLORATION OF NORFOLK, MASSACHUSETTS, BETWEEN 12 AND 26 JUNE 2012, AND MONITORED BY HALEY & ALDRICH, INC. PERSONNEL.
(OW)	INDICATES OBSERVATION WELL WAS INSTALLED IN COMPLETED BOREHOLE

NOTES

1. BASE PLAN TAKEN FROM "Existing Conditions Plan of Land, SV-1," PREPARED BY VHB DATED 1 MARCH 2019.
2. ELEVATIONS REFERENCED TO BOSTON CITY BASE (BCB) DATUM.

0 60 120
SCALE IN FEET

HALEY ALDRICH

FAULKNER HOSPITAL
JAMAICA PLAIN, MASSACHUSETTS

PROPOSED PARKING GARAGE SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
NOVEMBER 2020

FIGURE 2

ERVIN, DAYNA Printed: 1/8/2020 8:22 AM Layout: B015
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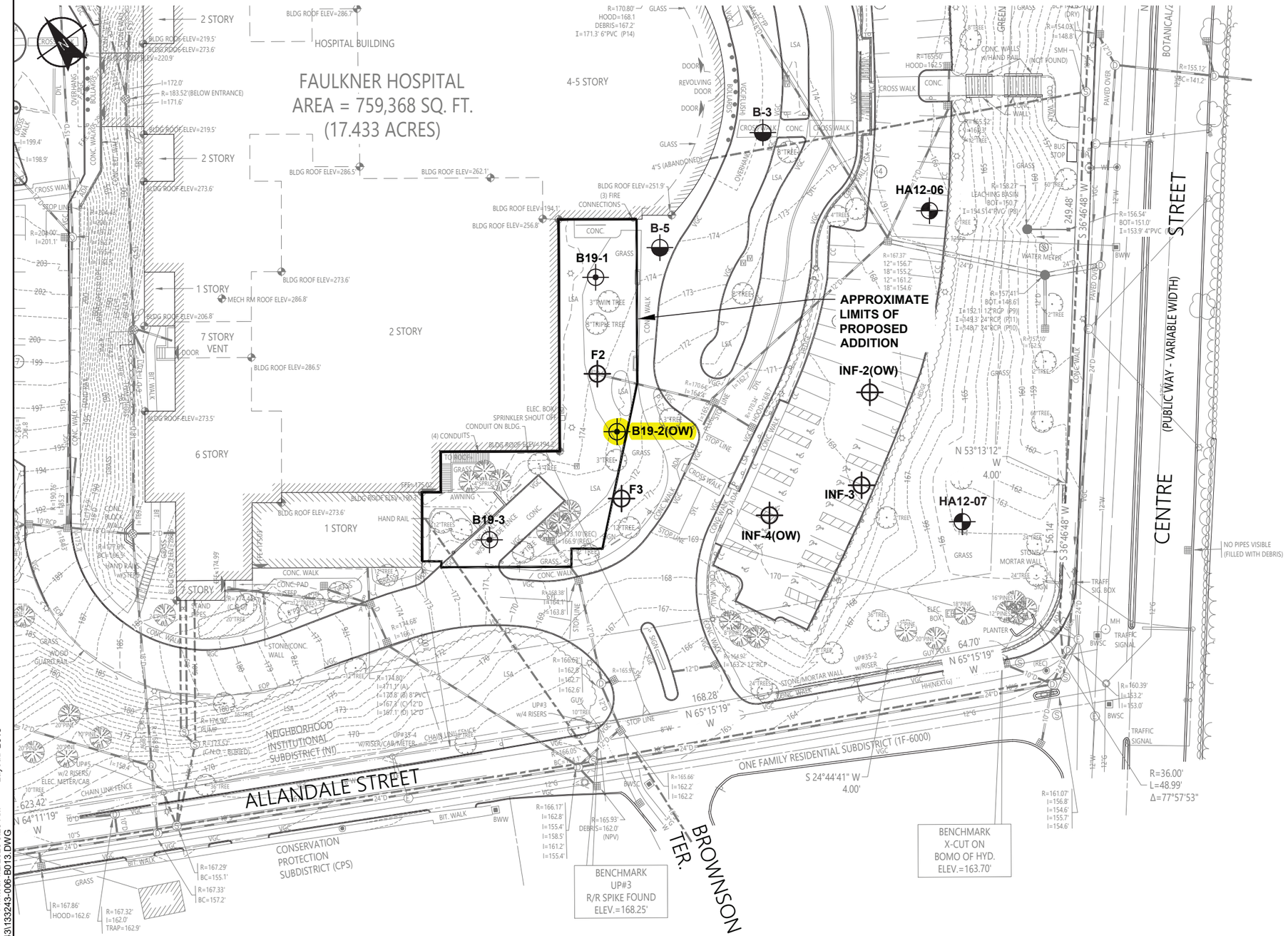

LEGEND

F2	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING CONDUCTED BY NEW ENGLAND BORING CONTRACTORS IN SEPTEMBER 2019 AND MONITORED BY HALEY & ALDRICH, INC.
HA12-06	DESIGNATION AND APPROXIMATE LOCATION OF EXPLORATORY TEST BORING PERFORMED BY GEOLOGIC/EARTH EXPLORATION OF NORFOLK, MASSACHUSETTS, BETWEEN 12 AND 26 JUNE 2012, AND MONITORED BY HALEY & ALDRICH, INC. PERSONNEL
B19-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING CONDUCTED BY NEW ENGLAND BORING CONTRACTORS AND MONITORED BY HALEY & ALDRICH, INC. BETWEEN 11 AND 12 JUNE 2019.
B-3	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING PERFORMED BY CARR-DEE DRILLING FOR MCPHAIL IN OCTOBER 1993, FOR NEW FAULKNER ENTRANCE.
(OW)	INDICATES OBSERVATION WELL WAS INSTALLED IN COMPLETED BOREHOLE

NOTES

1. BASE PLAN TAKEN FROM “Existing Conditions Plan of Land, SV-1,” PREPARED BY VHB DATED 1 MARCH 2019.
2. LIMITS OF PROPOSED BUILDING ADDITION TAKEN FROM ELECTRONIC FILE TITLED “BW FAULKNER- NBBJ-ARCH - Floor Plan - F1 SITE PLAN - ADDITION.dwg” PROVIDED BY NBBJ ON 8 JULY 2019.
3. ELEVATIONS REFERENCED TO BOSTON CITY BASE (BCB) DATUM.

0 60 120
SCALE IN FEET

HALEY ALDRICH

FAULKNER HOSPITAL
JAMAICA PLAIN, MASSACHUSETTS

PROPOSED INPATIENT ADDITION SITE AND SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
NOVEMBER 2020

FIGURE 3

ERVIN, DAYNA Printed: 1/2/2020 9:20 AM Layout: B013
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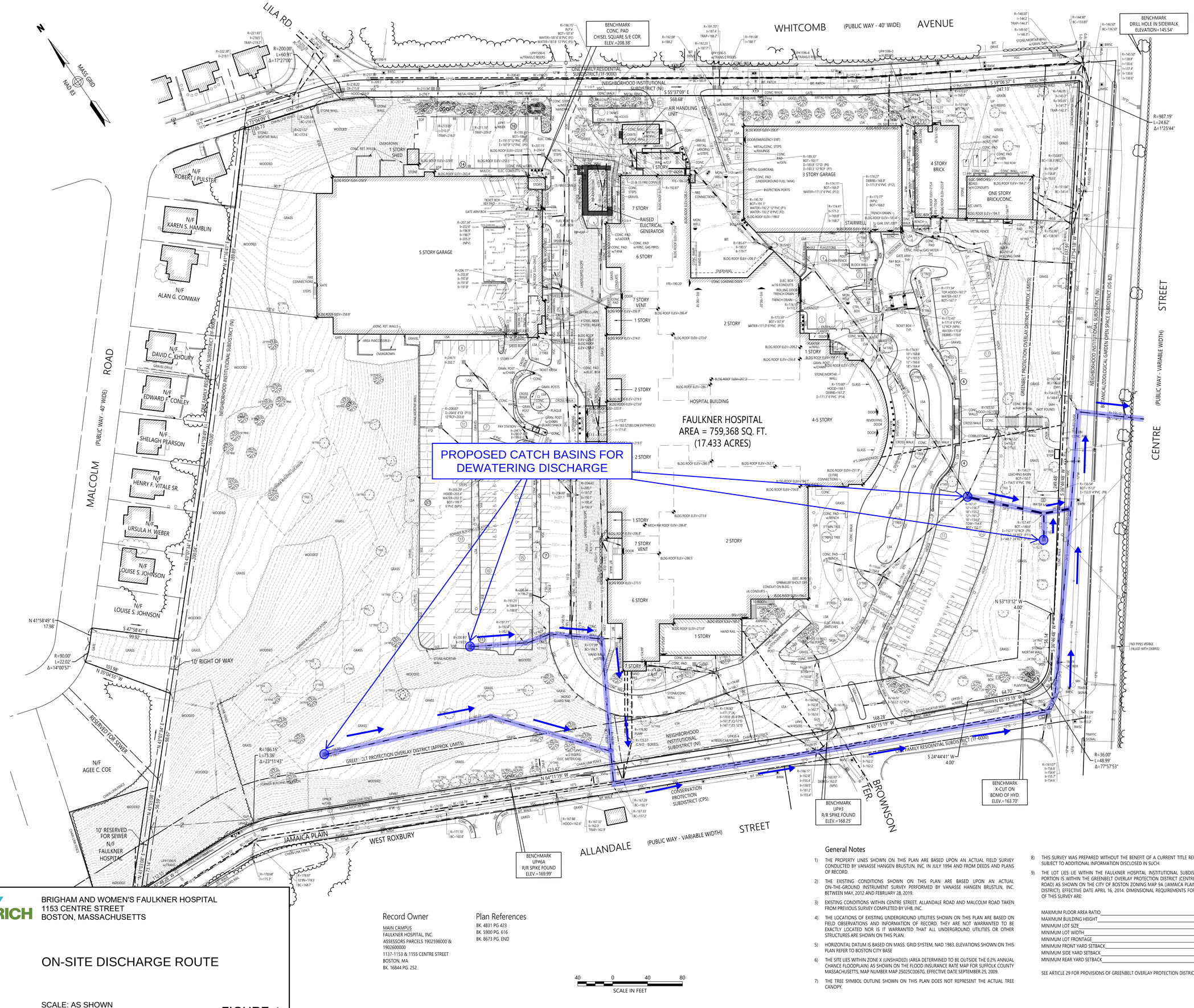

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Legend

Ⓓ	DRAIN MANHOLE
▦	CATCH BASIN
Ⓢ	SEWER MANHOLE
Ⓔ	ELECTRIC MANHOLE
Ⓣ	TELEPHONE MANHOLE
⊙	MANHOLE
HH □	HANDHOLE
◉	WATER GATE
	FIRE HYDRANT
◎	GAS GATE
	BOLLARD w/LIGHT
	STREET SIGN
☼	LIGHT POLE
	UTILITY POLE
○—	GUY POLE
	GUY WIRE
◒	MONITORING WELL
▶	FLOOD LIGHT
Ⓦ	WELL
	MARSH
◀	DOOR/ENTRANCE
FFE	FINISHED FLOOR ELEVATION
CNO	COULD NOT OPEN
NPV	NO PIPES VISIBLE
DYL	DOUBLE YELLOW LINE
DWL	DASHED WHITE LINE
SYL	SINGLE WHITE LINE
LSA	LANDSCAPED AREA
EOP	EDGE OF PAVEMENT
CC	CONCRETE CURB
VGC	VERTICAL GRANITE CURB
SGE	SLOPED GRANITE EDGE
BB	BITUMINOUS BERM
BC	BITUMINOUS CURB
	METAL GUARDRAIL
	WOOD GUARDRAIL
	WOOD FENCE
	CHAIN LINK FENCE
	DRAINAGE LINE
	SEWER LINE
OHW	OVERHEAD WIRE
E	UNDERGROUND ELECTRIC
T	TELEPHONE LINE
G	GAS LINE
W	WATER LINE
	STONE WALL
	TREE LINE
100'BZ	100-FT BUFFER ZONE
100'RA	100-FT RIVER FRONT AREA
200'RA	200-FT RIVER FRONT AREA
AF1-100	LIMIT MEAN ANNUAL HIGH WATER
BF1-100	LIMIT OF BANK
WF1-100	VEGETATED WETLAND BOUNDARY
→	PROPOSED DISCHARGE ROUTE

Record Owner

MAIN CAMPUS
FAULKNER HOSPITAL, INC.
ASSESSORS PARCELS 1902598000 & 1902600000
1137-1153 & 1155 CENTRE STREET
BOSTON, MA
BK. 16844 PG. 252

Plan References

BK. 4831 PG 423
BK. 5900 PG. 616
BK. 8673 PG. END

General Notes

1) THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. IN JULY 1994 AND FROM DEEDS AND PLANS OF RECORD.

2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. BETWEEN MAY, 2012 AND FEBRUARY 28, 2019.

3) EXISTING CONDITIONS WITHIN CENTRE STREET, ALLANDALE ROAD AND MALCOLM ROAD TAKEN FROM PREVIOUS SURVEY COMPLETED BY VHB, INC.

4) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.

5) HORIZONTAL DATUM IS BASED ON MASS. GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO BOSTON CITY BASE

6) THE SITE LIES WITHIN ZONE X (UNSHADED) (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR SUFFOLK COUNTY MASSACHUSETTS, MAP NUMBER MAP 25025C0067G, EFFECTIVE DATE SEPTEMBER 25, 2009.

7) THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.

8) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

9) THE LOT LIES LIE WITHIN THE FAULKNER HOSPITAL INSTITUTIONAL SUBDISTRICT (NI) AND A PORTION IS WITHIN THE GREENBELT OVERLAY PROTECTION DISTRICT (CENTRE ST & ALLANDALE ROAD) AS SHOWN ON THE CITY OF BOSTON ZONING MAP 9A (JAMAICA PLAIN NEIGHBORHOOD DISTRICT), EFFECTIVE DATE APRIL 16, 2014. DIMENSIONAL REQUIREMENTS FOR (NI) AT THE TIME OF THIS SURVEY ARE:

	NI (FAULKNER)
MAXIMUM FLOOR AREA RATIO	0.6
MAXIMUM BUILDING HEIGHT	45 FEET
MINIMUM LOT SIZE	NONE
MINIMUM LOT WIDTH	NONE
MINIMUM LOT FRONTAGE	NONE
MINIMUM FRONT YARD SETBACK	20 FEET
MINIMUM SIDE YARD SETBACK	10 FEET
MINIMUM REAR YARD SETBACK	20 FEET

SEE ARTICLE 29 FOR PROVISIONS OF GREENBELT OVERLAY PROTECTION DISTRICT.

vhb.com

101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

Faulkner Hospital

1153 Centre Street
Jamaca Plain, Massachusetts

No.	Revision	Date	Appvd.
5	ADDITIONAL SURVEY/CONVERTED TO NAD83	3/1/19	CDKR
4	ADDITIONAL SURVEY	5/18/17	CDKR
3	GARAGE ENTRANCE/EXIT SURVEY	3/19/13	CDKR
2	APPROX. GREENBELT OVERLAY DISTRICT	10/31/12	CDKR
1	BUILDING ROOF ELEVATIONS & UPDATES	5/30/12	CDKR

