



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

19 April 2019
File No. 129204-009

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

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

Subject: NPDES RGP Permit Application - Temporary Construction Dewatering
125-131 Sumner Street
East Boston, Massachusetts
RTN 3-33981 and 3-34165

Dear Ms. Puleo:

On behalf of our client, WinnDevelopment, Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission for a NPDES RGP temporary construction dewatering permit during building construction activities at the subject site located at the 125-131 Sumner Street property (hereafter referred to as the "Site") in East Boston, Massachusetts, as shown on Figure 1. The information presented herein has been prepared to follow requirements of the 2017 US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) General Remediation General Permit (RGP). A copy of the completed Notice of Intent (NOI) form is enclosed as Appendix A.

EXISTING SITE CONDITIONS

The Site is an approximately 42,000 square foot (sq ft) parcel of land developed with four 2-story brick, apartment buildings owned by the Boston Housing Authority (BHA) known as Heritage Apartments, located at 125-131 Sumner Street in East Boston, Massachusetts as shown on Figures 1 and 2. Exterior Site grades are approximately Elevation (El.) 17 to 20 Boston City Base Datum (BCB). Areas not occupied by apartment buildings are developed with asphalt paved driveways and parking areas as well as a small landscaped area in the middle of the Site between the four apartment buildings. The Site is bordered by Sumner Street and residential buildings to the north, Clipper Ship Lane and the Heritage Apartments to the east, Father Jacobbe Road to the south, and the Carlton Wharf Apartments to the west. The apartments are now vacant. Residents have been relocated to other apartments so that the Site can be prepared for redevelopment.

SITE HISTORY

Prior to the current Site use, the Site was part of the Boston Harbor until 1833 when the area was filled with material excavated from the nearby Smith Hill. The Site was used for industrial uses from 1888 and included use of the Site by National Tube Works Company for brass foundry, copper and iron storage, copper sawing and planning, pipe cutting and brass finishing, and by Merchants Wool Scouring Company for wool storage and scouring, wool warehouse, and wool drying. An auto-repair shop was also present at the Site from approximately 1950 to 1964 before being repurposed as a wool warehouse for Merchants Wool Scouring Company. The existing apartment buildings and associated improvements were constructed in 1975.

ENVIRONMENTAL CONDITIONS AND REGULATORY BACKGROUND

Two releases of oil or hazardous material are documented for the Site:

RTN 3-34165 (Historic Fill) - Benzo(a)pyrene, copper, lead and arsenic were detected in soil samples above the applicable RCS-1 Reportable Concentrations in Soil and constituted a 120-day reporting condition under the Massachusetts Contingency Plan (MCP). A Release Notification Form (RNF) was filed by BHA on 6 March 2017 and MassDEP assigned the Release Tracking Number (RTN) 3-34165 to the release. Based on the results of a March 2017 sampling and testing program, BHA submitted a revised RNF (BWSC103) on 12 July 2017 for the historic fill release to include the petroleum compounds that were not originally included as part of the release tracked by RTN 3-34165.

In addition, asbestos containing materials (ACM) were identified in the Historic Fill. The presence of ACM is not considered reportable under the MCP; however, the soils impacted with ACM are regulated by the Massachusetts Department of Environmental Protection (MassDEP) Bureau of Air and Waste under the Air Pollution Control Regulations (310 CMR 7.15). A Non-Traditional Asbestos Abatement Work Plan (NTWP) will be submitted to and approved by MassDEP prior to the start of work.

RTN 3-33981 (Main Site RTN) – This RTN originally was limited to the presence of trichloroethylene (TCE) detected in one well at the property above the applicable RCGW-2 Reportable Concentration. Monitoring well B101(MW) is located within 30 ft of an occupied residential dwelling and the depth to groundwater was observed at 8 ft below ground surface. In accordance with 310 CMR 40.0313(4)(f), the detection of TCE above RCGW-2 within 30 ft of an occupied residential dwelling was considered a Condition of Substantial Release Migration (SRM) and required notification to the MassDEP within 72-hours of the Potentially Responsible Party obtaining knowledge of the release.

The current property owner, BHA, provided verbal notification to MassDEP regarding the Condition of SRM on 9 December 2016. MassDEP assigned RTN 3-33981 to the release.

BHA conducted an assessment-only Immediate Response Action to evaluate the Condition of SRM. Immediate Response Actions included the collection of seven soil gas samples from newly installed soil gas sampling points inside the apartment buildings present at the property. The soil gas samples were analyzed for chlorinated volatile organic compounds (VOCs) by TO-15 SIM. Results of the soil gas sampling did not detect concentrations of chlorinated VOCs exceeding MassDEP residential sub-slab soil

gas screening values. Based on the results of the soil gas sampling, BHA concluded that conditions at the Site were stable, the vapor intrusion pathway was not likely to be of concern for the current Site conditions, and further testing, including indoor air testing, was not necessary. BHA filed a combined Release Notification and Immediate Response Action Completion Report for RTN 3-33981 to MassDEP on 7 February 2017.

An MCP Phase I and Tier II Classification submittal was made for RTN 3-33981 on 9 December 2017. In accordance with the MCP at 310 CMR 40.0502(4), RTN 3-34165 was linked to RTN 3-33981 and classified as Tier II. RTN 3-34165 is now closed on the MassDEP Database. Response actions at the Site related to Site development will be undertaken under the main Site RTN 3-33981 which now includes contaminants originally listed under RTN 3-34165.

Based on the results of a soil testing program conducted in July 2018, a revised RNF was submitted to MassDEP under RTN 3-33981 to report the detection of chlorinated solvents in soil above RCS-1.

PROPOSED CONSTRUCTION

Redevelopment plans for the Site include demolition of the existing buildings and construction of two new residential buildings as shown on Figure 2. No basements are planned. The new residential buildings will occupy approximately 21,000 sf of the 42,000 sq ft Site, with the majority of the exterior area planned as pavement or hardscape with minimal landscaped areas and tree pits. The first floor of the proposed buildings is planned to range from El. 20 to El. 22.75, approximately 2 to 4 ft above existing grades.

Historically, groundwater level measurements ranged from El. 10 to 12, corresponding to depths of approximately 8 to 10 ft below ground surface. Groundwater level measurements are heavily influenced by daily tidal action in Boston Harbor. Area groundwater levels are also influenced by numerous other factors including season, precipitation, construction activity in the area, below-grade structures, and leakage from utilities. As a result, groundwater levels observed during and following construction may vary from those observed in the observation wells.

CURRENT GROUNDWATER QUALITY INFORMATION

A total of thirteen groundwater samples have been collected at the Site over five separate sampling events (November 2016, March 2017, November 2017, February 2018 and April 2018). During the November 2016 subsurface exploration program, TCE was detected in a sample collected from a previously installed monitoring well at the property (B101(MW)) at 5.2 ug/l, which is slightly above the applicable RCGW-2 Reportable Concentration.