Designed by
Checked by

Issued for
Date
May 14, 2012

Drawing Title
Existing Conditions Plan of Land

Drawing Number
Sv-1

Sheet 1 of 1

Project Number
14464.01

ERTSON Plotted Wednesday, March 27, 2019 3:10:34 PM Robertson, Craig

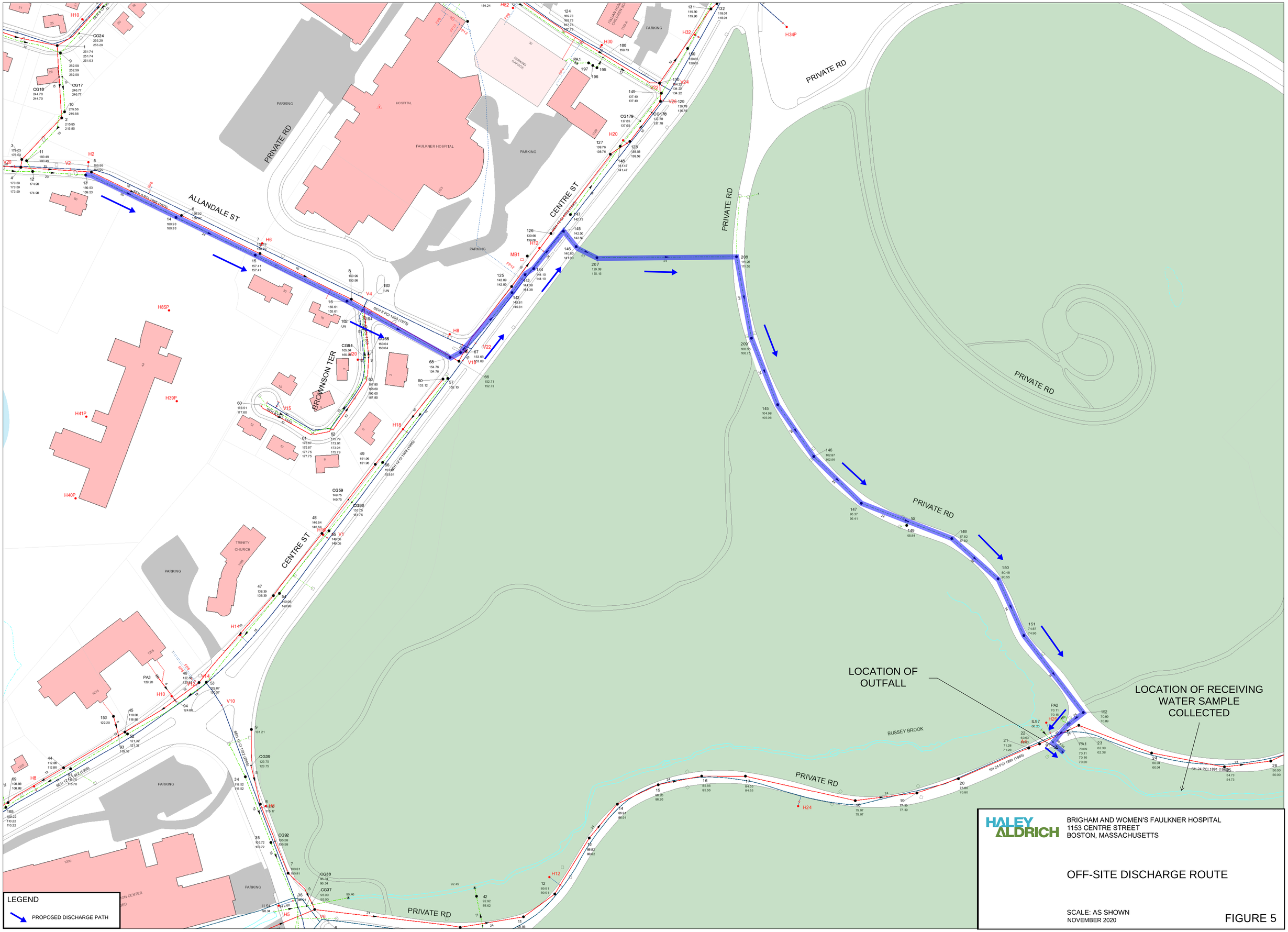
HALEY ALDRICH

BRIGHAM AND WOMEN'S FAULKNER HOSPITAL
1153 CENTRE STREET
BOSTON, MASSACHUSETTS

ON-SITE DISCHARGE ROUTE

SCALE: AS SHOWN
NOVEMBER 2020

FIGURE 4



LEGEND

🡖 PROPOSED DISCHARGE PATH

HALEY ALDRICH

BRIGHAM AND WOMEN'S FAULKNER HOSPITAL
1153 CENTRE STREET
BOSTON, MASSACHUSETTS

OFF-SITE DISCHARGE ROUTE

SCALE: AS SHOWN
NOVEMBER 2020

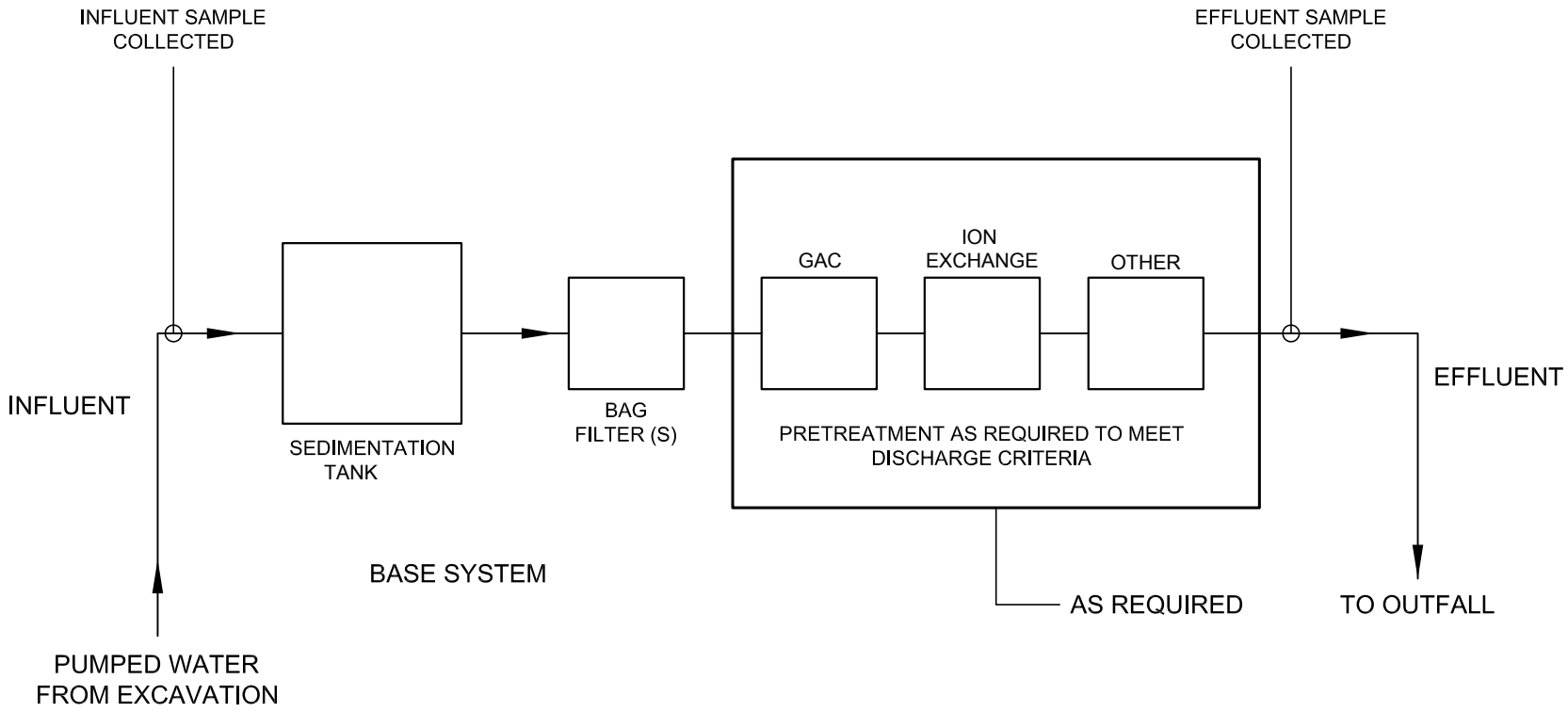
FIGURE 5

BOSTON WATER AND SEWER

N
W E
S

0 100 200 400 600 800
Feet

1153 Centre



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

FAULKNER HOSPITAL
1153 CENTRE STREET
BOSTON, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
NOVEMBER 2020

FIGURE 6

APPENDIX A

NOI for RGP

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:
Brighman and Women's Faulkner Hospital (BWFH)</td><td colspan="3">Site address: 1153 Centre Street
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02130</td></tr>
<tr><td rowspan="4">2. Site owner
Brigham and Women's Faulkner Hospital

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Edward Pitts</td></tr>
<tr><td colspan="2">Telephone: 617-983-7975</td><td>Email: epitts2@partners/com</td></tr>
<tr><td colspan="3">Mailing address: 1153 Centre Street
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02130</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
3-22926, 3-34345, 3-36281
☐ 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):
Bussey Brooke into Charles River	MA72-38	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. Yes; there are two TMDLs for this segment (pathogens and phosphorus)

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.	NA
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	0

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: See confirmation emails in Appendix G of the attached Haley & Aldrich Letter

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: seepage, precipitation, surface water runoff

2. Source water contaminants: NONE	
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): Bussey Brook (SDO11)	Outfall location(s): (Latitude, Longitude) 42.394,-71.049
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Pumping into catch basins, then travels in the subsurface drains into outfall at Bussey Brook ☐ 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 Dewatering Discharge Permit Application being submitted concurrently with this NOI Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): April 2021 to December 2022 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	2	121.4500	75	99	--	Report mg/L	---
Chloride		✓	2	44.330.0	5000	920000	--	Report µg/l	---
Total Residual Chlorine	✓		2	121.4500	20	<20	--	0.2 mg/L	11 ug/L
Total Suspended Solids		✓	2	121.2540	5000	41000	--	30 mg/L	---
Antimony	✓		2	3.200.8	4	<4	--	206 µg/L	NA
Arsenic	✓		2	3.200.8	1	<1	--	104 µg/L	NA
Cadmium		✓	2	3.200.8	0.2	0.48	--	10.2 µg/L	NA
Chromium III	✓		2	NA	10	10	--	323 µg/L	NA
Chromium VI	✓		2	1.7196A	10	<10	--	323 µg/L	NA
Copper		✓	2	3.200.8	1	3.75	--	242 µg/L	NA
Iron		✓	2	19.200.7	50	952	--	5,000 µg/L	NA
Lead		✓	2	3.200.8	1	2.5	--	160 µg/L	NA
Mercury	✓		2	3.245.1	0.2	<0.2	--	0.739 µg/L	NA
Nickel		✓	2	3.200.8	2	11.68	--	1,450 µg/L	NA
Selenium	✓		2	3.200.8	5	<5	--	235.8 µg/L	NA
Silver	✓		2	3.200.8	0.4	<0.4	--	35.1 µg/L	NA
Zinc	✓		2	3.200.8	10	<10	--	420 µg/L	NA
Cyanide	✓		2	121.4500	5	<5	--	178 mg/L	1.0 ug/L
B. Non-Halogenated VOCs									
Total BTEX	✓		2	128.624.1	2	<2	--	100 µg/L	---
Benzene	✓		2	128.624.1	1	<1	--	5.0 µg/L	---
1,4 Dioxane	✓		2	128.624.1	50	<50	--	200 µg/L	---
Acetone	✓		2	128.624.1	10	<10	--	7.97 mg/L	---
Phenol	✓		2	4.420.1	30	<30	--	1,080 µg/L	NA

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	✓		2	128.624.1	1	<1	--	4.4 µg/L	NA
1,2 Dichlorobenzene	✓		2	128.624.1	5	<5	--	600 µg/L	---
1,3 Dichlorobenzene	✓		2	128.624.1	5	<5	--	320 µg/L	---
1,4 Dichlorobenzene	✓		2	128.624.1	5	<5	--	5.0 µg/L	---
Total dichlorobenzene	✓		2	NA	5	<5	--	763 µg/L in NH	---
1,1 Dichloroethane	✓		2	128.624.1	1.5	<1.5	--	70 µg/L	---
1,2 Dichloroethane	✓		2	128.624.1	1.5	<1.5	--	5.0 µg/L	---
1,1 Dichloroethylene	✓		2	128.624.1	1	<1	--	3.2 µg/L	---
Ethylene Dibromide	✓		2	14.504.1	0.01	<0.01	--	0.05 µg/L	---
Methylene Chloride	✓		2	128.624.1	1	<1	--	4.6 µg/L	---
1,1,1 Trichloroethane	✓		2	128.624.1	2	<2	--	200 µg/L	---
1,1,2 Trichloroethane	✓		2	128.624.1	1.5	<1.5	--	5.0 µg/L	---
Trichloroethylene	✓		2	128.624.1	1	<1	--	5.0 µg/L	---
Tetrachloroethylene	✓		2	128.624.1	1	<1	--	5.0 µg/L	NA
cis-1,2 Dichloroethylene	✓		2	128.624.1	1	<1	--	70 µg/L	---
Vinyl Chloride	✓		2	128.624.1	1	<1	--	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		2	129.625.1	2.2	<2.2	--	190 µg/L	NA
Diethylhexyl phthalate	✓		2	129.625.1	5	<5	--	101 µg/L	NA
Total Group I PAHs	✓		2	129.625.1	0.1	<0.1	--	1.0 µg/L	---
Benzo(a)anthracene	✓		2	129.625.1	0.1	<0.1	--	As Total PAHs	NA
Benzo(a)pyrene	✓		2	129.625.1	0.1	<0.1	--		NA
Benzo(b)fluoranthene	✓		2	129.625.1	0.1	<0.1	--		NA
Benzo(k)fluoranthene	✓		2	129.625.1	0.1	<0.1	--		NA
Chrysene	✓		2	129.625.1	0.1	<0.1	--		NA
Dibenzo(a,h)anthracene	✓		2	129.625.1	0.1	<0.1	--		NA
Indeno(1,2,3-cd)pyrene	✓		2	129.625.1	0.1	<0.1	--		NA

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	✓		2	129.625.1	0.1	<0.1	--	100 µg/L	---
Naphthalene	✓		2	129.625.1	0.1	<0.1	--	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		2	127.608.3	0.2	<0.2	--	0.000064 µg/L	---
Pentachlorophenol	✓		2	129.625.1	1	<1	--	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		2	74.1664A	4000	<4000	--	5.0 mg/L	---
Ethanol	✓		2	1671A	20000	<20000	--	Report mg/L	---
Methyl-tert-Butyl Ether	✓		2	128.624.1	10	<10	--	70 µg/L	NA
tert-Butyl Alcohol	✓		2	128.624.1	100	<100	--	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		2	128.624.1	20	<20	--	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:									
Hardeness			1	19.200.7	660	385000	--		
pH			2	YSI	NA	7.4	--		

SEE DETECTIONS IN SOIL ON NEXT PAGE

DETECTIONS IN SOIL

Parameter	Known or believed present	Number of Samples
VOCs		
1,1,2,2-Tetrachloroethane	YES	116
2-Butanone (Methyl Ethyl Ketone)	YES	116
2-Phenylbutane (sec-Butylbenzene)	YES	116
Acetone	YES	116
Benzene	YES	116
Cymene (p-Isopropyltoluene)	YES	116
Naphthalene	YES	116
Tetrachloroethene	YES	116
Toluene	YES	116
SVOCs		
2-Methylnaphthalene	YES	116
Acenaphthene	YES	116
Acenaphthylene	YES	116
Anthracene	YES	116
Benzo(a)anthracene	YES	116
Benzo(a)pyrene	YES	116
Benzo(b)fluoranthene	YES	116
Benzo(g,h,i)perylene	YES	116
Benzo(k)fluoranthene	YES	116
bis(2-Ethylhexyl)phthalate	YES	116
Butyl benzylphthalate	YES	116
Chrysene	YES	116
Dibenz(a,h)anthracene	YES	116
Dibenzofuran	YES	116
Di-n-butylphthalate	YES	116
Di-n-octyl phthalate	YES	116
Fluoranthene	YES	116
Fluorene	YES	116
Indeno(1,2,3-cd)pyrene	YES	116
Naphthalene	YES	116
Phenanthrene	YES	116
Pyrene	YES	116

Parameter	Known or believed present	Number of Samples
Total Petroleum Hydrocarbons		
Petroleum Hydrocarbons	YES	116
Inorganic Compounds		
Antimony	YES	116
Arsenic	YES	116
Barium	YES	116
Beryllium	YES	116
Cadmium	YES	116
Chromium	YES	116
Lead	YES	116
Mercury	YES	116
Nickel	YES	116
Silver	YES	116
Vanadium	YES	116
Zinc	YES	116
PCBs		
Aroclor-1242 (PCB-1242)	YES	116
Aroclor-1248 (PCB-1248)	YES	116
Aroclor-1254 (PCB-1254)	YES	116
Aroclor-1260 (PCB-1260)	YES	116

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:
Other treatments to be applied as necessary to meet effluent limitations.

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Prior to discharge, collected water will be routed through sedimentation tank and bag filters with pH control. At a minimum, to remove suspended solids and undissolved chemical constituents and adjust pH to within limits established by permit. Total flow will be measured with flow meter/totalizator. Supplemental pretreatment may be required to meet NPDES RGP effluent limitations and may include oil/water separators and/or other components as required; refer to Figure 6 of the attached Haley & Aldrich NPDES RGP NOI Application.

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100 gpm
Provide the proposed maximum effluent flow in gpm.	100 gpm
Provide the average effluent flow in gpm.	75
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

Please refer to attached H&A letter.

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 permits will be implemented upon initiation of discharge and available for review at the site.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ☐ Not Required
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: 11/18/20
Print Name and Title:	Edward Pitts, Executive Director - Facilities & Support

APPENDIX B

Discharge Calculations

Enter number values in green boxes below

Enter values in the units specified

↓

0	Q_R = Enter upstream flow in **MGD**
0.108	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

0

Enter values in the units specified

↓

385	C_d = Enter influent hardness in **mg/L** $CaCO_3$
91.5	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

6.45	pH in **Standard Units**
17.5	Temperature in **^oC**
0.103	Ammonia in **mg/L**
91500	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**
2.61	Copper in **µg/L**
64	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
21.11	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓	
0	TRC in **µg/L**
99	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0.48	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
3.75	Copper in **µg/L**
952	Iron in **µg/L**
2.5	Lead in **µg/L**
0	Mercury in **µg/L**
11.68	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
0	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
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

I. Dilution Factor Calculation Method

A. 7Q10

Refer to Appendix V for determining critical low flow; must be approved by State before use in calculations.

B. Dilution Factor

Calculated as follows:

$$Df = \frac{Q_R + Q_P}{Q_P}$$

Q_R = 7Q10 in MGD

Q_P = Discharge flow, in MGD

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream hardness in mg/L

Q_d = Discharge flow in MGD

C_d = Discharge hardness in mg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) hardness in mg/L

Q_r = Downstream receiving water flow in MGD

Step 2. Total recoverable water quality criteria for hardness-dependent metals, calculated as follows:

Total Recoverable Criteria = $\exp\{m_c [\ln(h)] + b_c\}$

m_c = Pollutant-specific coefficient (m_a for silver)

b_c = Pollutant-specific coefficient (b_a for silver)

ln = Natural logarithm

h = Hardness calculated in Step 1

Step 3. Total recoverable water quality criteria for non-hardness-dependent metals, calculated as follows:

$$\text{WQC in } \mu g/L = \frac{\text{dissolved WQC in } \mu g/L}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

C_d = WQBEL in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as fc

$$C_r = \frac{Q_d C_d + Q_s C_s}{}$$

Q_r

C_r = Downstream concentration in µg/L

Q_d = Discharge flow in MGD

C_d = Influent concentration in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with St
and the discharge concentration of a parameter are greater than the WQC ca
that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, abov
the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL
of the RGP for that parameter applies.

Step 2. For a parameter not sampled in or not detected in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL de
that parameter in accordance with II.A or II.B, above;

AND

2) the WQBEL determined for that parameter in accordance with II.A or II.I
less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, t

Part 2.1.1 of the RGP for that parameter applies.

›llows:

:ep 1, above,
ılculated for

:e, is less than
, in Part 2.1.1

:etermined for

B, above is
the TBEL in

Dilution Factor	1.0			
	TBEL applies if bolded		WQBEL applies if bolded	
A. Inorganics				
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	0.2	mg/L	**11**	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	640	µg/L
Arsenic	**104**	µg/L	10	µg/L
Cadmium	**10.2**	µg/L	0.7347	µg/L
Chromium III	**323**	µg/L	260.0	µg/L
Chromium VI	**323**	µg/L	11.4	µg/L
Copper	**242**	µg/L	29.5	µg/L
Iron	**5000**	µg/L	1000	µg/L
Lead	**160**	µg/L	17.70	µg/L
Mercury	**0.739**	µg/L	0.91	µg/L
Nickel	**1450**	µg/L	163.2	µg/L
Selenium	**235.8**	µg/L	5.0	µg/L
Silver	**35.1**	µg/L	38.5	µg/L
Zinc	**420**	µg/L	375.5	µg/L
Cyanide	**178**	mg/L	5.2	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	300	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	1.6	µg/L
1,2 Dichlorobenzene	**600**	µg/L	---	
1,3 Dichlorobenzene	**320**	µg/L	---	
1,4 Dichlorobenzene	**5.0**	µg/L	---	
Total dichlorobenzene	**---**	µg/L	---	
1,1 Dichloroethane	**70**	µg/L	---	
1,2 Dichloroethane	**5.0**	µg/L	---	
1,1 Dichloroethylene	**3.2**	µg/L	---	
Ethylene Dibromide	**0.05**	µg/L	---	
Methylene Chloride	**4.6**	µg/L	---	
1,1,1 Trichloroethane	**200**	µg/L	---	
1,1,2 Trichloroethane	**5.0**	µg/L	---	
Trichloroethylene	**5.0**	µg/L	---	
Tetrachloroethylene	**5.0**	µg/L	3.3	µg/L

cis-1,2 Dichloroethylene	**70**	µg/L	---	
Vinyl Chloride	**2.0**	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	**190**	µg/L	---	µg/L
Diethylhexyl phthalate	**101**	µg/L	2.2	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L
Chrysene	**1.0**	µg/L	0.0038	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	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	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

Compliance Level applies if shown		
50	µg/L	
---	µg/L	

---	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L
---	µg/L

0.5	µg/L

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Tuesday, February 4, 2020 7:03 PM
To: Howard, Lindsey <LHoward@haleyaldrich.com>
Cc: 'Little, Shauna' <Little.Shauna@epa.gov>
Subject: RE: Faulkner Hospital Stormwater Discharge Info

CAUTION: External Email

Hi Lindsey,
I spoke to Shauna and we agreed that the proposed discharge to Bussey Brook in the Arnold Arboretum can be considered a discharge to a Water of the Commonwealth/Water of the US even though it is unnamed in MassGIS (but BWSC's map does identify it). MassGIS does list the brook as perennial and shows that it flows eastward and ends at a wetland. So you can go ahead with applying for coverage under the RGP as long as BWSC and the Boston ConCom don't have flooding concerns with this discharge to a brook that ends into a wetland.
Cathy

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

From: Howard, Lindsey [mailto:LHoward@haleyaldrich.com]
Sent: Friday, January 31, 2020 3:30 PM
To: Vakalopoulos, Catherine (DEP)
Subject: RE: Faulkner Hospital Stormwater Discharge Info

Thanks, Cathy!

Lindsey R. Howard, P.E. (NH)
Haley & Aldrich, Inc.
T: 617.886.7413
C: 603.702.1361

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Friday, January 31, 2020 2:49 PM

To: Howard, Lindsey <LHoward@haleyaldrich.com>
Subject: RE: Faulkner Hospital Stormwater Discharge Info

CAUTION: External Email

Hi Lindsey,
You're welcome. Here is a screen shot showing the flow lines and the dead end at the wetland as we discussed. It's interesting that the BWSC map shows the name "Bussey Brook" but that name doesn't show up on my layers in GIS. I do think this can be covered under the RGP with no dilution (as long as BWSC isn't worried about flooding the wetland) but will confer with Shauna and get back to you.
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: Howard, Lindsey [mailto:LHoward@haleyaldrich.com]
Sent: Friday, January 31, 2020 2:31 PM
To: Vakalopoulos, Catherine (DEP)
Subject: Faulkner Hospital Stormwater Discharge Info

Cathy –

Thank you for your help on tracking down info about this stormwater discharge in the Arnold Arboretum for the Faulkner Hospital project. As a follow up to our call, I've attached a map from BWSC that may be helpful. The outfall number they gave me is SDO11.

Thanks,
Lindsey

Lindsey R. Howard, P.E. (NH)
Senior Engineer

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

T: 617.886.7413
C: 603.702.1361
www.haleyaldrich.com

APPENDIX C

Endangered Species Act Documentation

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

IPaC resource list

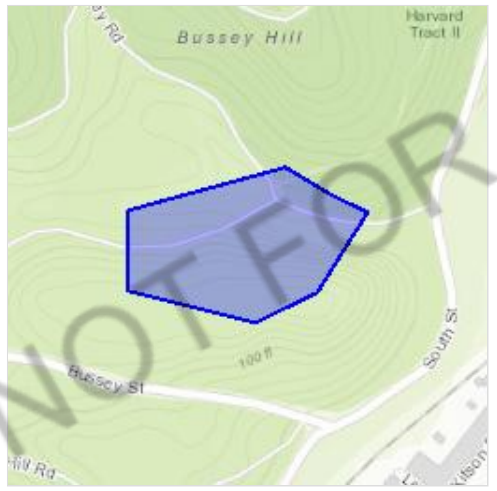
ECOS including IPaC will be unavailable starting at 17:00 until 22:00 MDT today for system maintenance. We apologize for any inconvenience this may cause.

This re habitat (collec jurisdi 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

Suffolk County, 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 — Breeds Oct 15 to Aug 31
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

Black-billed Cuckoo Coccyzus erythropthalmus — Breeds May 15 to Oct 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9399

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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

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

Long-eared Owl asio otus — 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/3631

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.

Ruddy Turnstone Arenaria interpres morinella — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

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.

Short-billed Dowitcher Limnodromus griseus — 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/9480

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

Whimbrel Numenius phaeopus — 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/9483

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5
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.

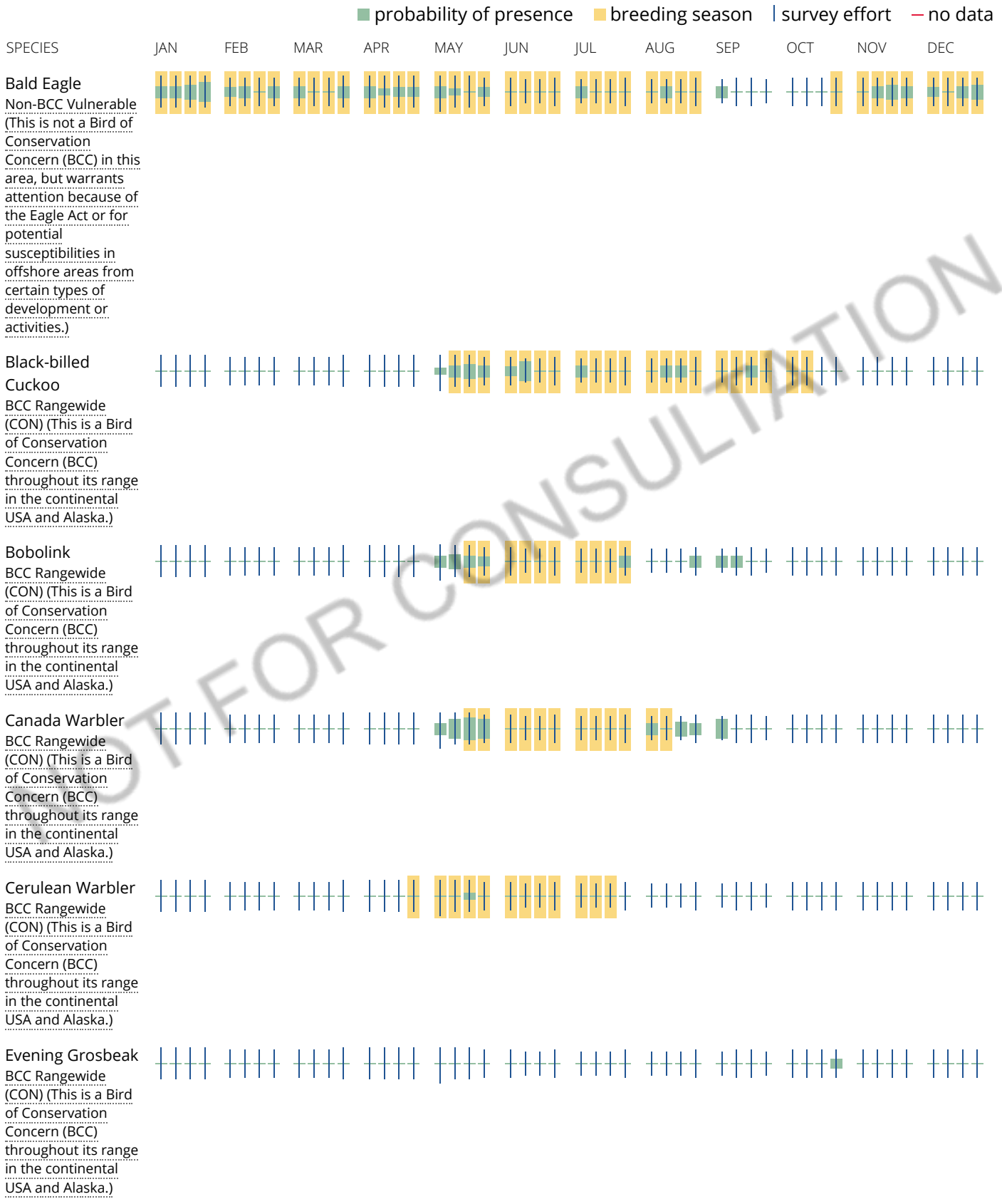
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.



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.)

Long-eared Owl
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.)

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.)

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

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.)

Short-billed Dowitcher
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.)

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

Willet
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:

RIVERINE

- R5UBH
- R2UBH

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.

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

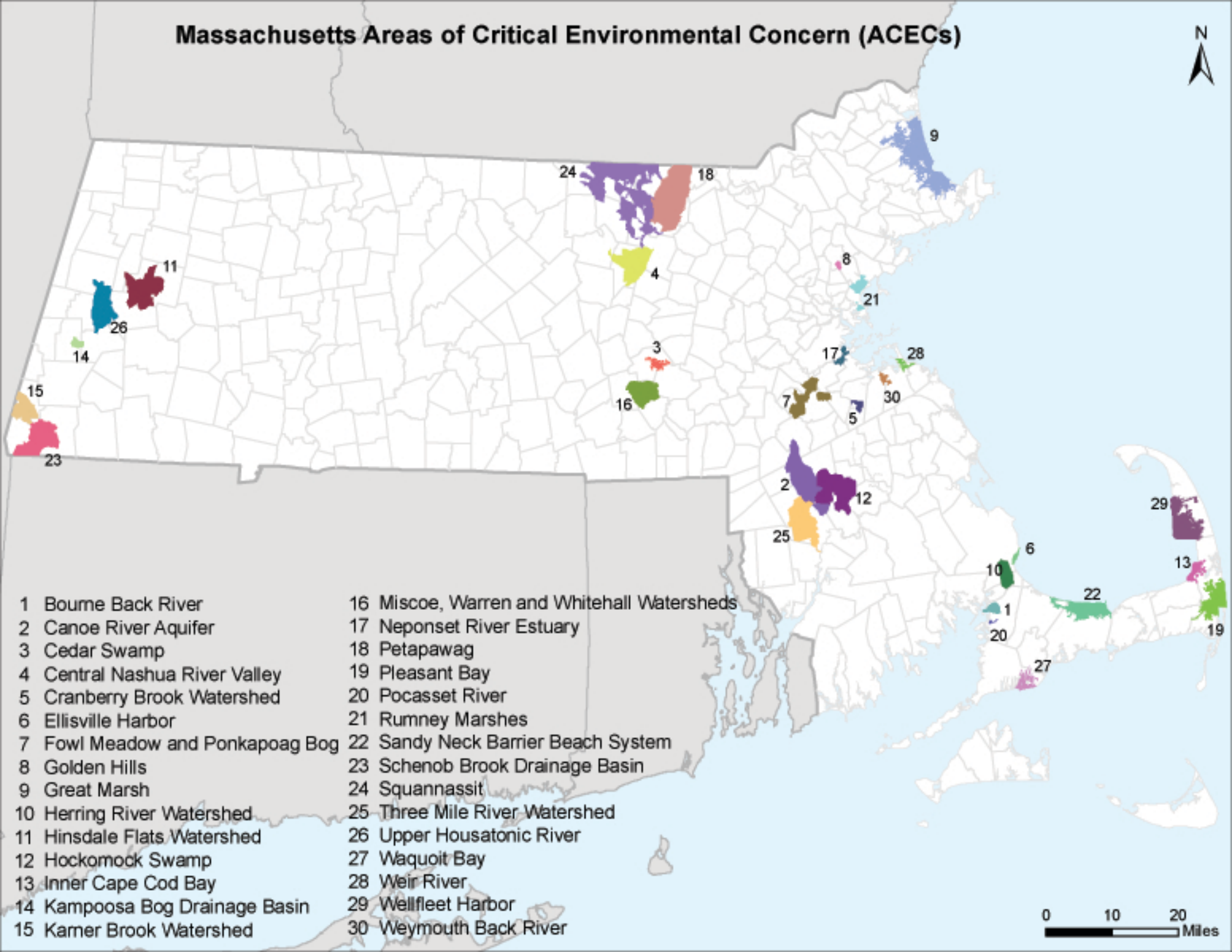
COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Updated 02/05/2016

Massachusetts Areas of Critical Environmental Concern (ACECs)



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

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

Towns with ACECs within their Boundaries — November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

.

MassDEP - Bureau of Waste Site Cleanup

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

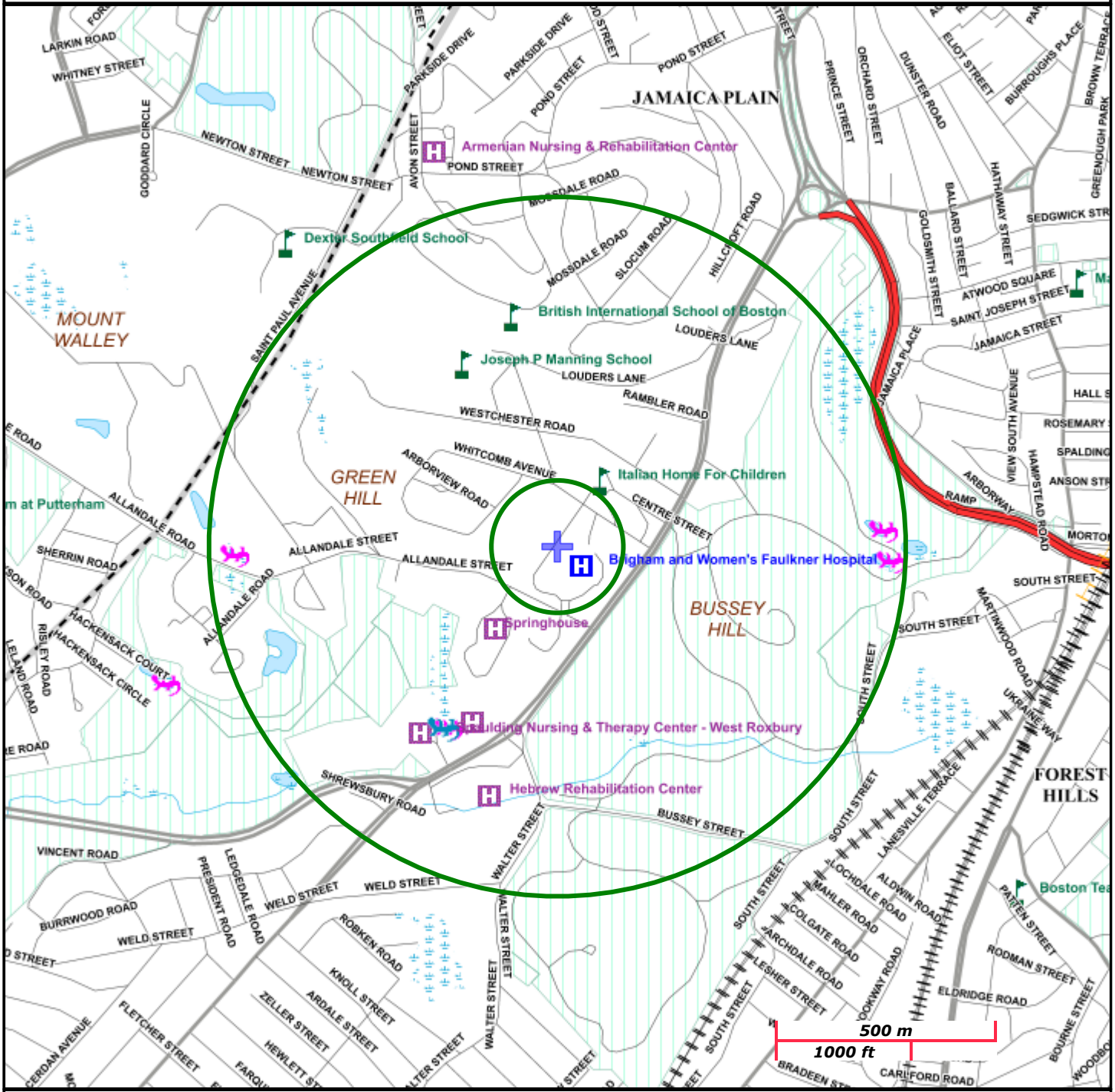
Site Information:

1153 CENTRE STREET BOSTON, MA

NAD83 UTM Meters:
4685484mN , 324525mE (Zone: 19)
September 23, 2020

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

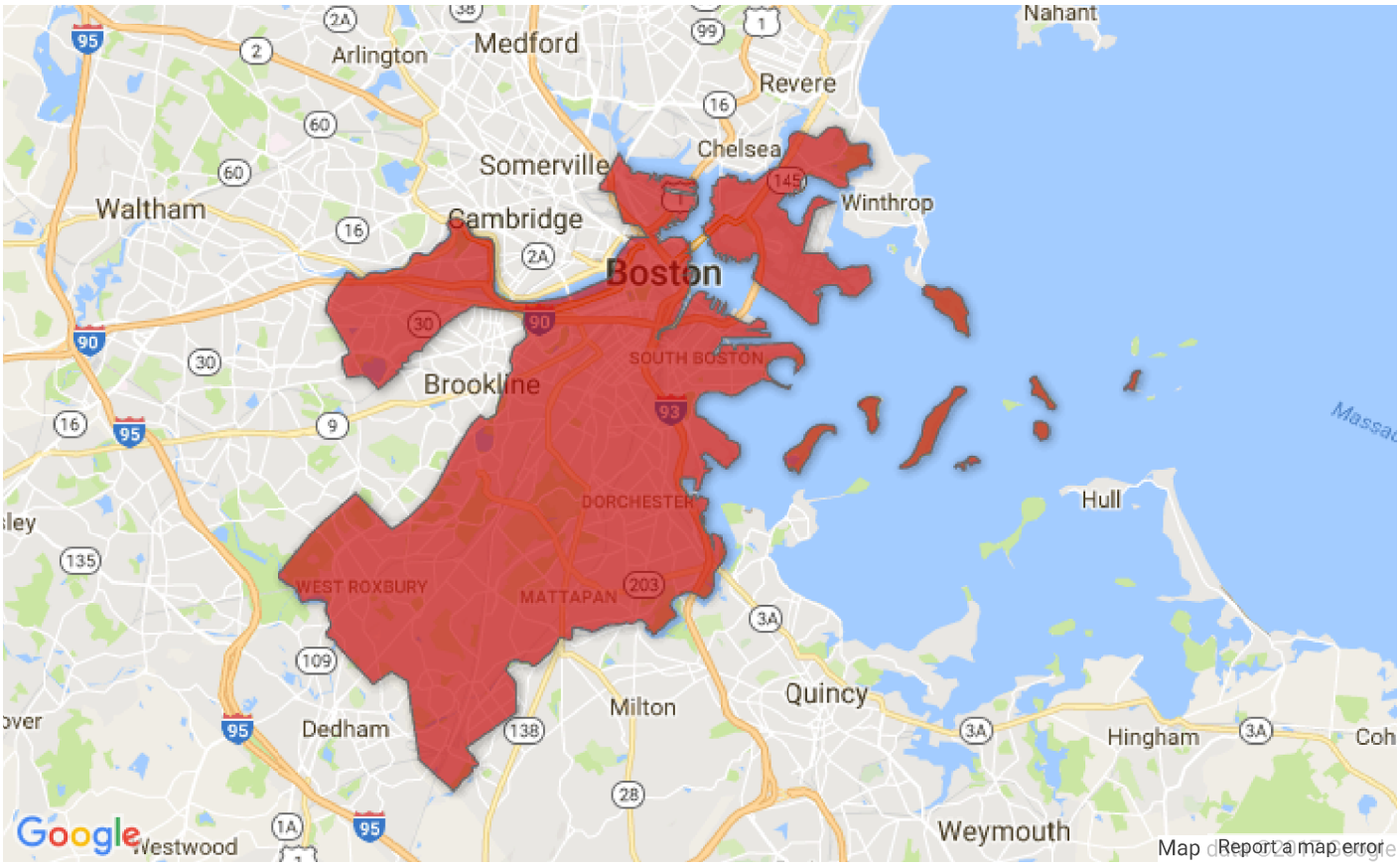
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

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

The Natural Heritage & Endangered Species Program maintains a list of all documented MESA-listed species observations in the Commonwealth. Please select a town if you would like to see a table showing which listed species have been observed in that town. The selected town will also be highlighted on the map. Alternatively you can specify either the Common Name or Scientific Name of a species to see it's distribution on the map and table showing the towns it has been observed in. Clicking on a column header in the table will sort the column. Clicking again on the same column heading will reverse the sort order.