During each of the 2017 and 2018 sampling events, one groundwater sample was collected from monitoring wells B101(MW), A2(OW) and C2(OW). A total of twelve groundwater samples were submitted to Alpha Analytical Laboratory (Alpha) of Westborough, MA, for chemical analysis of VOCs. The groundwater samples did not detect VOCs above the applicable RCGW-2 Reportable Concentrations. The location of the observation wells are shown on Figure 2.

On 13 March 2019, one sample was collected from monitoring well B101(MW) and submitted to Alpha 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, polychlorinated biphenyls, total suspended solids, chloride, total cyanide, total phenolics, and total residual chlorine.

A summary of the groundwater quality data is provided in Table I. Copies of the laboratory data reports are included in Appendix B.

ETHANOL SAMPLING

Ethanol sampling was not conducted on the groundwater sample as Site history does not suggest that ethanol was stored at the property, nor that a petroleum product containing ethanol was released at the Site. Ethanol has been increasingly used in fuels since 2006 (according to the 2016 NOI Fact Sheet), and according to Site history, the Site has been a residential apartment building since 1975.

RECEIVING WATERS SAMPLING AND DILUTION FACTOR

On 13 March 2019, one sample was collected adjacent to the Site in Boston Harbor and submitted to Alpha Analytical to be analyzed for salinity, pH, and ammonia. The laboratory data report is included in Appendix B. The results of the surface water sampling program are provided in Table I.

The pH and temperature readings from the Site on the day of sampling were used to calculate the Site Water Quality Based Effluent Limitations (WQBELs). It is our understanding that since the receiving water is a saltwater body in Massachusetts, the dilution factor is assumed to be 1:1.

EFFLUENT CRITERIA DETERMINATION

Groundwater and Receiving Water data were input into the WQBEL Calculation spreadsheet and used to calculate the effluent criteria for the Site. Copies of the "EnterData" and "SaltwaterResults" tabs from the excel file provided as an additional resource by EPA are included in Appendix C. The effluent limitation calculations are included for reference in Table I.

DEWATERING SYSTEM AND OFF-SITE DISCHARGE

During construction of the building, it will be necessary to perform temporary dewatering to dewater the excavation, control surface water runoff from precipitation, groundwater seepage, and construction-generated water, and to enable construction to be completed in-the-dry. Construction and construction dewatering activities are currently anticipated to be required for a period of up to 18 months. On average, we estimate effluent discharge rates of about 50 to 75 gallons per minute (gpm) or less, with occasional peak flows of approximately 100 gpm during significant precipitation events. Temporary dewatering will be conducted from sumps located within the excavation.

Construction dewatering will include piping and discharging to a storm drain located near the Site that discharges into the Boston Harbor through an outfall south of the Site extending out from the corner of

Clippership Lane as shown on Figure 3. This outfall was recently constructed and doesn't have an official designation. For the purposes of this report, we will be designating the outfall as the "Clippership Lane Outfall". The proposed discharge route is shown on Figure 2 and 3. An effluent treatment system will be designed and implemented by the Contractor to meet the applicable 2017 RGP Discharge Effluent Criteria. Prior to discharge, collected water will be routed through a sedimentation tank and bag filters (5-micron bag filters are anticipated to be required by the MassDEP-approved NTWP) to remove suspended solids and undissolved chemical constituents, as shown on Figure 4. Typical dewatering treatment system product documents are included in Appendix D. A Notice of Change (NOC) will be submitted to EPA if additional treatment components need to be mobilized at the Site.

DOCUMENTATION OF NATIONAL HISTORIC PRESERVATION ACT ELIGIBILITY REQUIREMENTS

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

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 F. Based on the results of the determination, the project and action area are considered to meet FWS Criterion A as no listed species or critical habitat have been established to be present within the project action area. Additionally, a MassDEP Phase 1 Site Assessment Map is included in Appendix F, which confirms that no critical habitats are present at the Site.

It is our understanding that listed species under the jurisdiction of National Marine Fisheries Service (NMFS) are the Atlantic Sturgeon and the Shortnose Sturgeon, as well as two species of whales (North Atlantic Right Whale and Fin Whale) and four species of sea turtles (Loggerhead Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Green Sea Turtle) in the marine environment. Based upon our review of National Oceanic and Atmospheric Administration (NOAA) Protected Resources Section 7 Program Species Information, accessed by Haley & Aldrich on 30 January 2019, no listed species under the jurisdiction of NMFS have been established to be present within the project action area. Tables providing the regions and nearshore areas of importance for each of the NMFS listed species are provided in Appendix F.

SUPPLEMENTAL INFORMATION

An application for a temporary construction dewatering permit is being submitted to the City of Boston; a copy of the application is provided in Appendix G. Approval will be received prior to the start of discharge. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the Site.

Owner and Operator Information

Owners:

Boston Housing Authority (BHA)
52 Chauncy Street
Boston, MA 02111
Attn: William McGonagle

Operator:

Cranshaw Construction
2310 Washington Street
Newton Lower Falls, MA 02462
Attn: Travis Smith

WinnDevelopment
6 Faneuil Hall Marketplace
Boston, MA 02109
Attn: Christopher Fleming


CLOSING

Thank you for your consideration. Please feel free to contact us should you have any questions or require additional information.

Sincerely yours,
HALEY & ALDRICH, INC.



Samantha Butwill, EIT
Engineer



Michael J Cronan, LSP (MA)
Senior Project Manager | Associate

Attachments:

- Table I – Summary of Water Quality Data
- Figure 1 – Project Locus
- Figure 2 – Site and Subsurface Exploration Location Plan
- Figure 3 – Proposed Discharge and Outfall Location Plan
- Figure 4 – Proposed Treatment Schematic
- Appendix A – Notice of Intent (NOI)
- Appendix B – Laboratory Data Reports
- Appendix C – Effluent Limit Calculations
- Appendix D – Typical Treatment System Products
- Appendix E – National Register of Historic Places Documentation
- Appendix F – Endangered Species Act Documentation
- Appendix G – Copy of City of Boston Dewatering Permit Application