The Town List and Species Viewer will be updated at regular intervals as new data is accepted and entered into the NHESP database.

Town: BOSTON or Species (Common Name): or Species (Scientific Name):



Showing 1 to 46 of 46 entries Search:

First Previous 1 Next Last

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC	2001
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E	1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	2015
BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T	1993
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E	Historic
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T	Historic
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T	1877

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T	1878
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E	1993
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T	1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E	Historic
BOSTON	Bird	Charadrius melodus	Piping Plover	T	2016
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC	1910
BOSTON	Beetle	Cicindela purpurea	Cow Path Tiger Beetle	SC	1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T	1927
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T	1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T	1885
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	T	2014
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T	2014
BOSTON	Bird	Gavia immer	Common Loon	SC	1824
BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E	1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC	1933
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC	1841
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T	1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E	1896
BOSTON	Vascular Plant	Malaxis unifolia	Green Adder's Mouth	T	1883
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis	E	1934
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E	Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T	1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T	1908
BOSTON	Bird	Pooecetes gramineus	Vesper Sparrow	T	1985
BOSTON	Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC	1988
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E	1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T	1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T	Historic
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T	1932
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T	1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC	2001
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC	2009
BOSTON	Bird	Sterna hirundo	Common Tern	SC	2013
BOSTON	Bird	Sternula antillarum	Least Tern	SC	2014
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC	1909
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC	1939
BOSTON	Bird	Tyto alba	Barn Owl	SC	1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E	Historic
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T	1909

Show 100 ▼ entries

Show Additional Info

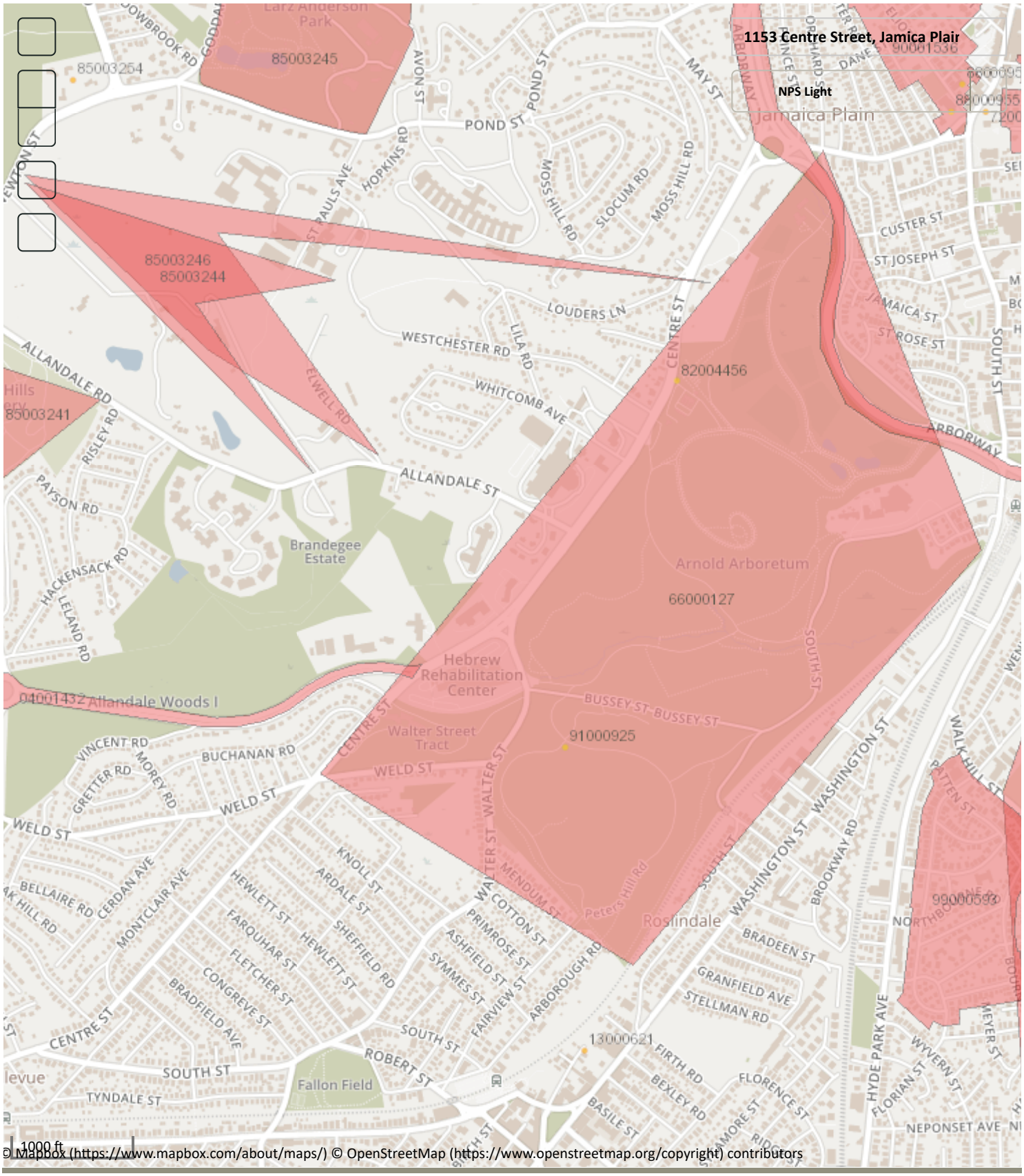
APPENDIX D

National Register of Historic Places and Massachusetts Historical Commission Documentation

National Register of Histori...

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data proce...



National Register of Historic Places: Listed Properties
As of July 2015

Note: Not all properties are digitized

Reference Number	State	County	City	Resource Name	Address	Listed Date	Text Click me	Photos Cl;ick me
83000601	MASSACHUSETTS	Suffolk	Boston	Charles Street African Methodist Episcopal Church	551 Warren St.	19830901	Text	Photos
83000602	MASSACHUSETTS	Suffolk	Boston	Codman Square District	Norfolk, Talbot, Epping, Lithgow, Cer	19830623	Text	Photos
83000603	MASSACHUSETTS	Suffolk	Boston	Gardner, Isabella Stewart, Museum	280 The Fenway	19830127	Text	Photos
83000605	MASSACHUSETTS	Suffolk	Boston	Harvard Avenue Fire Station	16 Harvard Ave.	19830331	Text	Photos
83000606	MASSACHUSETTS	Suffolk	Boston	Lawrence Model Lodging Houses	79, 89, 99 and 109 E. Canton St.	19830922	Text	Photos
83000607	MASSACHUSETTS	Suffolk	Boston	Newspaper Row	322-328 Washington St., 5-23 Milk St	19830707	Text	Photos
82000486	MASSACHUSETTS	Suffolk	Boston	Wigglesworth Building	89-83 Franklin St.	19821021	Text	Photos
83004098	MASSACHUSETTS	Suffolk	Boston	Leather District	Roughly bounded by Atlantic Ave., K	19831221	Text	Photos
83004285	MASSACHUSETTS	Suffolk	Boston	Baker, Sarah J., School	33 Perrin St.	19830707	Text	Photos
79000370	MASSACHUSETTS	Suffolk	Boston	Washington Street Theatre District	511-559 Washington St.	19790319	Text	Photos
85000318	MASSACHUSETTS	Suffolk	Boston	Dorchester Pottery Works	101-105 Victory Rd.	19850221	Text	Photos
79000368	MASSACHUSETTS	Suffolk	Boston	Bedford Building	89-103 Bedford St.	19790821	Text	Photos
80000442	MASSACHUSETTS	Suffolk	Boston	Wirth, Jacob, Buildings	31-39 Stuart St.	19801209	Text	Photos
80000445	MASSACHUSETTS	Suffolk	Boston	Metropolitan Theatre	252-272 Tremont St.	19801209	Text	Photos
80000446	MASSACHUSETTS	Suffolk	Boston	Hayden Building	681-683 Washington St.	19801209	Text	Photos
80000448	MASSACHUSETTS	Suffolk	Boston	Dill Building	11-25 Stuart St.	19801209	Text	Photos
80000450	MASSACHUSETTS	Suffolk	Boston	Boylston Building	2-22 Boylston St.	19801209	Text	Photos
80000451	MASSACHUSETTS	Suffolk	Boston	Boston Young Men's Christian Union	48 Boylston St.	19801209	Text	Photos
80000453	MASSACHUSETTS	Suffolk	Boston	Boston Edison Electric Illuminating Company	25-39 Boylston St.	19801209	Text	Photos
80000455	MASSACHUSETTS	Suffolk	Boston	West Street District	West St.	19801209	Text	Photos
80000460	MASSACHUSETTS	Suffolk	Boston	Liberty Tree District	Roughly bounded by Harrison Ave., \	19801209	Text	Photos
80000462	MASSACHUSETTS	Suffolk	Boston	Beach-Knapp District	Roughly bounded by Harrison Ave., \	19801209	Text	Photos
80000465	MASSACHUSETTS	Suffolk	Boston	Oak Square School	35 Nonantum St.	19801110	Text	Photos
66000127	MASSACHUSETTS	Suffolk	Boston	Arnold Arboretum	22 Divinity Ave.	19661015	Text	Photos
73000313	MASSACHUSETTS	Suffolk	Boston	Arlington Street Church	Arlington and Boylston Sts.	19730504	Text	Photos
73000322	MASSACHUSETTS	Suffolk	Boston	Old Corner Bookstore	NW corner of Washington and Schoc	19730411	Text	Photos
75000299	MASSACHUSETTS	Suffolk	Boston	South Station Headhouse	Atlantic Ave. and Summer St.	19750213	Text	Photos
74000392	MASSACHUSETTS	Suffolk	Boston	Winthrop Building	7 Water St.	19740418	Text	Photos
80000668	MASSACHUSETTS	Suffolk	Boston	United Shoe Machinery Corporation Building	138-164 Federal St.	19800819	Text	Photos
75000300	MASSACHUSETTS	Suffolk	Boston	St. Stephen's Church	Hanover St. between Clark and Harri	19750414	Text	Photos
80000669	MASSACHUSETTS	Suffolk	Boston	Union Wharf	295-353 Commercial St.	19800622	Text	Photos
80000670	MASSACHUSETTS	Suffolk	Boston	Suffolk County Jail	215 Charles St.	19800423	Text	Photos
80000674	MASSACHUSETTS	Suffolk	Boston	Garrison, William Lloyd, School	20 Hutchings St.	19800416	Text	Photos
80001683	MASSACHUSETTS	Suffolk	Boston	Dillaway School	16-20 Kenilworth St.	19800409	Text	Photos
66000366	MASSACHUSETTS	Suffolk	Boston	Ether Dome, Massachusetts General Hospital	Fruit St.	19661015	Text	Photos
70000539	MASSACHUSETTS	Suffolk	Boston	Otis, (First) Harrison Gray, House	141 Cambridge St.	19701230	Text	Photos
73000314	MASSACHUSETTS	Suffolk	Boston	Armory of the First Corps of Cadets	97-105 Arlington St. and 130 Columb	19730522	Text	Photos
73000315	MASSACHUSETTS	Suffolk	Boston	Blackstone Block Historic District	Area bound by Union, Hanover, Blac	19730526	Text	Photos
72000145	MASSACHUSETTS	Suffolk	Boston	Crowninshield House	164 Marlborough St.	19720223	Text	Photos
72000146	MASSACHUSETTS	Suffolk	Boston	First Baptist Church	Commonwealth Ave. and Clarendon	19720223	Text	Photos
74000391	MASSACHUSETTS	Suffolk	Boston	John Adams Courthouse	Pemberton Sq.	19740508	Text	Photos
72000150	MASSACHUSETTS	Suffolk	Boston	Trinity Rectory	Clarendon and Newbury Sts.	19720223	Text	Photos
74000385	MASSACHUSETTS	Suffolk	Boston	Copp's Hill Burial Ground	Charter, Snowhill, and Hull Sts.	19740418	Text	Photos
74000393	MASSACHUSETTS	Suffolk	Boston	Youth's Companion Building	209 Columbus Ave.	19740502	Text	Photos
66000764	MASSACHUSETTS	Suffolk	Boston	Harding, Chester, House	16 Beacon St.	19661015	Text	Photos
74002044	MASSACHUSETTS	Suffolk	Boston	Howe, Samuel Gridley and Julia Ward, House	13 Chestnut St.	19740913	Text	Photos
74002045	MASSACHUSETTS	Suffolk	Boston	King's Chapel	Tremont and School Sts.	19740502	Text	Photos
70000682	MASSACHUSETTS	Suffolk	Boston	Massachusetts General Hospital	Fruit Street	19701230	Text	Photos
80000678	MASSACHUSETTS	Suffolk	Boston	All Saints' Church	211 Ashmont St.	19800616	Text	Photos
81000620	MASSACHUSETTS	Suffolk	Boston	Fields Corner Municipal Building	1 Arcadia St., 195 Adams St.	19811112	Text	Photos
66000770	MASSACHUSETTS	Suffolk	Boston	Massachusetts Historical Society Building	1154 Boylston St.	19661015	Text	Photos
66000771	MASSACHUSETTS	Suffolk	Boston	Massachusetts Statehouse	Beacon Hill	19661015	Text	Photos
76001979	MASSACHUSETTS	Suffolk	Boston	Nell, William C., House	3 Smith Ct.	19760511	Text	Photos
70000687	MASSACHUSETTS	Suffolk	Boston	Old City Hall	School and Providence Sts.	19701230	Text	Photos
70000690	MASSACHUSETTS	Suffolk	Boston	Old South Church in Boston	645 Boylston St.	19701230	Text	Photos
70000691	MASSACHUSETTS	Suffolk	Boston	Old West Church	131 Cambridge St.	19701230	Text	Photos
66000782	MASSACHUSETTS	Suffolk	Boston	Parkman, Francis, House	50 Chestnut St.	19661015	Text	Photos
80000444	MASSACHUSETTS	Suffolk	Boston	Shubert, Sam S., Theatre	263-265 Tremont St.	19801209	Text	Photos
80000458	MASSACHUSETTS	Suffolk	Boston	Piano Row District	Boston Common, Park Sq., Boylston	19801209	Text	Photos
80000443	MASSACHUSETTS	Suffolk	Boston	Wilbur Theatre	244-250 Tremont St.	19801209	Text	Photos
66000765	MASSACHUSETTS	Suffolk	Boston	Headquarters House	55 Beacon St.	19661015	Text	Photos
68000042	MASSACHUSETTS	Suffolk	Boston	Pierce-Hichborn House	29 North Sq.	19681124	Text	Photos
66000784	MASSACHUSETTS	Suffolk	Boston	Quincy Market	S. Market St.	19661113	Text	Photos