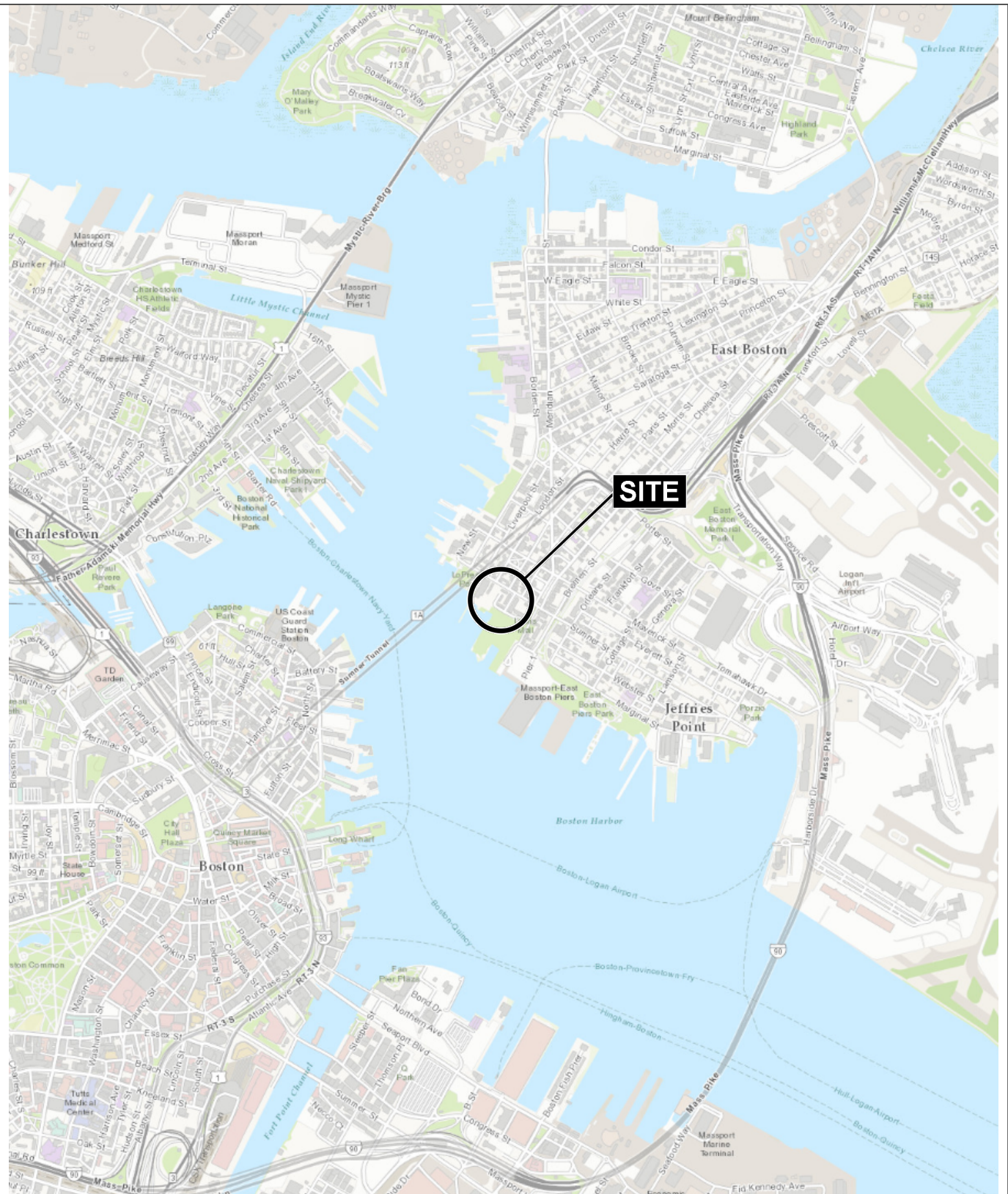
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TABLE I
SUMMARY OF WATER QUALITY DATA
125-131 SUMNER STREET
BOSTON,MA
FILE NO. 129204-009

SAMPLE NAME SAMPLING DATE LAB SAMPLE ID	Regulatory Criteria		SOURCE WATER	RECEIVING WATER	PREVIOUSLY COLLECTED SITE DATA												
	MCP 2014 REPORTABLE CONCENTRATION	2017 NPDES RGP Project-Specific Effluent Limits	B101 (MW) 3/13/2019	SURFACE WATER 3/13/2019	A2(OW)_20171116 11/16/2017	A2(OW)_20180206 2/6/2018	A2(OW)_20180427 4/27/2018	A2_31617 3/16/2017	B101 (MW)_20180427 4/27/2018	B101(MW)_20171116 11/16/2017	B101(MW)_20180206 2/6/2018	B101-(MW) 11/15/2016	B101_31617 3/16/2017	C2(OW)_20171116 11/16/2017	C2(OW)_20180206 2/6/2018	C2(OW)_20180427 4/27/2018	C2_31617 3/16/2017
	RCGW-2 2014	Limits	L1909859-01	L1909861-01	L1742436-02	L1804136-02	L1815179-02	L1708040-01	L1815179-01	L1742436-01	L1804136-01	L1637130-04	L1708040-02	L1742436-03	L1804136-03	L1815179-03	L1708040-03
Volatile Organics Compounds (ug/l)																	
SUM Of BTEX Compounds	NA	100	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of Volatile Organic Compounds	NA	NA	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCP Volatile Organic Compounds (ug/L)																	
2-Butanone	50000	NA	-	-	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	12
Acetone	50000	NA	-	-	ND(5)	ND(5)	ND(5)	23	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	18
cis-1,2-Dichloroethene	20	NA	-	-	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	1.2	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
Tetrachloroethene	50	NA	-	-	ND(1)	ND(1)	ND(1)	1.4	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	1.9
Trichloroethene	5	NA	-	-	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	5.2	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
Total MCP VOCs	NA	NA	-	-	ND	ND	ND	24.4	ND	ND	ND	7.6	ND	ND	ND	ND	31.9
Semivolatile Organics Compounds (ug/l)																	
SUM of Total Phthalates	NA	190	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of Group II PAHs	NA	100	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM of Semi-Volatile Organic Compounds (SIM)	NA	NA	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCP Semivolatile Organic Compounds (ug/L)																	
Naphthalene	700	NA	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-
Total MCP SVOCs	NA	NA	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (ug/l)																	
TPH, SGT-HEM	5000	5000	ND (4000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Extractable Petroleum Hydrocarbons (ug/L)																	
C11-C22 Aromatics	NA	NA	-	-	-	-	-	ND(100)	-	-	-	-	-	-	-	-	-
C11-C22 Aromatics, Adjusted	5000	NA	-	-	-	-	-	ND(100)	-	-	-	-	-	-	-	-	-
C19-C36 Aliphatics	50000	NA	-	-	-	-	-	ND(100)	-	-	-	-	-	-	-	-	-
C9-C18 Aliphatics	5000	NA	-	-	-	-	-	ND(100)	-	-	-	-	-	-	-	-	-
Volatile Petroleum Hydrocarbons (ug/L)																	
C5-C8 Aliphatics	NA	NA	-	-	-	-	-	ND(50)	-	-	-	-	-	-	-	-	-
C5-C8 Aliphatics, Adjusted	3000	NA	-	-	-	-	-	ND(50)	-	-	-	-	-	-	-	-	-
C9-C10 Aromatics	4000	NA	-	-	-	-	-	ND(50)	-	-	-	-	-	-	-	-	-
C9-C12 Aliphatics	NA	NA	-	-	-	-	-	ND(50)	-	-	-	-	-	-	-	-	-
C9-C12 Aliphatics, Adjusted	5000	NA	-	-	-	-	-	ND(50)	-	-	-	-	-	-	-	-	-
Total Metals (ug/l)																	
Antimony	8000	206	ND (4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	900	104	1.77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	4	10.2	ND (0.2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Trivalent	600	323	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium, Hexavalent	300	323	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	300	323	ND (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	100000	3.7	8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	NA	5000	898	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	10	160	2.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	20	0.739	ND (0.2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	200	1450	ND (2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	100	235.8	ND (5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	7	35.1	ND (0.4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	900	420	ND (10)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MCP Dissolved Metals (ug/L)																	
Arsenic, Dissolved	900	NA	-	-	-	-	-	ND(5)	-	-	-	-	-	-	-	-	-
Barium, Dissolved	50000	NA	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-
Cadmium, Dissolved	4	NA	-	-	-	-	-	ND(4)	-	-	-	-	-	-	-	-	-
Chromium, Dissolved	300	NA	-	-	-	-	-	ND(10)	-	-	-	-	-	-	-	-	-
Copper, Dissolved	100000	NA	-	-	-	-	-	ND(10)	-	-	-	-	-	-	-	-	-
Lead, Dissolved	10	NA	-	-	-	-	-	ND(10)	-	-	-	-	-	-	-	-	-
Mercury, Dissolved	20	NA	-	-	-	-	-	ND(0.2)	-	-	-	-	-	-	-	-	-
Selenium, Dissolved	100	NA	-	-	-	-	-	ND(10)	-	-	-	-	-	-	-	-	-
Silver, Dissolved	7	NA	-	-	-	-	-	ND(7)	-	-	-	-	-	-	-	-	-
Polychlorinated Biphenyls (ug/l)																	
SUM of PCBs	5	0.000064	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other																	
Chloride (ug/l)	NA	Report	250000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residual Chloride (ug/l)	NA	7.5	ND (20)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cyanide (ug/l)	30	178000	ND (5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (ug/l)	NA	NA	148000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen, Ammonia (ug/l)	NA	Report	10100	489	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Phenolics (ug/l)	NA	1080	ND (30)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salinity (SU)	NA	NA	ND (2)	16	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	NA	6.5 - 8.7	7.16	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature (C)	NA	NA	10.5	6.4	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (ug/l)	NA	30000	ND (5000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

- Volatile Organic, Semi-Volatile Organic, and Polychlorinated Biphenyl analytes detected in at least one sample are reported herein. For a complete list of analytes see the laboratory data sheets.
- Bold values indicate an exceedance of the **RCGW-2** criteria. RCGW-2 for metals is based on dissolved concentrations.
- Underlined values indicate an exceedance of the NPDES RGP criteria.
- Bold underlined values indicate an exceedance of the **RCGW-2 and NPDES RGP** criteria. RCGW-2 for metals is based on dissolved concentrations.



MAP SOURCE: ESRI

SITE COORDINATES: 42°22'9"N, 71°2'29"W

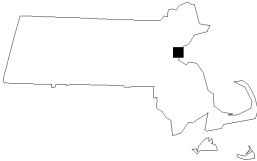
**HALEY
ALDRICH**

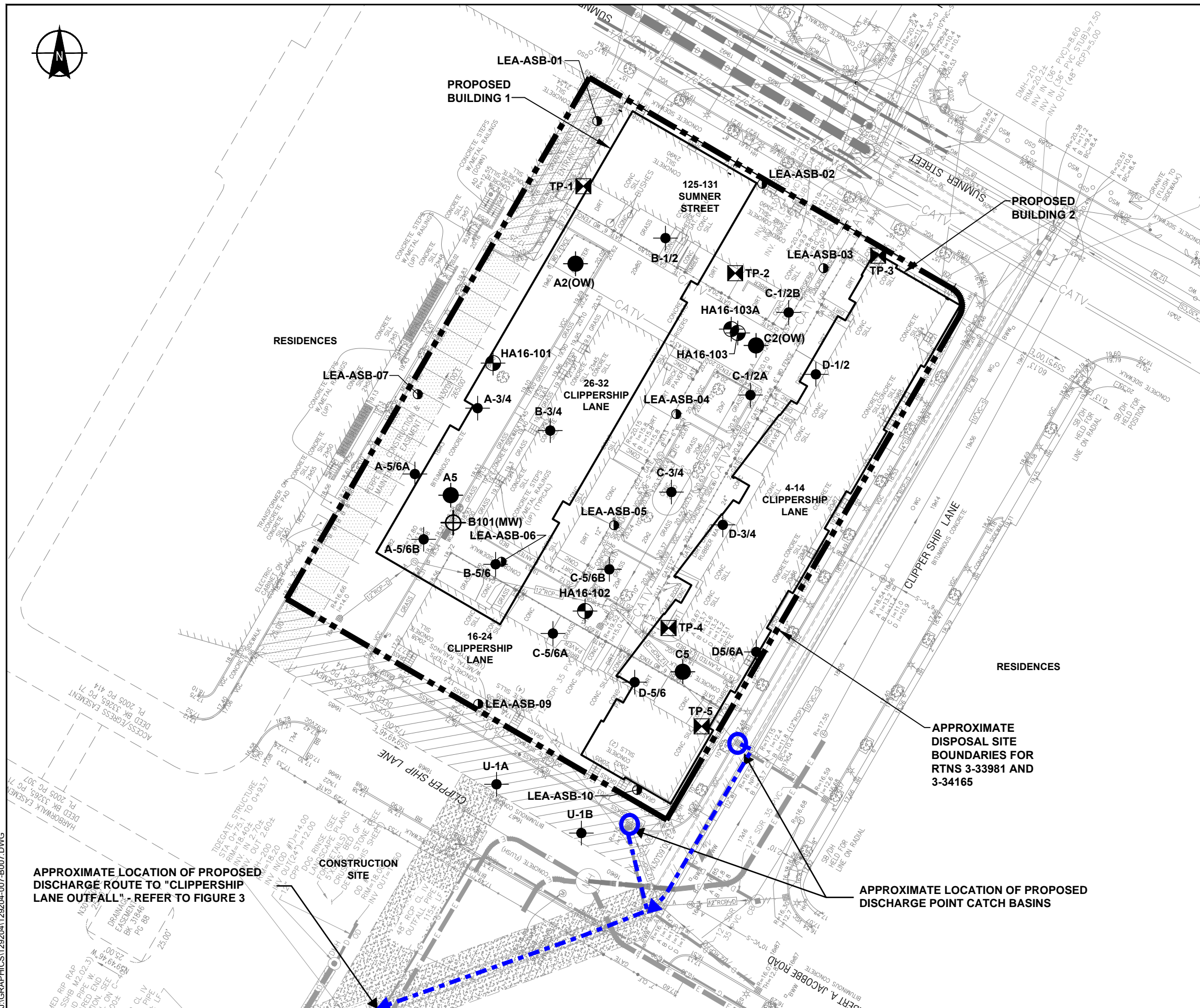
CLIPPERSHIP APARTMENTS
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
APRIL 2019