70000730	MASSACHUSETTS	Suffolk	Boston	St. Paul's Church	136 Tremont St.	19701230	Text	Photos
70000731	MASSACHUSETTS	Suffolk	Boston	Sears, David, House	42 Beacon St.	19701230	Text	Photos
73001953	MASSACHUSETTS	Suffolk	Boston	Sumner, Charles, House	20 Hancock St.	19731107	Text	Photos
66000130	MASSACHUSETTS	Suffolk	Boston	Beacon Hill Historic District	Bounded by Beacon St., the Charles I	19661015	Text	Photos
73001955	MASSACHUSETTS	Suffolk	Boston	Otis, (Second) Harrison Gray, House	85 Mt. Vernon St.	19730727	Text	Photos
66000768	MASSACHUSETTS	Suffolk	Boston	Long Wharf and Customhouse Block	Foot of State St.	19661113	Text	Photos
66000132	MASSACHUSETTS	Suffolk	Boston	Boston Athenaeum	10 1/2 Beacon St.	19661015	Text	Photos
66000788	MASSACHUSETTS	Suffolk	Boston	Tremont Street Subway	Beneath Tremont, Boylston, and Wa	19661015	Text	Photos
70000733	MASSACHUSETTS	Suffolk	Boston	Trinity Church	Copley Sq.	19700701	Text	Photos
82004456	MASSACHUSETTS	Suffolk	Boston	Adams-Nervine Asylum	990-1020 Centre St.	19820601	Text	Photos
79000369	MASSACHUSETTS	Suffolk	Boston	International Trust Company Building	39-47 Milk St.	19790910	Text	Photos
74000388	MASSACHUSETTS	Suffolk	Boston	Eliot Burying Ground	Eustis and Washington Sts.	19740625	Text	Photos
80000463	MASSACHUSETTS	Suffolk	Boston	Russia Wharf Buildings	518-540 Atlantic Ave., 270 Congress	19801202	Text	Photos
71000087	MASSACHUSETTS	Suffolk	Boston	African Meetinghouse	8 Smith St.	19711007	Text	Photos
85002015	MASSACHUSETTS	Suffolk	Boston	Building at 138--142 Portland Street	138--142 Portland St.	19850905	Text	Photos
84000421	MASSACHUSETTS	Suffolk	Boston	Vermont Building	6-12 Thacher St.	19841113	Text	Photos
75000301	MASSACHUSETTS	Suffolk	Boston	Symphony and Horticultural Halls	Massachusetts and Huntington Aves	19750530	Text	Photos
73000324	MASSACHUSETTS	Suffolk	Boston	South End District	South Bay area between Huntington	19730508	Text	Photos
74000390	MASSACHUSETTS	Suffolk	Boston	Park Street District	Tremont, Park, and Beacon Sts.	19740501	Text	Photos
73000319	MASSACHUSETTS	Suffolk	Boston	Fulton-Commercial Streets District	Fulton, Commercial, Mercantile, Lew	19730321	Text	Photos
84002875	MASSACHUSETTS	Suffolk	Boston	Fenway-Boylston Street District	Fenway, Boylston, Westland, and He	19840904	Text	Photos
78000473	MASSACHUSETTS	Suffolk	Boston	Fenway Studios	30 Ipswich St.	19780913	Text	Photos
73000318	MASSACHUSETTS	Suffolk	Boston	Cyclorama Building	543-547 Tremont St.	19730413	Text	Photos
83004097	MASSACHUSETTS	Suffolk	Boston	Codman Building	55 Kilby St.	19831019	Text	Photos
80000676	MASSACHUSETTS	Suffolk	Boston	Charles Playhouse	74-78 Warenton St.	19800616	Text	Photos
74000382	MASSACHUSETTS	Suffolk	Boston	Ames Building	1 Court St.	19740426	Text	Photos
77001541	MASSACHUSETTS	Suffolk	Boston	Appleton, Nathan, Residence	39-40 Beacon St.	19771222	Text	Photos
66000134	MASSACHUSETTS	Suffolk	Boston	Boston Naval Shipyard	E of Chelsea St., Charlestown	19661115	Text	Photos
66000050	MASSACHUSETTS	Suffolk	Boston	Dorchester Heights National Historic Site	South Boston	19661015	Text	Photos
74002222	MASSACHUSETTS	Suffolk	Boston	Boston National Historical Park	Inner harbor at mouth of Charles Riv	19741026	Text	Photos
66000785	MASSACHUSETTS	Suffolk	Boston	Revere, Paul, House	19 North Sq.	19661015	Text	Photos
66000776	MASSACHUSETTS	Suffolk	Boston	Old North Church	193 Salem St.	19661015	Text	Photos
66000778	MASSACHUSETTS	Suffolk	Boston	Old South Meetinghouse	Milk and Washington Sts.	19661015	Text	Photos
66000368	MASSACHUSETTS	Suffolk	Boston	Faneuil Hall	Dock Sq.	19661015	Text	Photos
66000779	MASSACHUSETTS	Suffolk	Boston	Old State House	Washington and State Sts.	19661015	Text	Photos
85003074	MASSACHUSETTS	Suffolk	Boston	Dudley Station Historic District	Washington, Warren, and Dudley Sts	19851205	Text	Photos
86000140	MASSACHUSETTS	Suffolk	Boston	Christ Church	1220 River Rd.	19860130	Text	Photos
73000317	MASSACHUSETTS	Suffolk	Boston	Boston Public Library	Copley Sq.	19730506	Text	Photos
86001909	MASSACHUSETTS	Suffolk	Boston	Filene's Department Store	426 Washington St.	19860724	Text	Photos
86001913	MASSACHUSETTS	Suffolk	Boston	Second Brazer Building	25--29 State St.	19860724	Text	Photos
86001486	MASSACHUSETTS	Suffolk	Boston	Sears' Crescent and Sears' Block	38--68 and 70--72 Cornhill	19860809	Text	Photos
86001504	MASSACHUSETTS	Suffolk	Boston	Richardson Block	113--151 Pearl and 109--119 High Sts	19860809	Text	Photos
85003375	MASSACHUSETTS	Suffolk	Boston	Engine House No. 34	444 Western Ave.	19851024	Text	Photos
80000671	MASSACHUSETTS	Suffolk	Boston	Stearns, R. H., House	140 Tremont St.	19800616	Text	Photos
86001911	MASSACHUSETTS	Suffolk	Boston	Locke--Ober Restaurant	3--4 Winter Pl.	19860724	Text	Photos
80000677	MASSACHUSETTS	Suffolk	Boston	Berger Factory	37 Williams St.	19800409	Text	Photos
85000316	MASSACHUSETTS	Suffolk	Boston	Bigelow School	350 W. 4th St.	19850221	Text	Photos
84002890	MASSACHUSETTS	Suffolk	Boston	Moreland Street Historic District	Roughly bounded by Kearsarge, Blue	19840329	Text	Photos
70000921	MASSACHUSETTS	Suffolk	Boston	Fort Independence	Castle Island	19701015	Text	Photos
86000375	MASSACHUSETTS	Suffolk	Boston	Harriswood Crescent	60--88 Harold St.	19860313	Text	Photos
66000789	MASSACHUSETTS	Suffolk	Boston	U.S.S. CONSTITUTION	Boston Naval Shipyard	19661015	Text	Photos
87000757	MASSACHUSETTS	Suffolk	Boston	Harvard Stadium	60 N. Harvard St.	19870227	Text	Photos
72000144	MASSACHUSETTS	Suffolk	Boston	Boston Common and Public Garden	Beacon, Park, Tremont, Boylston, an	19720712	Text	Photos
87000760	MASSACHUSETTS	Suffolk	Boston	Boston Common	Beacon, Park, Tremont, Boylston, an	19870227	Text	Photos
87000761	MASSACHUSETTS	Suffolk	Boston	Boston Public Garden	Beacon, Charles, Boylston, and Arling	19870227	Text	Photos
87001128	MASSACHUSETTS	Suffolk	Boston	Monument Square Historic District	Monument Sq.	19870602	Text	Photos
66000138	MASSACHUSETTS	Suffolk	Boston	Bunker Hill Monument	Breed's Hill	19661015	Text	Photos
86000274	MASSACHUSETTS	Suffolk	Boston	Bulfinch Triangle Historic District	Roughly bounded by Canal, Market,	19860227	Text	Photos
80000675	MASSACHUSETTS	Suffolk	Boston	Dorchester-Milton Lower Mills Industrial District	Both sides of Neponset River	19800402	Text	Photos
86000084	MASSACHUSETTS	Suffolk	Boston	USS CASSIN YOUNG (destroyer)	Charlestown Navy Yard	19860114	Text	Photos
66000133	MASSACHUSETTS	Suffolk	Boston	Boston Light	Little Brewster Island, Boston Harbo	19661015	Text	Photos
87001481	MASSACHUSETTS	Suffolk	Boston	Long Island Head Light	Long Island	19870615	Text	Photos
87001394	MASSACHUSETTS	Suffolk	Boston	New Riding Club	52 Hemenway St.	19870820	Text	Photos
87001396	MASSACHUSETTS	Suffolk	Boston	Congress Street Fire Station	344 Congress St.	19870903	Text	Photos
87000885	MASSACHUSETTS	Suffolk	Boston	Abbotsford	300 Walnut Ave.	19870916	Text	Photos
87001889	MASSACHUSETTS	Suffolk	Boston	Sumner Hill Historic District	Roughly bounded by Seaverns Ave.,	19871022	Text	Photos
87001771	MASSACHUSETTS	Suffolk	Boston	Bunker Hill School	65 Baldwin St.	19871015	Text	Photos
87001398	MASSACHUSETTS	Suffolk	Boston	House at 17 Cranston Street	17 Cranston St.	19871120	Text	Photos
87001399	MASSACHUSETTS	Suffolk	Boston	Hoxie, Timothy, House	135 Hillside St.	19871120	Text	Photos
87001495	MASSACHUSETTS	Suffolk	Boston	Saint Augustine Chapel and Cemetery	Dorchester St. between W. Sixth and	19870918	Text	Photos

87002549	MASSACHUSETTS	Suffolk	Boston	District 13 Police Station	28 Seaverns Ave.	19880210	Text	Photos
85003323	MASSACHUSETTS	Suffolk	Boston	Boston Harbor Islands Archeological District	Address Restricted	19851221	Text	Photos
82004448	MASSACHUSETTS	Suffolk	Boston	Roughan Hall	15-18 City Sq.	19820415	Text	Photos
82004450	MASSACHUSETTS	Suffolk	Boston	McKay, Donald, House	78-80 White St.	19820602	Text	Photos
82004453	MASSACHUSETTS	Suffolk	Boston	Haffenreffer Brewery	Germania St.	19820502	Text	Photos
73000850	MASSACHUSETTS	Suffolk	Boston	Town Hill District	Bounded roughly by Rutherford Ave.	19730511	Text	Photos
74000907	MASSACHUSETTS	Suffolk	Boston	Phipps Street Burying Ground	Phipps St.	19740514	Text	Photos
74000911	MASSACHUSETTS	Suffolk	Boston	Clapp Houses	199 and 195 Boston St.	19740502	Text	Photos
74000915	MASSACHUSETTS	Suffolk	Boston	Dorchester North Burying Ground	Stroughton St. and Columbia Rd.	19740418	Text	Photos
80004396	MASSACHUSETTS	Suffolk	Boston	Boston African American National Historic Site	Museum of Afro American History, I	19801010	Text	Photos
66000141	MASSACHUSETTS	Suffolk	Boston	Brook Farm	670 Baker St.	19661015	Text	Photos
73000856	MASSACHUSETTS	Suffolk	Boston	Roxbury High Fort	Beech Glen St. at Fort Ave.	19730423	Text	Photos
73000855	MASSACHUSETTS	Suffolk	Boston	Kittredge, Alvah, House	12 Linwood St.	19730508	Text	Photos
73000854	MASSACHUSETTS	Suffolk	Boston	John Eliot Square District	John Eliot Sq.	19730423	Text	Photos
66000653	MASSACHUSETTS	Suffolk	Boston	Garrison, William Lloyd, House	125 Highland St.	19661015	Text	Photos
72000544	MASSACHUSETTS	Suffolk	Boston	Loring-Greenough House	12 South St.	19720426	Text	Photos
74000917	MASSACHUSETTS	Suffolk	Boston	Pierce House	24 Oakton Ave.	19740426	Text	Photos
70000540	MASSACHUSETTS	Suffolk	Boston	Fort Warren	Georges Island, Boston Harbor	19700829	Text	Photos
74002350	MASSACHUSETTS	Suffolk	Boston	Blake, James, House	735 Columbia Rd.	19740501	Text	Photos
83000604	MASSACHUSETTS	Suffolk	Boston	Loring, Harrison, House	789 E. Broadway St.	19830901	Text	Photos
88000908	MASSACHUSETTS	Suffolk	Boston	Goodwin, Ozias, House	7 Jackson Ave.	19880623	Text	Photos
88000957	MASSACHUSETTS	Suffolk	Boston	Greek Orthodox Cathedral of New England	520 Parker St.	19880630	Text	Photos
88000427	MASSACHUSETTS	Suffolk	Boston	Temple Place Historic District	11--55, 26--58 Temple Pl.	19880726	Text	Photos
88000959	MASSACHUSETTS	Suffolk	Boston	Eliot Hall	7A Eliot St.	19880715	Text	Photos
87001478	MASSACHUSETTS	Suffolk	Boston	Austin, Francis B., House	58 High St.	19881021	Text	Photos
89000004	MASSACHUSETTS	Suffolk	Boston	Mount Pleasant Historic District	Roughly bounded by Forest St. and M	19890209	Text	Photos
89000147	MASSACHUSETTS	Suffolk	Boston	Roxbury Highlands Historic District	Roughly bounded by Dudley St., Was	19890222	Text	Photos
73000325	MASSACHUSETTS	Suffolk	Boston	Hale, Edward Everett, House	12 Morley St.	19790321	Text	Photos
83004099	MASSACHUSETTS	Suffolk	Boston	LUNA (tugboat)	NDC Pier, Charles River	19831006	Text	Photos
89000974	MASSACHUSETTS	Suffolk	Boston	Massachusetts School of Art	364 Brookline Ave.	19890803	Text	Photos
89001747	MASSACHUSETTS	Suffolk	Boston	Mission Hill Triangle Historic District	Roughly bounded by Smith St., Wort	19891106	Text	Photos
89002169	MASSACHUSETTS	Suffolk	Boston	St. Joseph's Roman Catholic Church Complex	Bounded by Circuit, Regent, Hulbert,	19891228	Text	Photos
89002251	MASSACHUSETTS	Suffolk	Boston	Bellevue Standpipe	On Bellevue Hill at Washington St. ar	19900118	Text	Photos
88000955	MASSACHUSETTS	Suffolk	Boston	First Church of Jamaica Plain	6 Eliot St.	19880715	Text	Photos
90000631	MASSACHUSETTS	Suffolk	Boston	Copp's Hill Terrace	Between Commercial and Charter St	19900419	Text	Photos
89002271	MASSACHUSETTS	Suffolk	Boston	Chestnut Hill Reservoir Historic District	Beacon St. and Commonwealth Ave.	19900118	Text	Photos
90001095	MASSACHUSETTS	Suffolk	Boston	Calf Pasture Pumping Station Complex	435 Mount Vernon St.	19900802	Text	Photos
90001145	MASSACHUSETTS	Suffolk	Boston	Bowditch School	80--82 Greene St.	19900803	Text	Photos
90001536	MASSACHUSETTS	Suffolk	Boston	Monument Square Historic District	Roughly bounded by Jamaicaway, Pc	19901011	Text	Photos
90001537	MASSACHUSETTS	Suffolk	Boston	Upham's Corner Market	600 Columbia Rd.	19901011	Text	Photos
89002125	MASSACHUSETTS	Suffolk	Boston	Roxbury Presbyterian Church	328 Warren St.	19910315	Text	Photos
90001992	MASSACHUSETTS	Suffolk	Boston	Sears Roebuck and Company Mail Order Store	309 Park Dr. and 201 Brookline Ave.	19910115	Text	Photos
92000356	MASSACHUSETTS	Suffolk	Boston	Trinity Neighborhood House	406 Meridian St.	19920414	Text	Photos
73001948	MASSACHUSETTS	Suffolk	Boston	Back Bay Historic District	Roughly bounded by the Charles Rive	19730814	Text	Photos
90001757	MASSACHUSETTS	Suffolk	Boston	Textile District	Roughly, Essex St. from Phillips Sq. to	19901129	Text	Photos
93001489	MASSACHUSETTS	Suffolk	Boston	Massachusetts Mental Health Center	74 Fenwood Rd.	19940121	Text	Photos
93001573	MASSACHUSETTS	Suffolk	Boston	House at 1 Bay Street	1 Bay St.	19940209	Text	Photos
93001587	MASSACHUSETTS	Suffolk	Boston	Eliot Congregational Church	56 Dale St., corner 118--120 Walnut S	19940209	Text	Photos
85000317	MASSACHUSETTS	Suffolk	Boston	Dimock Community Health Center Complex	41 and 55 Dimock St.	19850221	Text	Photos
80000672	MASSACHUSETTS	Suffolk	Boston	New England Conservatory of Music	290 Huntington Ave.	19800514	Text	Photos
94001494	MASSACHUSETTS	Suffolk	Boston	Lower Roxbury Historic District	Roughly, area surrounding Coventry,	19941209	Text	Photos
94001492	MASSACHUSETTS	Suffolk	Boston	Faneuil, Peter, School	60 Joy St.	19941216	Text	Photos
95001450	MASSACHUSETTS	Suffolk	Boston	Riviera, The	270 Huntington Ave.	19951207	Text	Photos
73000321	MASSACHUSETTS	Suffolk	Boston	Custom House District	Between J.F.K. Expwy. and Kirby St. a	19730511	Text	Photos
96001063	MASSACHUSETTS	Suffolk	Boston	Douglass, Frederick, Square Historic District	Roughly bounded by Hammond St., (	19961003	Text	Photos
97000969	MASSACHUSETTS	Suffolk	Boston	Charlestown Heights	Roughly bounded by St. Martin, Bunl	19980108	Text	Photos
97000920	MASSACHUSETTS	Suffolk	Boston	Brighton Evangelical Congregational Church	404-410 Washington St.	19970821	Text	Photos
97000970	MASSACHUSETTS	Suffolk	Boston	Students House	96 The Fenway	19970911	Text	Photos
97000971	MASSACHUSETTS	Suffolk	Boston	North Terminal Garage	600 Commercial St.	19970911	Text	Photos
97001239	MASSACHUSETTS	Suffolk	Boston	Dorchester Temple Baptist Church	670 Washington St.	19980116	Text	Photos
97001377	MASSACHUSETTS	Suffolk	Boston	Allston Congregational Church	31-41 Quint Ave.	19971107	Text	Photos
97001472	MASSACHUSETTS	Suffolk	Boston	St. Luke's and St. Margaret's Church	5-7 St. Luke's Rd.	19971112	Text	Photos
98000149	MASSACHUSETTS	Suffolk	Boston	Eagle Hill Historic District	Roughly bounded by Border, Lexingt	19980226	Text	Photos
98001082	MASSACHUSETTS	Suffolk	Boston	Boston Young Men's Christian Association	312-320 Huntington Ave.	19980820	Text	Photos
97001278	MASSACHUSETTS	Suffolk	Boston	ROSEWAY (schooner)	Boston Harbor	19970925	Text	Photos
98001292	MASSACHUSETTS	Suffolk	Boston	St. Mary's Episcopal Church	14-16 Cushing Ave.	19981030	Text	Photos
98001330	MASSACHUSETTS	Suffolk	Boston	Roslindale Baptist Church	52 Cummins Hwy.	19981105	Text	Photos
98001361	MASSACHUSETTS	Suffolk	Boston	Cathedral of St. George Historic District	517-523-525 E. Broadway	19981125	Text	Photos
98001381	MASSACHUSETTS	Suffolk	Boston	Baker Congregational Church	760 Saratoga St.	19981119	Text	Photos
99000593	MASSACHUSETTS	Suffolk	Boston	Woodbourne Historic District	Roughly bounded by Walk Hill, Good	19990604	Text	Photos