FIGURE 1





LEGEND

- C-1/2B DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBES DRILLED BY CRAWFORD DRILLING SERVICES BETWEEN 11 AND 13 JULY 2018
- TP-3 DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY J. MARCHESE & SONS INC BETWEEN 9 AND 10 JULY 2018
- LEA-ASB-01 DESIGNATION AND APPROXIMATE LOCATION OF ACM SAMPLE COLLECTED BY LOUREIRO ON 26 MARCH 2018
- C5 DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW ENGLAND BORING CONTRACTORS BETWEEN 6 AND 13 MARCH 2017 FOR HALEY & ALDRICH, INC.
- HA16-101 DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW ENGLAND BORING CONTRACTORS BETWEEN 14 AND 15 NOVEMBER 2016 FOR HALEY & ALDRICH, INC.
- B101(MW) DESIGNATION AND APPROXIMATE LOCATION OF MONITORING WELL INSTALLED BY GEI ON 17 AUGUST 2010
- (OW) INDICATES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

NOTES

1. BASE PLAN TAKEN FROM A DRAWING TITLED "CIVIL UTILITY PLAN", PREPARED BY NITSCH ENGINEERING AND DATED 21 MARCH 2017.
2. ELEVATIONS ARE IN FEET AND REFER TO BOSTON CITY BASE (BCB) DATUM.
3. AS DRILLED LOCATIONS OF RECENT TEST BORINGS OBTAINED BY HALEY & ALDRICH, INC. BY TAPING TO EXISTING SITE FEATURES.



HALEY
ALDRICH

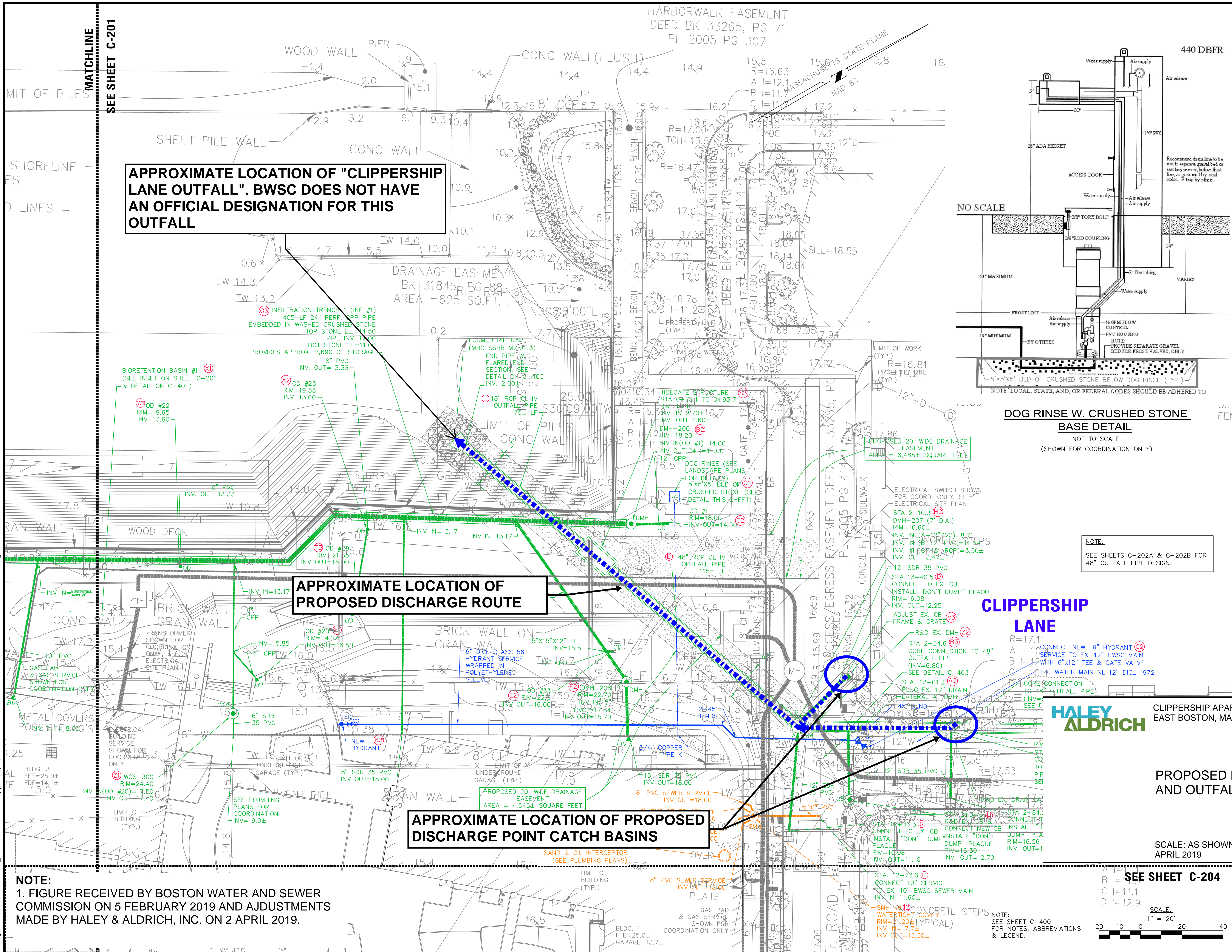
CLIPPERSHIP APARTMENTS
EAST BOSTON, MASSACHUSETTS

SITE AND SUBSURFACE
EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
APRIL 2019

FIGURE 2

Tuesday, April 2, 2019 10:32:56 AM
\\haleyaldrich.com\share\bos_common\129204-ClippershipsApartments\NPDES RGP\ACAD-10055cut-BWSC2017-05-02.dwg




tat

the architectural team

The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
T 617.889.4402
F 617.884.4329
www.architecturalteam.com
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Consultant:


Nitsch Engineering

Revision:	
PERMIT SET	12/01/15
REVISED	12/17/15
BWSC SUBMISSION	12/30/15
100% CONSTRUCTION DOCS	03/17/16
REVISED 100% CDS	05/04/16
ADDENDUM 02	06/30/16
ADDENDUM 03	10/21/16
ADDENDUM 04	10/31/16
BULLETIN-001	11/30/16
BULLETIN-004	12/07/16
BULLETIN-025	02/10/17
BULLETIN-026	02/10/17

Architect of Record:

Drawn: RMG
Checked: JMS
Scale: 1" = 20'
Key Plan:

BWSC FILE NO. 15322

Project Name:
CLIPPERSHIP WHARF

HALEY ALDRICH
CLIPPERSHIP APARTMENTS
EAST BOSTON, MASSACHUSETTS

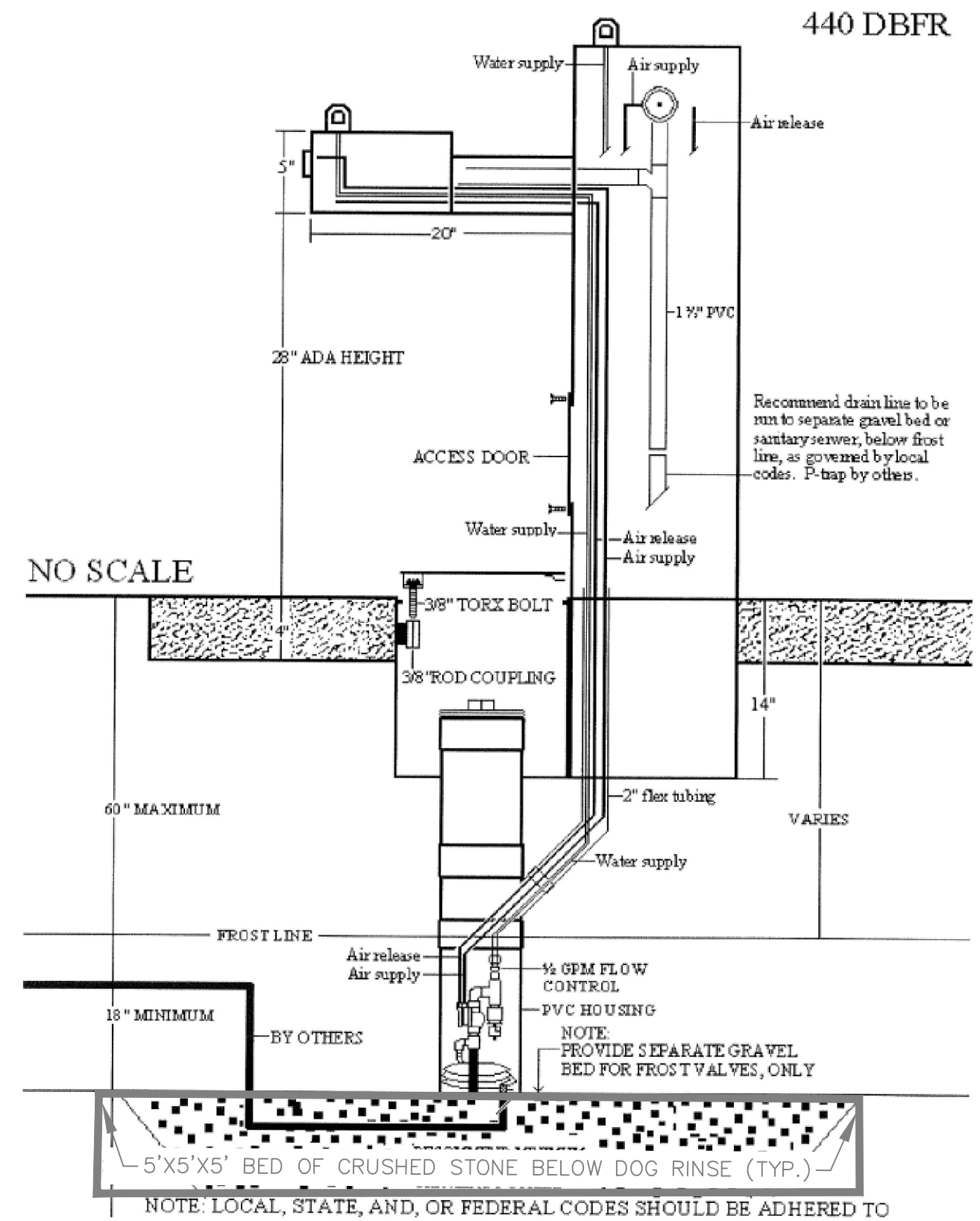
PROPOSED DISCHARGE ROUTE AND OUTFALL LOCATION PLAN

SCALE: AS SHOWN
APRIL 2019

FIGURE 3

Issue Date:
OCTOBER 28, 2016

Sheet Number:
C-202



DOG RINSE W. CRUSHED STONE BASE DETAIL
NOT TO SCALE
(SHOWN FOR COORDINATION ONLY)

NOTE:
SEE SHEETS C-202A & C-202B FOR 48" OUTFALL PIPE DESIGN.

CLIPPERSHIP LANE

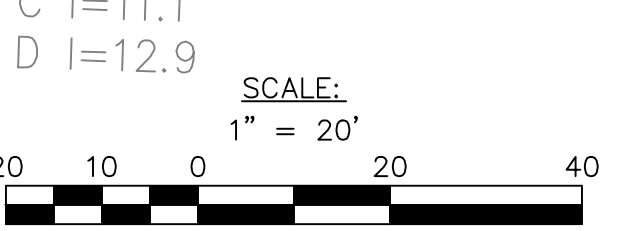
CONNECT NEW 6" HYDRANT (E2) SERVICE TO EX. 12" BWSC MAIN (INV=-6.80) WITH 6"x12" TEE & GATE VALVE (INV=-10.1). EX. WATER MAIN NL 12" DI CL 1972 (INV=-10.1). EX. CORE CONNECTION TO 48" OUTFALL PIPE (INV=-10.1). SEE D.

STA. 2+34.6 (E3) CORE CONNECTION TO 48" OUTFALL PIPE (INV=-6.80) WITH 6"x12" TEE & GATE VALVE (INV=-10.1). EX. WATER MAIN NL 12" DI CL 1972 (INV=-10.1). EX. CORE CONNECTION TO 48" OUTFALL PIPE (INV=-10.1). SEE D.

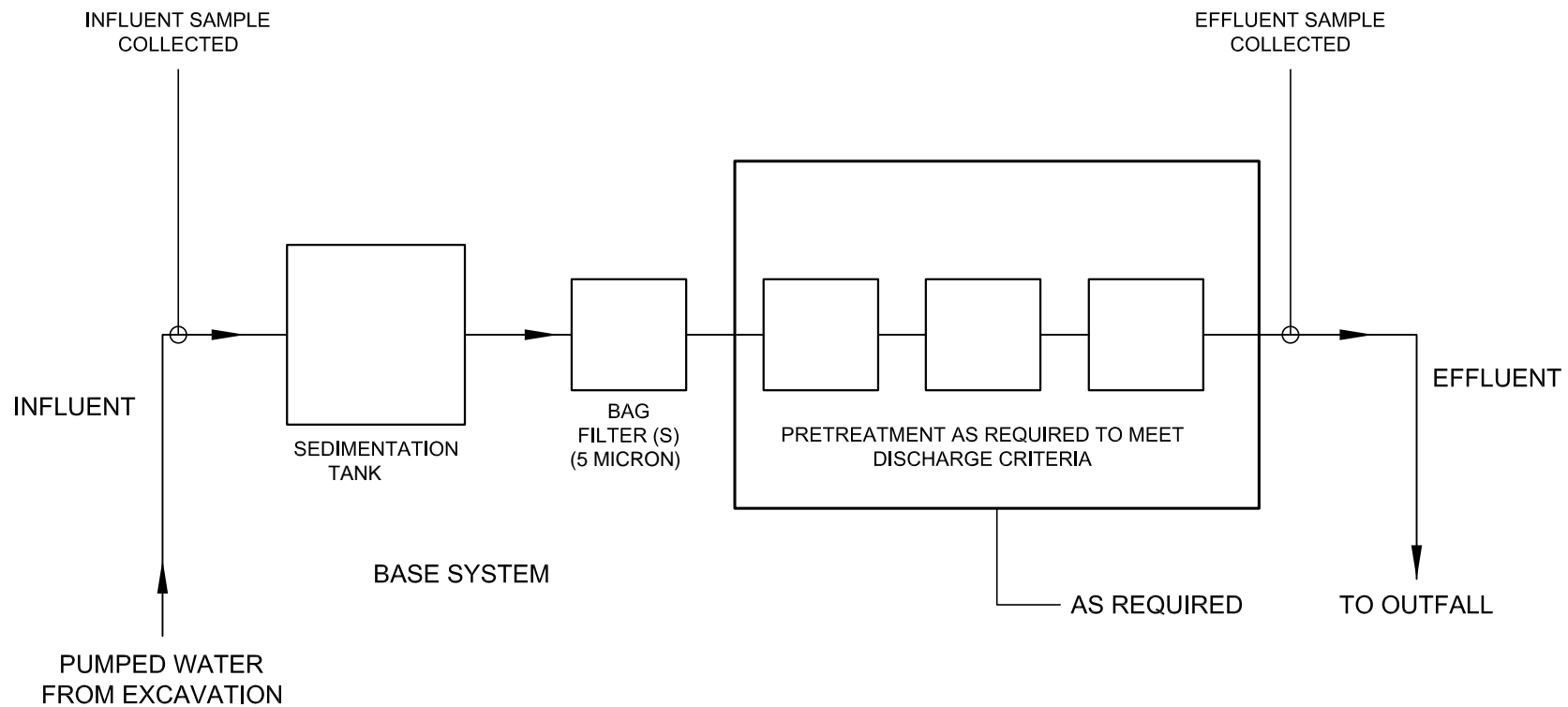
STA. 13+01.2 (A3) PLUG EX. 12" DRAIN LATERAL AT DMH (RIM=16.08). INV. IN (A-12" PVC)=8.71. INV. IN (B-12" PVC)=11.63. INV. IN (E-48" RCP)=3.50±. INV. OUT=3.47±.