99000633	MASSACHUSETTS	Suffolk	Boston	Symphony Hall	301 Massachusetts Avenue	19990120	Text	Photos
99001302	MASSACHUSETTS	Suffolk	Boston	Mariner's House	11 North Square	19991112	Text	Photos
99001304	MASSACHUSETTS	Suffolk	Boston	Congregation Adath Jeshurun	397 Blue Hill Ave.	19991112	Text	Photos
99001308	MASSACHUSETTS	Suffolk	Boston	First Congregational Church of Hyde Park	6 Webster St.	19991112	Text	Photos
99001614	MASSACHUSETTS	Suffolk	Boston	Church Green Buildings Historic District	101-113 Summer St.	19991230	Text	Photos
00000160	MASSACHUSETTS	Suffolk	Boston	Fulton-Commercial Streets Historic District (Boundary Incre	81-95 Richmond St.	20000303	Text	Photos
00000415	MASSACHUSETTS	Suffolk	Boston	Harvard Avenue Historic District	Roughly bounded by Linden St., Com	20000428	Text	Photos
00000871	MASSACHUSETTS	Suffolk	Boston	Dearborn School	25 Ambrose St.	20000802	Text	Photos
01000088	MASSACHUSETTS	Suffolk	Boston	Brighton Center Historic District	Academy Hill R., Chestnut Hill Ave., D	20010220	Text	Photos
01000872	MASSACHUSETTS	Suffolk	Boston	Peabody, The	195-197 Ashmont St.	20010808	Text	Photos
01001048	MASSACHUSETTS	Suffolk	Boston	Gibson House	137 Beacon St.	20010807	Text	Photos
01001557	MASSACHUSETTS	Suffolk	Boston	Boston Consumptives Hospital	249 River St.	20020207	Text	Photos
02000081	MASSACHUSETTS	Suffolk	Boston	Frances and Isabella Apartments	430-432 and 434-436 Dudley St.	20020222	Text	Photos
02000154	MASSACHUSETTS	Suffolk	Boston	Greenwood Memorial United Methodist Church	378A-380 Washington St.	20020308	Text	Photos
02000548	MASSACHUSETTS	Suffolk	Boston	Bennington Street Burying Ground	Bennington St., bet. Swift and harmo	20020522	Text	Photos
02001039	MASSACHUSETTS	Suffolk	Boston	Paine Furniture Building	75-81 Arlington St.	20020912	Text	Photos
02001190	MASSACHUSETTS	Suffolk	Boston	Harrison Square Historic District	Bounded by MBTA Braintree line em	20021022	Text	Photos
03000385	MASSACHUSETTS	Suffolk	Boston	Savin Hill Historic District	Roughly bounded by Savin Hill Ave.,	20030509	Text	Photos
03000645	MASSACHUSETTS	Suffolk	Boston	Union Oyster House	41-43 Union Street	20030527	Text	Photos
03000781	MASSACHUSETTS	Suffolk	Boston	Publicity Building	40-44 Bromfield St.	20030820	Text	Photos
04000023	MASSACHUSETTS	Suffolk	Boston	Benedict Fenwick School	150 Magnolia St.	20040211	Text	Photos
04000085	MASSACHUSETTS	Suffolk	Boston	Haskell, Edward H., Home for Nurses	220 Fisther Ave., 63 Parker Hill Ave.	20040226	Text	Photos
04000119	MASSACHUSETTS	Suffolk	Boston	YWCA Boston	140 Clarendon St.	20040303	Text	Photos
04000189	MASSACHUSETTS	Suffolk	Boston	Nix's Mate Daybeacon	Nubble Channel, The Narrows, Bosto	20040318	Text	Photos
04000426	MASSACHUSETTS	Suffolk	Boston	Nazing Court Apartments	224-236 Seaver St. and 1-8 Nazing Co	20040512	Text	Photos
04000534	MASSACHUSETTS	Suffolk	Boston	Hibernian Hall	182-186 Dudley St.	20040602	Text	Photos
04000959	MASSACHUSETTS	Suffolk	Boston	Fort Point Channel Historic District	Necco Court, Thomson Place, A, Binfo	20040910	Text	Photos
04001219	MASSACHUSETTS	Suffolk	Boston	Forest Hills Cemetery	95 Forest Hills Ave.	20041117	Text	Photos
04001430	MASSACHUSETTS	Suffolk	Boston	Truman Parkway--Metropolitan Park System of Greater Bos	Truman Parkway	20050105	Text	Photos
04001432	MASSACHUSETTS	Suffolk	Boston	VFW Parkway, Metropolitan Park System of Greater Bostor	VFW Parkway, bet. Spring And Centr	20050105	Text	Photos
04001572	MASSACHUSETTS	Suffolk	Boston	Morton Street, Metropolitan Park System of Greater Bosto	Morton St.	20050124	Text	Photos
04001573	MASSACHUSETTS	Suffolk	Boston	Neponset Valley Parkway, Metorpolitan Park System of Gre	Neponset Valley Parkway	20050124	Text	Photos
05000459	MASSACHUSETTS	Suffolk	Boston	Ayer, Frederick, Mansion	395 Commonwealth Avenue	20050405	Text	Photos
05000559	MASSACHUSETTS	Suffolk	Boston	Collins Building	213-217 Washington St.	20050608	Text	Photos
05000879	MASSACHUSETTS	Suffolk	Boston	Home for Aged Couples	409, 419 Walnut Ave. and 2055 Colu	20050811	Text	Photos
05000936	MASSACHUSETTS	Suffolk	Boston	South Boston Boat Clubs Historic District	1793-1849 William J. Day Blvd.	20050901	Text	Photos
05001509	MASSACHUSETTS	Suffolk	Boston	Stony Brook Reservation Parkways, Metropolitan Park Syst	Dedham, Enneking, Turtle Pond Park	20060103	Text	Photos
06000127	MASSACHUSETTS	Suffolk	Boston	East Boston High School, Old	127 Marion St.	20060315	Text	Photos
01000304	MASSACHUSETTS	Suffolk	Boston	Dorchester--Milton Lower Mills Industrial District (Boundar	Roughly: Adams, River, Medway Sts.,	20010406	Text	Photos
07000510	MASSACHUSETTS	Suffolk	Boston	Goldsmith Block	41 Ruggles St., 746-750 Shawmut Ave	20070605	Text	Photos
07000861	MASSACHUSETTS	Suffolk	Boston	Boston Transit Commission Building	15 Beacon St.	20070831	Text	Photos
08000089	MASSACHUSETTS	Suffolk	Boston	Dorchester Park	Bounded by Dorchester Ave., Richmo	20080220	Text	Photos
08000693	MASSACHUSETTS	Suffolk	Boston	Old Harbor Reservation Parkways, Metropolitan Park Syste	William J. Day Blvd., Columbia Rd. be	20080724	Text	Photos
08000793	MASSACHUSETTS	Suffolk	Boston	Joshua Bates School	731 Harrison Ave.	20080822	Text	Photos
08000795	MASSACHUSETTS	Suffolk	Boston	Ohabei Shalom Cemetery	147 Wordsworth St.	20080819	Text	Photos
08001284	MASSACHUSETTS	Suffolk	Boston	Compton Building	159, 161-175 Devonshire St., 18-20 A	20081231	Text	Photos
09000612	MASSACHUSETTS	Suffolk	Boston	Evergreen Cemetery	2060 Commonwealth Ave.	20090814	Text	Photos
09000717	MASSACHUSETTS	Suffolk	Boston	Fairview Cemetery	45 Fairview Ave.	20090916	Text	Photos
09000767	MASSACHUSETTS	Suffolk	Boston	Mount Hope Cemetery	355 Walk Hill St.	20090924	Text	Photos
10000039	MASSACHUSETTS	Suffolk	Boston	EDNA G. shipwreck (Eastern Rig dragger)	Address Restricted	20101122	Text	Photos
10000300	MASSACHUSETTS	Suffolk	Boston	Highland Spring Brewery Bottling and Storage Buildings	154-166 Terrace St	20100528	Text	Photos
10000391	MASSACHUSETTS	Suffolk	Boston	Second Church in Boston	874, 876, 880 Beacon St	20100624	Text	Photos
10000506	MASSACHUSETTS	Suffolk	Boston	Charles River Reservation (Speedway)--Upper Basin Headq	1420-1440 Soldiers Field Rd	20100719	Text	Photos
10001066	MASSACHUSETTS	Suffolk	Boston	Egleston Substation	3025 Washington St	20101227	Text	Photos
11000160	MASSACHUSETTS	Suffolk	Boston	United State Post Office, Courthouse, and Federal Building	5 Post Office Square	20110408	Text	Photos
12000069	MASSACHUSETTS	Suffolk	Boston	Fenway Park	24, & 2-4 Yawkey Wy., 64-76 Brookli	20120307	Text	Photos
12000099	MASSACHUSETTS	Suffolk	Boston	Terminal Storage Warehouse District	267-281 Medford St., 40 & 50 Termir	20120312	Text	Photos
12000783	MASSACHUSETTS	Suffolk	Boston	Saint Mark's Episcopal Church	73 Columbia Rd.	20140703	Text	Photos
12000978	MASSACHUSETTS	Suffolk	Boston	Sherman Apartments Historic District	544-546 Washington, 4-6, 12-14, 18 I	20121128	Text	Photos
12001012	MASSACHUSETTS	Suffolk	Boston	Central Congregational Church	67 Newbury St.	20121016	Text	Photos
12001162	MASSACHUSETTS	Suffolk	Boston	Commonwealth Pier Five	165 Northern Ave.	19791010	Text	Photos
13000621	MASSACHUSETTS	Suffolk	Boston	Roslindale Substation	4228 Washington St.	20130827	Text	Photos
13000928	MASSACHUSETTS	Suffolk	Boston	Davidson, Sarah, Apartment Block	3 Gaylord St.	20131218	Text	Photos
13000929	MASSACHUSETTS	Suffolk	Boston	Pilgrim Congregational Church	540-544 Columbia Rd.	20131218	Text	Photos
13000930	MASSACHUSETTS	Suffolk	Boston	Walton and Roslin Halls	702-708 & 710-726 Washington St., 3	20131218	Text	Photos
14000272	MASSACHUSETTS	Suffolk	Boston	Blake and Amory Building	59 Temple Pl.	20140602	Text	Photos
14000365	MASSACHUSETTS	Suffolk	Boston	Dorchester South Burying Ground	2095 Dorchester Ave.	20140627	Text	Photos
14000561	MASSACHUSETTS	Suffolk	Boston	Buildings at 825--829 Blue Hill Avenue	825-829 Blue Hill Ave.	20140910	Text	Photos
14000698	MASSACHUSETTS	Suffolk	Boston	Almont Apartments	1439-1443 & 1447-1451 Blue Hill Ave	20140922	Text	Photos
14000974	MASSACHUSETTS	Suffolk	Boston	Gridley Street Historic District	Bounded by Congress, High, Pearl &	20141203	Text	Photos

14000975	MASSACHUSETTS	Suffolk	Boston	Lyman, Theodore, School	30 Gove St.	20141202	Text	Photos
14001095	MASSACHUSETTS	Suffolk	Boston	South End District (Boundary Increase)	200-224 Northampton St.	20141229	Text	Photos
15000048	MASSACHUSETTS	Suffolk	Boston	Boston Police Station Number One--Traffic Tunnel Adminis	128, 150 North & 130 -140 Richmonc	20150303	Text	Photos
15000195	MASSACHUSETTS	Suffolk	Boston	Boston National Historical Park	Charlestown Navy Yard	20150505	Text	Photos
86001378	MASSACHUSETTS	Suffolk	South Bosto	US Post Office Garage	135 A St.	19860626	Text	Photos

APPENDIX E

BWSC Permit Application

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

19 November 2020
File No. 133243-004

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
Brigham and Women's Faulkner Hospital (BWFH)
1153 Centre Street
Boston, Massachusetts

Dear Mr. Tuttle:

On behalf of our client, Brigham and Women's Faulkner Hospital this letter submits the Dewatering Discharge Permit Application in support of the proposed rear garage and inpatient addition project, located at 1153 Centre Street, in Boston, Massachusetts.

Dewatering is necessary to enable construction excavations in-the-dry and is anticipated to begin in April 2021 and continue for up to 18 months. Prior to discharge, collected water will be routed through a sedimentation tank and bag filter at minimum to remove suspended solids and un-dissolved chemical constituents. The proposed dewatering discharge route and BWSC outfall location is described and shown in the NPDES RGP Permit Application attachments.

A submittal was provided to EPA for discharge of the dewatering effluent under the Remediation General Permit (RGP). A copy of the submitted RGP application is attached. If you have any questions, please feel free to contact the undersigned at 617-886-7400.

Sincerely yours,
HALEY & ALDRICH, INC.

Cole E. Worthy, LSP
Senior Associate

Attachments:
Copy of NPDES RGP Permit Application

\\haleyaldrich.com\share\CF\Projects\133243\NPDES\Permit Application\Appendix E - BWSC Permit\2020-1008-HAI-BWFH-NPDES BWSC Letter-D2.docx

APPENDIX F

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L2005306
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Lee Vanzler
Phone:	(617) 886-7561
Project Name:	BWFH-REAR GARAGE
Project Number:	133243-005 SID 4
Report Date:	03/04/20

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: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2005306-01	HA20-REARGARAGE-02052020	WATER	1153 CENTRE STREET, BOSTON, MA	02/05/20 12:00	02/05/20
L2005306-02	HA20-OUTFALL-02052020	WATER	1153 CENTRE STREET, BOSTON, MA	02/05/20 13:20	02/05/20

Project Name:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

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:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

Case Narrative (continued)

Report Submission

March 04, 2020: This final report includes the results of all requested analyses.

February 12, 2020: 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.

Anions by Ion Chromatography

The WG1338449-3 MS recovery for chloride (119%), performed on L2005306-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 03/04/20

ORGANICS

VOLATILES

Project Name: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01 Date Collected: 02/05/20 12:00
Client ID: HA20-REARGARAGE-02052020 Date Received: 02/05/20
Sample Location: 1153 CENTRE STREET, BOSTON, MA Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 02/10/20 15:43
Analyst: KJD

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: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01 Date Collected: 02/05/20 12:00

Client ID: HA20-REARGARAGE-02052020 Date Received: 02/05/20

Sample Location: 1153 CENTRE STREET, BOSTON, MA Field Prep: Refer to COC

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	97		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	84		60-140

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 02/11/20 20:27
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	99		60-140
4-Bromofluorobenzene	96		60-140

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 02/06/20 16:06
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 02/06/20 13:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	1	A
1,2,3-Trichloropropane	ND		ug/l	0.029	--	1	A

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 02/06/20 14:40
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 02/06/20 13:25

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1337920-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A
1,2,3-Trichloropropane	ND		ug/l	0.030	--	A

Project Name: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 02/10/20 12:01
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1339293-4					
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: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 02/10/20 12:01
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1339293-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	95		60-140
Fluorobenzene	98		60-140
4-Bromofluorobenzene	82		60-140

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 02/11/20 19:55
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1339922-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	100		60-140
4-Bromofluorobenzene	115		60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH-REAR GARAGE

Project Number: 133243-005 SID 4

Lab Number: L2005306

Report Date: 03/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1337920-2									
1,2-Dibromoethane	86		-		80-120	-			A
1,2-Dibromo-3-chloropropane	94		-		80-120	-			A
1,2,3-Trichloropropane	89		-		80-120	-			A

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1339293-3								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Carbon tetrachloride	100		-		70-130	-		41
1,1,2-Trichloroethane	100		-		70-130	-		45
Tetrachloroethene	95		-		70-130	-		39
1,2-Dichloroethane	100		-		70-130	-		49
1,1,1-Trichloroethane	105		-		70-130	-		36
Benzene	100		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	90		-		60-140	-		63
Vinyl chloride	100		-		5-195	-		66
1,1-Dichloroethene	105		-		50-150	-		32
cis-1,2-Dichloroethene	100		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	90		-		65-135	-		57
1,3-Dichlorobenzene	80		-		70-130	-		43
1,4-Dichlorobenzene	85		-		65-135	-		57
p/m-Xylene	95		-		60-140	-		30
o-xylene	85		-		60-140	-		30
Acetone	114		-		40-160	-		30
Methyl tert butyl ether	110		-		60-140	-		30
Tert-Butyl Alcohol	100		-		60-140	-		30
Tertiary-Amyl Methyl Ether	95		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1339293-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	98				60-140
Fluorobenzene	99				60-140
4-Bromofluorobenzene	84				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH-REAR GARAGE

Project Number: 133243-005 SID 4

Lab Number: L2005306

Report Date: 03/04/20

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: WG1339922-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	103				60-140
4-Bromofluorobenzene	112				60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: BWFH-REAR GARAGE

Project Number: 133243-005 SID 4

Lab Number: L2005306

Report Date: 03/04/20

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: WG1337920-3 QC Sample: L2004719-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.247	0.208	84		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.247	0.222	90		-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.247	0.204	83		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 02/06/20 15:15
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 02/05/20 23:34

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	91		42-122
2-Fluorobiphenyl	89		46-121
4-Terphenyl-d14	107		47-138

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 02/06/20 20:25
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 02/05/20 23:37

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	45		25-87
Phenol-d6	35		16-65
Nitrobenzene-d5	87		42-122
2-Fluorobiphenyl	77		46-121
2,4,6-Tribromophenol	97		45-128
4-Terphenyl-d14	94		47-138

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 02/06/20 11:56
Analyst: JG

Extraction Method: EPA 625.1
Extraction Date: 02/05/20 08:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1337341-1					
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	78		42-122
2-Fluorobiphenyl	75		46-121
4-Terphenyl-d14	81		47-138

Project Name: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 02/11/20 12:36
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 02/05/20 08:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1337342-1					
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	48		25-87
Phenol-d6	35		16-65
Nitrobenzene-d5	90		42-122
2-Fluorobiphenyl	74		46-121
2,4,6-Tribromophenol	89		45-128
4-Terphenyl-d14	87		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1337341-3								
Bis(2-ethylhexyl)phthalate	74		-		29-137	-		82
Butyl benzyl phthalate	84		-		1-140	-		60
Di-n-butylphthalate	78		-		8-120	-		47
Di-n-octylphthalate	73		-		19-132	-		69
Diethyl phthalate	83		-		1-120	-		100
Dimethyl phthalate	89		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	82				42-122
2-Fluorobiphenyl	77				46-121
4-Terphenyl-d14	86				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1337342-3								
Acenaphthene	92		-		60-132	-		30
Fluoranthene	96		-		43-121	-		30
Naphthalene	88		-		36-120	-		30
Benzo(a)anthracene	105		-		42-133	-		30
Benzo(a)pyrene	110		-		32-148	-		30
Benzo(b)fluoranthene	110		-		42-140	-		30
Benzo(k)fluoranthene	112		-		25-146	-		30
Chrysene	88		-		44-140	-		30
Acenaphthylene	87		-		54-126	-		30
Anthracene	92		-		43-120	-		30
Benzo(ghi)perylene	74		-		1-195	-		30
Fluorene	92		-		70-120	-		30
Phenanthrene	96		-		65-120	-		30
Dibenzo(a,h)anthracene	81		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	80		-		1-151	-		30
Pyrene	93		-		70-120	-		30
Pentachlorophenol	87		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1337342-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	56				25-87
Phenol-d6	44				16-65
Nitrobenzene-d5	87				42-122
2-Fluorobiphenyl	79				46-121
2,4,6-Tribromophenol	98				45-128
4-Terphenyl-d14	94				47-138

PCBS

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 02/07/20 16:20
Analyst: KB

Extraction Method: EPA 608.3
Extraction Date: 02/06/20 01:20
Cleanup Method: EPA 3665A
Cleanup Date: 02/06/20
Cleanup Method: EPA 3660B
Cleanup Date: 02/06/20

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	70		37-123	B
Decachlorobiphenyl	57		38-114	B
2,4,5,6-Tetrachloro-m-xylene	71		37-123	A
Decachlorobiphenyl	55		38-114	A