STA. 2+34.6 (E3) CORE CONNECTION TO 48" OUTFALL PIPE (INV=-6.80) WITH 6"x12" TEE & GATE VALVE (INV=-10.1). EX. WATER MAIN NL 12" DI CL 1972 (INV=-10.1). EX. CORE CONNECTION TO 48" OUTFALL PIPE (INV=-10.1). SEE D.

STA. 12+73.6 (E2) SERVICE CONNECTION TO 10" SERVICE TO EX. 10" BWSC SEWER MAIN (INV IN=11.60±). INV IN=11.60±. INV OUT=13.30±.



NOTE:
SEE SHEET C-400 FOR NOTES, ABBREVIATIONS & LEGEND.



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**

CLIPPERSHIP APARTMENTS
125-131 SUMNER STREET
EAST BOSTON, MASSACHUSETTS

**PROPOSED
TREATMENT SYSTEM
SCHEMATIC**

SCALE: NONE
APRIL 2019

FIGURE 3

APPENDIX A

Notice of Intent (NOI)

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

A. General site information:

1. Name of site: Clippership Apartments	Site address: 125-131 Sumner Street Street:		
2. Site owner Boston Housing Authority Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input checked="" type="checkbox"/> Other; if so, specify: Municipality	City: East Boston	State: MA	Zip: 02128
3. Site operator, if different than owner Cranshaw Construction	Contact Person: William McGonagle Telephone: (617) 988-4000 Email: Mailing address: 52 Chauncy Street Street: City: Boston State: MA Zip: 02111		
4. NPDES permit number assigned by EPA: not applicable NPDES permit is (check all that apply): <input checked="" type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> MA Chapter 21e; list RTN(s): 3-33981 and 3-34165 <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: </div> <div> <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404 </div> </div>		

B. Receiving water information:

1. Name of receiving water(s): Boston Inner Harbor	Waterbody identification of receiving water(s): MA70-02	Classification of receiving water(s): Clippership Lane Outfall (refer to text for details)
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Impaired; Cause - Enterococcus, Fecal Colliform, Dissolved Oxygen, PCB in Fish Tissue; No final TMDL; Impaired Designated Uses - aquatic life, primary and secondary contact, fish consumption, and shellfish harvesting.		
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.		0
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.		0
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

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

2. Source water contaminants: As, Cu, Fe, Pb, VOCs, Napthalene, Ba (dissolved)	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input checked="" type="checkbox"/> New discharge <input type="checkbox"/> New source	
Outfall(s): "Clippership Lane Outfall"	Outfall location(s): (Latitude, Longitude) 42.368596, -71.042200
<p>Discharges enter the receiving water(s) via (check any that apply): <input type="checkbox"/> Direct discharge to the receiving water <input checked="" type="checkbox"/> Indirect discharge, if so, specify:</p> <p><input type="checkbox"/> A private storm sewer system <input checked="" type="checkbox"/> A municipal storm sewer system</p> <p>If the discharge enters the receiving water via a private or municipal storm sewer system:</p> <p>Has notification been provided to the owner of this system? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No, if so, explain, with an estimated timeframe for obtaining permission: BWSC permit is being simultaneously submitted. Anticipate obtaining permission from BWSC within 4-6 weeks.</p> <p>Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
Provide the expected start and end dates of discharge(s) (month/year): May 2019 to November 2020	
Indicate if the discharge is expected to occur over a duration of: <input type="checkbox"/> less than 12 months <input checked="" type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)	
<input type="checkbox"/> I – Petroleum-Related Site Remediation <input type="checkbox"/> II – Non-Petroleum-Related Site Remediation <input checked="" type="checkbox"/> III – Contaminated Site Dewatering <input type="checkbox"/> IV – Dewatering of Pipelines and Tanks <input type="checkbox"/> V – Aquifer Pump Testing <input type="checkbox"/> VI – Well Development/Rehabilitation <input type="checkbox"/> VII – Collection Structure Dewatering/Remediation <input type="checkbox"/> VIII – Dredge-Related Dewatering	<p>a. If Activity Category I or II: (check all that apply)</p> <p><input type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> F. Fuels Parameters</p>	
	<p>b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</p>	
	<table border="1"> <tr> <td data-bbox="970 799 1419 873"><input checked="" type="checkbox"/> G. Sites with Known Contamination</td><td data-bbox="1419 799 2003 873"><input type="checkbox"/> H. Sites with Unknown Contamination</td></tr> </table>	<input checked="" type="checkbox"/> G. Sites with Known Contamination
<input checked="" type="checkbox"/> G. Sites with Known Contamination	<input type="checkbox"/> H. Sites with Unknown Contamination	
<table border="1"> <tr> <td data-bbox="970 873 1419 1409"> <p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p> </td><td data-bbox="1419 873 2003 1409"> <p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p> </td></tr> </table>	<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p>	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>
<p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <p><input checked="" type="checkbox"/> A. Inorganics</p> <p><input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> C. Halogenated Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds</p> <p><input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds</p> <p><input checked="" type="checkbox"/> F. Fuels Parameters</p>	<p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p>	