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 02/06/20 18:34
Analyst: JM

Extraction Method: EPA 608.3
Extraction Date: 02/05/20 19:14
Cleanup Method: EPA 3665A
Cleanup Date: 02/05/20
Cleanup Method: EPA 3660B
Cleanup Date: 02/06/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1337595-1						
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	43		37-123	B
Decachlorobiphenyl	44		38-114	B
2,4,5,6-Tetrachloro-m-xylene	42		37-123	A
Decachlorobiphenyl	45		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1337595-2									
Aroclor 1016	50		-		50-140	-		36	A
Aroclor 1260	47		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49				37-123	B
Decachlorobiphenyl	52				38-114	B
2,4,5,6-Tetrachloro-m-xylene	48				37-123	A
Decachlorobiphenyl	51				38-114	A

METALS

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/05/20 12:00
Date Received: 02/05/20
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
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Chromium, Total	0.00212		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Copper, Total	0.00375		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Iron, Total	0.952		mg/l	0.050	--	1	02/06/20 22:27	02/07/20 13:53	EPA 3005A	19,200.7	LC
Lead, Total	0.00250		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	02/07/20 16:03	02/07/20 19:38	EPA 245.1	3,245.1	AL
Nickel, Total	0.00255		mg/l	0.00200	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/06/20 22:27	02/07/20 11:33	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	385		mg/l	0.660	NA	1	02/06/20 22:27	02/07/20 13:53	EPA 3005A	19,200.7	LC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		02/07/20 11:33	NA	107,-	

Project Name: BWFH-REAR GARAGE
Lab Number: L2005306
Project Number: 133243-005 SID 4
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-02
Client ID: HA20-OUTFALL-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/05/20 13:20
Date Received: 02/05/20
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
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Copper, Total	0.00261		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Iron, Total	0.064		mg/l	0.050	--	1	02/06/20 22:27	02/07/20 13:57	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	02/07/20 16:03	02/07/20 19:40	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.00200	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Zinc, Total	0.02111		mg/l	0.01000	--	1	02/06/20 22:27	02/07/20 11:38	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	91.5		mg/l	0.660	NA	1	02/06/20 22:27	02/07/20 13:57	EPA 3005A	19,200.7	LC

Project Name: BWFH-REAR GARAGE **Lab Number:** L2005306

Project Number: 133243-005 SID 4 **Report Date:** 03/04/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1338072-1										
Iron, Total	ND		mg/l	0.050	--	1	02/06/20 22:27	02/07/20 11:06	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01-02 Batch: WG1338072-1										
Hardness	ND		mg/l	0.660	NA	1	02/06/20 22:27	02/07/20 11:06	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1338073-1										
Antimony, Total	ND		mg/l	0.00400	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/06/20 22:27	02/07/20 09:02	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4
Lab Number: L2005306
Report Date: 03/04/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1338399-1										
Mercury, Total	ND		mg/l	0.0002	--	1	02/07/20 16:03	02/07/20 18:52	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH-REAR GARAGE

Project Number: 133243-005 SID 4

Lab Number: L2005306

Report Date: 03/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1338072-2								
Iron, Total	110		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1338072-2								
Hardness	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1338073-2								
Antimony, Total	87		-		85-115	-		
Arsenic, Total	100		-		85-115	-		
Cadmium, Total	106		-		85-115	-		
Chromium, Total	100		-		85-115	-		
Copper, Total	98		-		85-115	-		
Lead, Total	106		-		85-115	-		
Nickel, Total	102		-		85-115	-		
Selenium, Total	100		-		85-115	-		
Silver, Total	100		-		85-115	-		
Zinc, Total	106		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1338399-2								
Mercury, Total	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-3 QC Sample: L2005300-01 Client ID: MS Sample												
Iron, Total	0.394	1	1.50	111		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-3 QC Sample: L2005300-01 Client ID: MS Sample												
Hardness	82.2	66.2	150	102		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-7 QC Sample: L2004803-01 Client ID: MS Sample												
Iron, Total	ND	1	1.17	117		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-7 QC Sample: L2004803-01 Client ID: MS Sample												
Hardness	14.1	66.2	82.4	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338073-3 QC Sample: L2005300-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4355	87		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1149	96		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05249	103		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2028	101		-	-		70-130	-		20
Copper, Total	0.00221	0.25	0.2490	99		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5442	107		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5009	100		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1143	95		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05051	101		-	-		70-130	-		20
Zinc, Total	0.01698	0.5	0.5365	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338399-3 QC Sample: L2005082-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0048	96		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338399-5 QC Sample: L2005082-02 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	94	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-4 QC Sample: L2005300-01 Client ID: DUP Sample						
Iron, Total	0.394	0.389	mg/l	1		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338072-4 QC Sample: L2005300-01 Client ID: DUP Sample						
Hardness	82.2	80.4	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338073-4 QC Sample: L2005300-01 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	0.00221	0.00205	mg/l	8		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01698	0.01591	mg/l	7		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338399-4 QC Sample: L2005082-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1338399-6 QC Sample: L2005082-02 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-01
Client ID: HA20-REARGARAGE-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 12:00
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	41.		mg/l	5.0	NA	1	-	02/10/20 10:27	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	02/06/20 11:10	02/06/20 16:12	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/05/20 20:06	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	02/06/20 06:24	02/06/20 20:33	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/08/20 15:50	02/08/20 21:55	74,1664A	MM
Phenolics, Total	ND		mg/l	0.030	--	1	02/06/20 05:20	02/06/20 08:45	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/06/20 05:00	02/06/20 05:50	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	55.9		mg/l	5.00	--	10	-	02/06/20 17:26	44,300.0	AT

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

SAMPLE RESULTS

Lab ID: L2005306-02
Client ID: HA20-OUTFALL-02052020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/05/20 13:20
Date Received: 02/05/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.103		mg/l	0.075	--	1	02/06/20 06:24	02/06/20 20:34	121,4500NH3-BH	AT

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4
Lab Number: L2005306
Report Date: 03/04/20

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: WG1337571-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/05/20 20:06	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1337648-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/06/20 05:00	02/06/20 05:43	1,7196A	CB
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1337666-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	02/06/20 06:24	02/06/20 20:30	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1337698-1										
Phenolics, Total	ND		mg/l	0.030	--	1	02/06/20 05:20	02/06/20 08:44	4,420.1	MV
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1337816-1										
Cyanide, Total	ND		mg/l	0.005	--	1	02/06/20 11:10	02/06/20 16:00	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1338449-1										
Chloride	ND		mg/l	0.500	--	1	-	02/06/20 16:54	44,300.0	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338726-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/08/20 15:50	02/08/20 21:55	74,1664A	MM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338961-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	02/10/20 10:27	121,2540D	EM

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH-REAR GARAGE

Project Number: 133243-005 SID 4

Lab Number: L2005306

Report Date: 03/04/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1337571-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1337648-2								
Chromium, Hexavalent	99		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1337666-2								
Nitrogen, Ammonia	100		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1337698-2								
Phenolics, Total	88		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1337816-2								
Cyanide, Total	100		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1338449-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338726-2								
TPH	72		-		64-132	-		34

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

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: WG1337571-4 QC Sample: L2005167-01 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.23	92		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337648-4 QC Sample: L2005306-01 Client ID: HA20-REARGARAGE-02052020												
Chromium, Hexavalent	ND	0.1	0.107	107		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1337666-4 QC Sample: L2005306-02 Client ID: HA20-OUTFALL-02052020												
Nitrogen, Ammonia	0.103	4	3.48	84		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337698-4 QC Sample: L2005309-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.40	100		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337816-4 QC Sample: L2005309-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.197	98		-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338449-3 QC Sample: L2005306-01 Client ID: HA20-REARGARAGE-02052020												
Chloride	55.9	40	104	**119**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338726-4 QC Sample: L2005787-01 Client ID: MS Sample												
TPH	ND	20	10.6	**53**	Q	-	-		64-132	-		34

Lab Duplicate Analysis
Batch Quality Control

Project Name: BWFH-REAR GARAGE
Project Number: 133243-005 SID 4

Lab Number: L2005306
Report Date: 03/04/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337571-3 QC Sample: L2005111-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337648-3 QC Sample: L2005306-01 Client ID: HA20-REARGARAGE-02052020						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1337666-3 QC Sample: L2005306-02 Client ID: HA20-OUTFALL-02052020						
Nitrogen, Ammonia	0.103	0.090	mg/l	13		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337698-3 QC Sample: L2005309-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1337816-3 QC Sample: L2005309-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338449-4 QC Sample: L2005306-01 Client ID: HA20-REARGARAGE-02052020						
Chloride	55.9	55.9	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338726-3 QC Sample: L2005787-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338961-2 QC Sample: L2005862-01 Client ID: DUP Sample						
Solids, Total Suspended	740	780	mg/l	5		29

Project Name: BWFH-REAR GARAGE
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2005306-01A	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005306-01B	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005306-01C	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005306-01D	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005306-01E	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		504(14)
L2005306-01F	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		504(14)
L2005306-01G	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		504(14)
L2005306-01H	Vial Na2S2O3 preserved	A	NA		4.5	Y	Absent		504(14)
L2005306-01I	Vial unpreserved	A	NA		4.5	Y	Absent		SUB-ETHANOL(14)
L2005306-01J	Vial unpreserved	A	NA		4.5	Y	Absent		SUB-ETHANOL(14)
L2005306-01K	Vial unpreserved	A	NA		4.5	Y	Absent		SUB-ETHANOL(14)
L2005306-01L	Plastic 250ml NaOH preserved	B	>12	>12	3.3	Y	Absent		HOLD-WETCHEM(),TCN-4500(14)
L2005306-01M	Plastic 250ml HNO3 preserved	A	<2	<2	4.5	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2005306-01N	Plastic 250ml HNO3 preserved	A	<2	<2	4.5	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),CU-2008T(180),FE-UI(180),SE-2008T(180),HG-U(28),AS-2008T(180),AG-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2005306-01O	Plastic 500ml H2SO4 preserved	B	<2	<2	3.3	Y	Absent		NH3-4500(28)
L2005306-01P	Plastic 950ml unpreserved	B	7	7	3.3	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2005306-01Q	Plastic 950ml unpreserved	A	7	7	4.5	Y	Absent		TSS-2540(7)
L2005306-01R	Amber 950ml H2SO4 preserved	B	<2	<2	3.3	Y	Absent		TPHENOL-420(28)
L2005306-01T	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		PCB-608.3(7)
L2005306-01U	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		PCB-608.3(7)

*Values in parentheses indicate holding time in days

Project Name: BWFH-REAR GARAGE
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Report Date: 03/04/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2005306-01V	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2005306-01W	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2005306-01X	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2005306-01Y	Amber 1000ml Na2S2O3	B	7	7	3.3	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2005306-01Z	Amber 1000ml HCl preserved	B	NA		3.3	Y	Absent		TPH-1664(28)
L2005306-01Z1	Amber 1000ml HCl preserved	B	NA		3.3	Y	Absent		TPH-1664(28)
L2005306-02M	Plastic 250ml HNO3 preserved	A	<2	<2	4.5	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2005306-02N	Plastic 250ml HNO3 preserved	A	<2	<2	4.5	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),CU-2008T(180),FE-UI(180),AS-2008T(180),HG-U(28),AG-2008T(180),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2005306-02O	Plastic 500ml H2SO4 preserved	A	<2	<2	4.5	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

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:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

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.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Project Name:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

Data Qualifiers

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:	BWFH-REAR GARAGE	**Lab Number:**	L2005306
Project Number:	133243-005 SID 4	**Report Date:**	03/04/20

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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
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: of

Date Rec'd in Lab: 2/5/20

ALPHA Job #: L2005306

Project Information
- Project Name: BWFH - Rear Garage
- Project Location: 1153 Centre Street, Boston, MA
- Project #: 133243-005 SID 4
- (Use Project name as Project #) ☐
- Project Manager: Lee Vanzler
- ALPHAQuote #:

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

H&A Information
- H&A Client: Brigham and Women's Hospital
- H&A Address: 465 Medford St, Boston, MA 0212-1400
- H&A Phone: 617-866-7400
- H&A Fax: lhoward@haleyaldrich.com
- H&A Email: cworthy@haleyaldrich.com

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

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

Billing Information
- ☑ Same as Client Info
- PO #

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 12. Dissolved Metals ON HOLD (Field Filtered)
Please sample per EPA Approved 2017 RGP Permit methods

Please specify Metals or TAL.

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	1. TSS - 2540	2. TRC-4500	3. TCH-4500 HOLD PACN & ACN	4. 504	5. 8260 & 8260 SIM for Dioxane	6. HEXCR-3500 & Trivalent Chromium	7. TPHENOL-420	8. 8270TCL (inclusing Diethylhexylphthalate)	9. 8270TCL-SIM	10. CL-300	11. Total Metals - Ag, As, Cd, Cr,Cu,Ni,Pb,Sb,Se,Zn,Fe,Hg	12. Dissolved Metals - Ag, As,Ba,Cd,Cr,Cu,Ni,Pb,Sb,Se,Tl,Z	13. Ammonia	14.Total Hardness	15. A2-ALCOHOL (Ethanol)	16. TPH-1664	17. PCB-608	Sample Specific Comments	Total Bottles
05306-01	HA20-RearGarage-02052020	2/5/20	1200	AQ	SDD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Temp - pH -	26
-02	HA20-Outfall-02052020	2/5/20	1322	AQ	↓											X	X	X	X					3

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
	2/5/20 1530		2/5/20 1630
	2/5/20 1802		AAL 2/5/20 1830
	2/5/20 1804		2/5/20 1804

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
L2005306

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: L2005306

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
	HA20-REARGARAGE-02052020	02-05-20 12:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	C Telear	2/6/20		
Form No: AL_subcoc				

February 17, 2020

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

RE: L2005306 **WorkOrder:** 20020442

Dear Melissa Gulli:

TEKLAB, INC received 1 sample on 2/7/2020 9:44:00 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: 20020442
Client Project: L2005306
Report Date: 17-Feb-2020

This reporting package includes the following:

Teklab, Inc. Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 20020442

Client Project: L2005306 **Report Date:** 17-Feb-2020

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: L2005306

Work Order: 20020442
Report Date: 17-Feb-2020

Cooler Receipt Temp: 2.2 °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

Teklab, Inc. Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical

Work Order: 20020442

Client Project: L2005306

Report Date: 17-Feb-2020

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	3/3/2020	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		3/14/2021	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2020	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville
Tennessee	TDEC	04905		3/3/2020	Collinsville

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20020442
Client Project: L2005306
Report Date: 17-Feb-2020
Lab ID: 20020442-001
Client Sample ID: HA20-REARGARAGE-02052020
Matrix: AQUEOUS
Collection Date: 02/05/2020 12:00

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	02/14/2020 11:56	R272986

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20020442
Client Project: L2005306
Report Date: 17-Feb-2020

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

Batch R272986 **SampType:** MBLK Units **mg/L**
SampID: MBLK-021320

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						02/14/2020

Batch R272986 **SampType:** LCS Units **mg/L**
SampID: LCS-021320

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**180**	250.0	0	70.3	70	132	02/14/2020

Batch R272986 **SampType:** MS Units **mg/L**
SampID: 20020442-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**210**	250.0	0	82.0	70	132	02/14/2020

Batch R272986 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 20020442-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**190**	250.0	0	75.5	205.0	8.26	02/14/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2005306

Work Order: 20020442
Report Date: 17-Feb-2020

Carrier: UPS

Received By: KMT

Completed by: Amber M. Dilallo
On: 07-Feb-2020

Reviewed by: Elizabeth A. Hurley
On: 07-Feb-2020

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 2.2
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.

2002042

Subcontract Chain of Custody

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

Alpha Job Number
L2005306

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: L2005306

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
L2002042-001	HA20-REARGARAGE-02052020	02-05-20 12:00	WATER	Ethanol by EPA 1671 Revision A	

Relinquished By:	Date/Time:	Received By:	Date/Time:
C. Lebeau	2/6/20	UPS	2/7/20 0942 0944

Form No: AL_subcoc

2.2°C UPS ice OHSM 2/7/20 VK 2/7/20

ANALYTICAL REPORT

Lab Number:	L2005847
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Lee Vanzler
Phone:	(617) 886-7561
Project Name:	BWFH - REAR GARAGE
Project Number:	133243-006
Report Date:	02/17/20

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: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2005847-01	HA20-INPATIENT-02072020	WATER	1153 CENTRE STREET, BOSTON, MA	02/07/20 10:00	02/07/20

Project Name:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

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:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

Case Narrative (continued)

Report Submission

February 17, 2020: This final report includes the results of all requested analyses.

February 13, 2020: 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.

Microextractables

The WG1339559-2 LCS recovery for 1,2-dibromoethane (79%), associated with L2005847-01 (HA20-INPATIENT-02072020), is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

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: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 02/17/20

ORGANICS

VOLATILES

Project Name: BWFH - REAR GARAGE
Lab Number: L2005847
Project Number: 133243-006
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 02/12/20 21:39
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: BWFH - REAR GARAGE **Lab Number:** L2005847

Project Number: 133243-006 **Report Date:** 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01 Date Collected: 02/07/20 10:00

Client ID: HA20-INPATIENT-02072020 Date Received: 02/07/20

Sample Location: 1153 CENTRE STREET, BOSTON, MA Field Prep: Refer to COC

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	97		60-140
Fluorobenzene	95		60-140
4-Bromofluorobenzene	85		60-140

Project Name: BWFH - REAR GARAGE
Lab Number: L2005847
Project Number: 133243-006
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 02/11/20 20:59
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	101		60-140
4-Bromofluorobenzene	96		60-140

Project Name: BWFH - REAR GARAGE
Lab Number: L2005847
Project Number: 133243-006
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 02/11/20 19:50
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 02/11/20 14:35

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: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 02/11/20 19:00
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 02/11/20 14:35

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1339559-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 02/11/20 19:55
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1339922-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	100		60-140
4-Bromofluorobenzene	115		60-140

Project Name: BWFH - REAR GARAGE **Lab Number:** L2005847

Project Number: 133243-006 **Report Date:** 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 02/12/20 18:34
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1339962-12					
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: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 02/12/20 18:34
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1339962-12					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	96		60-140
Fluorobenzene	96		60-140
4-Bromofluorobenzene	82		60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH - REAR GARAGE

Project Number: 133243-006

Lab Number: L2005847

Report Date: 02/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1339559-2						
1,2-Dibromoethane	**79**	Q	-		80-120	-			A

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1339922-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	103				60-140
4-Bromofluorobenzene	112				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1339962-11								
Methylene chloride	85		-		60-140	-		28
1,1-Dichloroethane	85		-		50-150	-		49
Carbon tetrachloride	85		-		70-130	-		41
1,1,2-Trichloroethane	100		-		70-130	-		45
Tetrachloroethene	90		-		70-130	-		39
1,2-Dichloroethane	95		-		70-130	-		49
1,1,1-Trichloroethane	90		-		70-130	-		36
Benzene	90		-		65-135	-		61
Toluene	95		-		70-130	-		41
Ethylbenzene	80		-		60-140	-		63
Vinyl chloride	85		-		5-195	-		66
1,1-Dichloroethene	85		-		50-150	-		32
cis-1,2-Dichloroethene	85		-		60-140	-		30
Trichloroethene	85		-		65-135	-		48
1,2-Dichlorobenzene	80		-		65-135	-		57
1,3-Dichlorobenzene	75		-		70-130	-		43
1,4-Dichlorobenzene	80		-		65-135	-		57
p/m-Xylene	85		-		60-140	-		30
o-xylene	75		-		60-140	-		30
Acetone	124		-		40-160	-		30
Methyl tert butyl ether	100		-		60-140	-		30
Tert-Butyl Alcohol	110		-		60-140	-		30
Tertiary-Amyl Methyl Ether	90		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1339962-11								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	96				60-140
Fluorobenzene	96				60-140
4-Bromofluorobenzene	82				60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: BWFH - REAR GARAGE

Project Number: 133243-006

Lab Number: L2005847

Report Date: 02/17/20

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: WG1339559-3 QC Sample: L2005904-11 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.249	0.176	**71**	Q	-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.249	0.182	**73**	Q	-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.249	0.176	**71**	Q	-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 02/10/20 20:44
Analyst: JG

Extraction Method: EPA 625.1
Extraction Date: 02/08/20 07:53

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	96		42-122
2-Fluorobiphenyl	92		46-121
4-Terphenyl-d14	110		47-138

Project Name: BWFH - REAR GARAGE
Lab Number: L2005847
Project Number: 133243-006
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 02/13/20 13:10
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 02/08/20 07:56

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	47		25-87
Phenol-d6	37		16-65
Nitrobenzene-d5	84		42-122
2-Fluorobiphenyl	69		46-121
2,4,6-Tribromophenol	90		45-128
4-Terphenyl-d14	84		47-138

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 02/10/20 12:33
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 02/07/20 15:41

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1338436-1					
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	85		42-122
2-Fluorobiphenyl	86		46-121
4-Terphenyl-d14	99		47-138

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 02/09/20 09:55
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 02/08/20 03:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1338587-1					
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	40		16-65
Nitrobenzene-d5	95		42-122
2-Fluorobiphenyl	80		46-121
2,4,6-Tribromophenol	90		45-128
4-Terphenyl-d14	99		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338436-3								
Bis(2-ethylhexyl)phthalate	93		-		29-137	-		82
Butyl benzyl phthalate	91		-		1-140	-		60
Di-n-butylphthalate	94		-		8-120	-		47
Di-n-octylphthalate	91		-		19-132	-		69
Diethyl phthalate	101		-		1-120	-		100
Dimethyl phthalate	106		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	102				42-122
2-Fluorobiphenyl	98				46-121
4-Terphenyl-d14	107				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338587-2								
Acenaphthene	84		-		60-132	-		30
Fluoranthene	86		-		43-121	-		30
Naphthalene	81		-		36-120	-		30
Benzo(a)anthracene	92		-		42-133	-		30
Benzo(a)pyrene	91		-		32-148	-		30
Benzo(b)fluoranthene	93		-		42-140	-		30
Benzo(k)fluoranthene	82		-		25-146	-		30
Chrysene	83		-		44-140	-		30
Acenaphthylene	76		-		54-126	-		30
Anthracene	84		-		43-120	-		30
Benzo(ghi)perylene	96		-		1-195	-		30
Fluorene	84		-		70-120	-		30
Phenanthrene	89		-		65-120	-		30
Dibenzo(a,h)anthracene	94		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	105		-		1-151	-		30
Pyrene	85		-		70-120	-		30
Pentachlorophenol	70		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338587-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	52				25-87
Phenol-d6	40				16-65
Nitrobenzene-d5	89				42-122
2-Fluorobiphenyl	74				46-121
2,4,6-Tribromophenol	90				45-128
4-Terphenyl-d14	87				47-138

PCBS

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA

Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 02/10/20 16:50
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 02/09/20 02:05
Cleanup Method: EPA 3665A
Cleanup Date: 02/09/20
Cleanup Method: EPA 3660B
Cleanup Date: 02/09/20

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	71		37-123	B
Decachlorobiphenyl	68		38-114	B
2,4,5,6-Tetrachloro-m-xylene	69		37-123	A
Decachlorobiphenyl	63		38-114	A

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 02/09/20 11:45
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 02/08/20 17:01
Cleanup Method: EPA 3665A
Cleanup Date: 02/08/20
Cleanup Method: EPA 3660B
Cleanup Date: 02/09/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1338738-1						
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	81		37-123	B
Decachlorobiphenyl	84		38-114	B
2,4,5,6-Tetrachloro-m-xylene	84		37-123	A
Decachlorobiphenyl	81		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338738-2									
Aroclor 1016	77		-		50-140	-		36	A
Aroclor 1260	63		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79				37-123	B
Decachlorobiphenyl	79				38-114	B
2,4,5,6-Tetrachloro-m-xylene	79				37-123	A
Decachlorobiphenyl	74				38-114	A

METALS

Project Name: BWFH - REAR GARAGE
Lab Number: L2005847
Project Number: 133243-006
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/07/20 10:00
Date Received: 02/07/20
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
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00048		mg/l	0.00020	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Copper, Total	0.00139		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Iron, Total	0.104		mg/l	0.050	--	1	02/08/20 13:27	02/10/20 15:58	EPA 3005A	19,200.7	BV
Lead, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	02/08/20 13:00	02/10/20 13:18	EPA 245.1	3,245.1	GD
Nickel, Total	0.01168		mg/l	0.00200	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/08/20 13:27	02/10/20 10:36	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		02/10/20 10:36	NA	107,-	

Project Name: BWFH - REAR GARAGE **Lab Number:** L2005847

Project Number: 133243-006 **Report Date:** 02/17/20

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: WG1338681-1										
Antimony, Total	ND		mg/l	0.00400	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	02/08/20 13:27	02/10/20 09:05	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	02/08/20 13:27	02/10/20 09:05	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: WG1338683-1										
Iron, Total	ND		mg/l	0.050	--	1	02/08/20 13:27	02/10/20 13:06	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1338685-1										
Mercury, Total	ND		mg/l	0.0002	--	1	02/08/20 13:00	02/10/20 12:17	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH - REAR GARAGE

Project Number: 133243-006

Lab Number: L2005847

Report Date: 02/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1338681-2								
Antimony, Total	87		-		85-115	-		
Arsenic, Total	104		-		85-115	-		
Cadmium, Total	110		-		85-115	-		
Chromium, Total	102		-		85-115	-		
Copper, Total	100		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	101		-		85-115	-		
Selenium, Total	104		-		85-115	-		
Silver, Total	101		-		85-115	-		
Zinc, Total	113		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1338683-2								
Iron, Total	109		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1338685-2								
Mercury, Total	105		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338681-3 QC Sample: L2005838-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4771	95		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1281	107		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05625	110		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1998	100		-	-		70-130	-		20
Copper, Total	0.00349	0.25	0.2502	99		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5321	104		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5083	102		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1165	97		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04940	99		-	-		70-130	-		20
Zinc, Total	0.1272	0.5	0.6917	113		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338681-5 QC Sample: L2005838-02 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4473	89		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1268	106		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05323	104		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2043	102		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2597	104		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5403	106		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5226	104		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1217	101		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05081	102		-	-		70-130	-		20
Zinc, Total	0.05484	0.5	0.6310	115		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338683-3 QC Sample: L2005838-01 Client ID: MS Sample									
Iron, Total	2.98	1	3.93	95	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338683-7 QC Sample: L2005838-02 Client ID: MS Sample									
Iron, Total	1.29	1	2.36	107	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338685-3 QC Sample: L2005838-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0048	95	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338685-5 QC Sample: L2005403-01 Client ID: MS Sample									
Mercury, Total	0.0004	0.005	0.0051	96	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: BWFH - REAR GARAGE

Project Number: 133243-006

Lab Number: L2005847

Report Date: 02/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338681-4 QC Sample: L2005838-01 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	0.00349	0.00332	mg/l	5		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.1272	0.1237	mg/l	3		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338681-6 QC Sample: L2005838-02 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	ND	ND	mg/l	NC	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	ND	ND	mg/l	NC	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.05484	0.05860	mg/l	7	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338683-4 QC Sample: L2005838-01 Client ID: DUP Sample					
Iron, Total	2.98	2.88	mg/l	3	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338683-8 QC Sample: L2005838-02 Client ID: DUP Sample					
Iron, Total	1.29	1.32	mg/l	2	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338685-4 QC Sample: L2005838-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1338685-6 QC Sample: L2005403-01 Client ID: DUP Sample					
Mercury, Total	0.0004	0.0003	mg/l	20	20

INORGANICS
&
MISCELLANEOUS

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006
Lab Number: L2005847
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2005847-01
Client ID: HA20-INPATIENT-02072020
Sample Location: 1153 CENTRE STREET, BOSTON, MA
Date Collected: 02/07/20 10:00
Date Received: 02/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	6.2		mg/l	5.0	NA	1	-	02/10/20 11:43	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	02/09/20 14:50	02/10/20 11:56	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/07/20 23:51	121,4500CL-D	AS
Nitrogen, Ammonia	0.099		mg/l	0.075	--	1	02/09/20 19:09	02/11/20 00:04	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/08/20 15:50	02/08/20 21:55	74,1664A	MM
Phenolics, Total	ND		mg/l	0.030	--	1	02/12/20 05:05	02/12/20 09:11	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/08/20 08:30	02/08/20 09:30	1,7196A	JA
Anions by Ion Chromatography - Westborough Lab										
Chloride	920.		mg/l	50.0	--	100	-	02/10/20 19:14	44,300.0	DP

Project Name: BWFH - REAR GARAGE **Lab Number:** L2005847

Project Number: 133243-006 **Report Date:** 02/17/20

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: WG1338543-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/07/20 23:51	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338611-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/08/20 08:30	02/08/20 09:24	1,7196A	JA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338726-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/08/20 15:50	02/08/20 21:55	74,1664A	MM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338848-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	02/09/20 19:09	02/10/20 23:48	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338869-1										
Cyanide, Total	ND		mg/l	0.005	--	1	02/09/20 14:50	02/10/20 11:18	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1338969-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	02/10/20 11:43	121,2540D	EM
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1339288-1										
Chloride	ND		mg/l	0.500	--	1	-	02/10/20 18:52	44,300.0	DP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1339792-1										
Phenolics, Total	ND		mg/l	0.030	--	1	02/12/20 05:05	02/12/20 09:10	4,420.1	MV

Lab Control Sample Analysis

Batch Quality Control

Project Name: BWFH - REAR GARAGE

Project Number: 133243-006

Lab Number: L2005847

Report Date: 02/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338543-2								
Chlorine, Total Residual	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338611-2								
Chromium, Hexavalent	102		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338726-2								
TPH	72		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338848-2								
Nitrogen, Ammonia	93		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1338869-2								
Cyanide, Total	101		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1339288-2								
Chloride	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1339792-2								
Phenolics, Total	87		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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: WG1338543-4 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020												
Chlorine, Total Residual	ND	0.25	0.28	112		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338611-4 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020												
Chromium, Hexavalent	ND	0.1	0.096	96		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338726-4 QC Sample: L2005787-01 Client ID: MS Sample												
TPH	ND	20	10.6	**53**	Q	-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338848-4 QC Sample: L2005862-02 Client ID: MS Sample												
Nitrogen, Ammonia	0.388	4	0.528	**4**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338869-4 QC Sample: L2005862-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.199	100		-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1339288-3 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020												
Chloride	920	400	1310	97		-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1339792-4 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020												
Phenolics, Total	ND	0.4	0.38	94		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338543-3 QC Sample: L2005634-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338611-3 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338726-3 QC Sample: L2005787-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338848-3 QC Sample: L2005862-02 Client ID: DUP Sample						
Nitrogen, Ammonia	0.388	0.487	mg/l	**23**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338869-3 QC Sample: L2005862-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1338969-2 QC Sample: L2005810-01 Client ID: DUP Sample						
Solids, Total Suspended	50	52	mg/l	4		29
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1339288-4 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020						
Chloride	920	932	mg/l	1		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1339792-3 QC Sample: L2005847-01 Client ID: HA20-INPATIENT-02072020						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

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(*)
L2005847-01A	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01A1	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01B	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01B1	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01C	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01C1	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2005847-01D	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		504(14)
L2005847-01E	Vial Na2S2O3 preserved	A	NA		2.3	Y	Absent		504(14)
L2005847-01F	Vial unpreserved	A	NA		2.3	Y	Absent		SUB-ETHANOL(14)
L2005847-01G	Vial unpreserved	A	NA		2.3	Y	Absent		SUB-ETHANOL(14)
L2005847-01H	Vial unpreserved	A	NA		2.3	Y	Absent		SUB-ETHANOL(14)
L2005847-01J	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		HOLD-METAL-DISSOLVED(180)
L2005847-01K	Plastic 250ml HNO3 preserved	A	<2	<2	2.3	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),AG-2008T(180),CR-2008T(180),SB-2008T(180),PB-2008T(180)
L2005847-01L	Plastic 250ml NaOH preserved	A	>12	>12	2.3	Y	Absent		TCN-4500(14)
L2005847-01M	Plastic 500ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		NH3-4500(28)
L2005847-01N	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		CL-300(28),HOLD-WETCHEM(),HEXCR-7196(1),TRC-4500(1)
L2005847-01P	Plastic 950ml unpreserved	A	7	7	2.3	Y	Absent		TSS-2540(7)
L2005847-01Q	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		PCB-608.3(7)
L2005847-01R	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		PCB-608.3(7)
L2005847-01S	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		625.1-RGP(7)
L2005847-01T	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		625.1-RGP(7)

*Values in parentheses indicate holding time in days

Project Name: BWFH - REAR GARAGE
Project Number: 133243-006

Lab Number: L2005847
Report Date: 02/17/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2005847-01U	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		625.1-SIM-RGP(7)
L2005847-01V	Amber 1000ml Na2S2O3	A	7	7	2.3	Y	Absent		625.1-SIM-RGP(7)
L2005847-01W	Amber 950ml H2SO4 preserved	A	<2	<2	2.3	Y	Absent		TPHENOL-420(28)
L2005847-01X	Amber 1000ml HCl preserved	A	NA		2.3	Y	Absent		TPH-1664(28)
L2005847-01Y	Amber 1000ml HCl preserved	A	NA		2.3	Y	Absent		TPH-1664(28)

*Values in parentheses indicate holding time in days

Project Name:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

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:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

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.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

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.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Report Format: Data Usability Report

Project Name:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

Data Qualifiers

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:	BWFH - REAR GARAGE	**Lab Number:**	L2005847
Project Number:	133243-006	**Report Date:**	02/17/20

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.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
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: 2/7/20

ALPHA Job #: L2005847

Project Information

Project Name: BWFH - Rear Garage
Project Location: 1153 Centre Street, Boston, MA
Project #: 133243-006
(Use Project name as Project #) ☐
Project Manager: Lee Vanzler
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
(only if pre approved) ☐ # of Days:

H&A Information

H&A Client: Brigham and Women's Hospital
H&A Address: 465 Medford St, Boston, MA 0212-1400
H&A Phone: 617-886-7400
H&A Fax: lhoward@haleyaldrich.com
H&A Email: cworthy@haleyaldrich.com

Deliverables

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

Regulatory Requirements (Program/Criteria)

Note: Select State from menu & identify criteria.

Billing Information

☑ Same as Client Info
PO #

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 12. 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	6. HEXCR-3500 & Trivalent Chromium	7. TPHENOL-420	8. 8270TCL (including Diethylhexylphthalate)	9. 8270TCL-SIM	10. CL-300	11. Total Metals - Ag, As, Cd, Cr,Cu,Ni,Pb,Sb,Se,Zn,Fe,Hg	12. Dissolved Metals - Ag, As,Ba,Cd,Cr,Cu,Ni,Pb,Sb,Se,Tl,Zn	13. Ammonia	14.Total Hardness	15. A2-ALCOHOL (Ethanol)	16. TPH-1664	17. PCB-608	Total # Bottles
05647-01	HA20-Inpatient-02072020	2/7	1000	AQ	SRF	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	26

Sample Filtration

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

Sample Specific Comments: Temp - pH -

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
	2/7/20 1400		2/7/20 16:30
	2/7/20 16:32		2-7-20 16:32
	2-7-20 1755		2-7-20 1755

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
L2005847

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: L2005847

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
	HA20-INPATIENT-02072020	02-07-20 10:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		2/10/20		
Form No: AL_subcoc				

February 17, 2020

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

RE: L2005847 **WorkOrder:** 20020598

Dear Melissa Gulli:

TEKLAB, INC received 1 sample on 2/11/2020 9:43:00 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: 20020598
Client Project: L2005847
Report Date: 17-Feb-2020

This reporting package includes the following:

Teklab, Inc. Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 20020598

Client Project: L2005847 **Report Date:** 17-Feb-2020

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
Work Order: 20020598
Client Project: L2005847
Report Date: 17-Feb-2020

Cooler Receipt Temp: 0.8 °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

Teklab, Inc.
Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20020598
Client Project: L2005847
Report Date: 17-Feb-2020

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	3/3/2020	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		3/14/2021	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2020	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville
Tennessee	TDEC	04905		3/3/2020	Collinsville

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20020598
Client Project: L2005847
Report Date: 17-Feb-2020
Lab ID: 20020598-001
Client Sample ID: HA20-INPATIENT-02072020
Matrix: AQUEOUS
Collection Date: 02/07/2020 10:00

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	02/14/2020 10:41	R272986

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2005847

Work Order: 20020598
Report Date: 17-Feb-2020

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

Batch R272986 **SampType:** MBLK Units **mg/L**
SampID: MBLK-021320

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						02/14/2020

Batch R272986 **SampType:** LCS Units **mg/L**
SampID: LCS-021320

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**180**	250.0	0	70.3	70	132	02/14/2020

Batch R272986 **SampType:** MS Units **mg/L**
SampID: 20020442-001AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**210**	250.0	0	82.0	70	132	02/14/2020

Batch R272986 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 20020442-001AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**190**	250.0	0	75.5	205.0	8.26	02/14/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2005847

Work Order: 20020598
Report Date: 17-Feb-2020

Carrier: UPS

Received By: KMT

Completed by: Amber M. Dilallo
On: 11-Feb-2020

Reviewed by: Elizabeth A. Hurley
On: 11-Feb-2020

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 0.8
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.

20005918

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2005847

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: L2005847

Report to include Method Blank, LCS/LCSD:

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

Official Use Only 2/11/20

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
20005918-001	HA20-INPATIENT-02072020	02-07-20 10:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		2/10/20	UPS	2/11/20 0943
Form No: AL_subcoc				

2/11/20