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	4500NH3	0.075	10.1	10.1	Report mg/L	---
Chloride		✓	1	300.0	25000	250000	250000	Report µg/l	---
Total Residual Chlorine	✓		1	4500CL-D	0.02	ND	ND	0.2 mg/L	7.5
Total Suspended Solids	✓		1	2540D	5	ND	ND	30 mg/L	---
Antimony *	✓		1	200.8	4	ND	ND	206 µg/L	640
Arsenic *		✓	1	200.8	1	1.77	1.77	104 µg/L	36
Cadmium *	✓		1	200.8	0.2	ND	ND	10.2 µg/L	8.9
Chromium III *	✓		1	200.8	10	ND	ND	323 µg/L	100
Chromium VI	✓		1	7196A	10	ND	ND	323 µg/L	50
Copper *		✓	1	200.8	10	8.5	8.5	242 µg/L	3.7
Iron		✓	1	200.7	50	898	898	5,000 µg/L	
Lead *		✓	1	200.8	1	2.69	2.69	160 µg/L	8.5
Mercury *	✓		1	245.1	0.2	ND	ND	0.739 µg/L	1.11
Nickel *	✓		1	200.8	2	ND	ND	1,450 µg/L	8.3
Selenium *	✓		1	200.8	5	ND	ND	235.8 µg/L	71
Silver *	✓		1	200.8	0.4	ND	ND	35.1 µg/L	2.2
Zinc *	✓		1	200.8	10	ND	ND	420 µg/L	86
Cyanide	✓		1	4500CN	5000	ND	ND	178 mg/L	1.0
B. Non-Halogenated VOCs									
Total BTEX *	✓		1	624.1	1 - 2	ND	ND	100 µg/L	---
Benzene	✓		1	624.1	1	ND	ND	5.0 µg/L	---
1,4 Dioxane	✓		1	624.1	50	ND	ND	200 µg/L	---
Acetone		✓	1	624.1	10	23	20.5	7.97 mg/L	---
Phenol *	✓		1	624.1	30	ND	ND	1,080 µg/L	300

*compound detected in soil only

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		1	624.1	1	ND	ND	4.4 µg/L	1.6
1,2 Dichlorobenzene	✓		1	624.1	5	ND	ND	600 µg/L	---
1,3 Dichlorobenzene	✓		1	624.1	5	ND	ND	320 µg/L	---
1,4 Dichlorobenzene	✓		1	624.1	5	ND	ND	5.0 µg/L	---
Total dichlorobenzene	✓		1	624.1	1	ND	ND	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	624.1	1.5	ND	ND	70 µg/L	---
1,2 Dichloroethane	✓		1	624.1	1.5	ND	ND	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	624.1	1	ND	ND	3.2 µg/L	---
Ethylene Dibromide	✓		1	624.1	2	ND	ND	0.05 µg/L	---
Methylene Chloride	✓		1	624.1	2	ND	ND	4.6 µg/L	---
1,1,1 Trichloroethane	✓		1	624.1	2	ND	ND	200 µg/L	---
1,1,2 Trichloroethane	✓		1	624.1	1.5	ND	ND	5.0 µg/L	---
Trichloroethylene *		✓	1	624.1	1	5.2	5.2	5.0 µg/L	---
Tetrachloroethylene *		✓	1	624.1	1	1.9	1.65	5.0 µg/L	3.3
cis-1,2 Dichloroethylene*	✓		1	624.1	1	ND	ND	70 µg/L	---
Vinyl Chloride	✓		1	624.1	1	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates *	✓		1	625.1	0.1 - 5	ND	ND	190 µg/L	
Diethylhexyl phthalate	✓		1	625.1	2.2	ND	ND	101 µg/L	2.2
Total Group I PAHs *	✓		1	625.1	0.1	ND	ND	1.0 µg/L	---
Benzo(a)anthracene *	✓		1	625.1	0.1	ND	ND	As Total PAHs	0.0038
Benzo(a)pyrene*	✓		1	625.1	0.1	ND	ND		0.0038
Benzo(b)fluoranthene *	✓		1	625.1	0.1	ND	ND		0.0038
Benzo(k)fluoranthene *	✓		1	625.1	0.1	ND	ND		0.0038
Chrysene *	✓		1	625.1	0.1	ND	ND		0.0038
Dibenzo(a,h)anthracene *	✓		1	625.1	0.1	ND	ND		0.0038
Indeno(1,2,3-cd)pyrene *	✓		1	625.1	0.1	ND	ND		0.0038

*compound detected in soil only

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs *	✓		1	625.1	0.1	ND	ND	100 µg/L	---
Naphthalene *		✓	1	625.1	0.1	0.6	0.6	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs *	✓		1	608.3	0.2 - 0.25	ND	ND	0.000064 µg/L	---
Pentachlorophenol	✓		1	625.1-SIM	1	ND	ND	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum * Hydrocarbons	✓		1	1664A	4	ND	ND	5.0 mg/L	---
Ethanol	✓		0	1671	NA	NA	NA	Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	624.1	10	ND	ND	70 µg/L	20
tert-Butyl Alcohol	✓		1	624.1	100	ND	ND	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	624.1	20	ND	ND	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC₅₀, additional pollutants present); if so, specify:									
pH		✓	1	121,400H+	NA	7.16	7.16		
Silver, Dissolved	✓		1	6010	7 ug/L	ND	ND		
Barium, dissolved		✓	1	6010	10	200	200		
Lead, Dissolved	✓		1	6010	10 ug/L	ND	ND		
Mercury, Dissolved	✓		1	6010	0.2 ug/L	ND	ND		
Selenium, Dissolved	✓		1	6010	10 ug/L	ND	ND		
2-butanone		✓	1	8260	1	12	12		
EPH*	✓		1	EPH-04-1.	100	ND	ND		
VPH	✓		1	VPH-04-1.	50	ND	ND		
Arsenic, dissolved	✓		1	6010	5 ug/L	ND	ND		
Cadmium, dissolved	✓		1	6010	4 ug/L	ND	ND		
Chromium, dissolved	✓		1	6010	10 ug/L	ND	ND		
Copper, dissolved	✓		1	6010	10 ug/L	ND	ND		

*compound detected in soil only

Compounds detected in soil (indicates concentrations above RCS-1 Reportable Concentrations)**

Volatile Organic Compounds

2-Butanone (Methyl Ethyl Ketone)
Acetone
Carbon disulfide
cis-1,2-Dichloroethene**
Cymene (p-Isopropyltoluene)
Naphthalene
Tetrachloroethene
Toluene
Trichloroethene**

Semi-Volatile Organic Compounds

2-Methylnaphthalene**
3-Methylphenol
Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene**
Benzo(a)pyrene**
Benzo(b)fluoranthene**
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
bis(2-Ethylhexyl)phthalate
Chrysene
Dibenz(a,h)anthracene**
Dibenzofuran
Di-n-butylphthalate
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene**
Naphthalene
Phenanthrene**
Phenol
Pyrene

Extractable Petroleum Hydrocarbons

MADEP C11-C22 Aromatic Hydrocarbons, Adjusted
MADEP C19-C36 Aliphatic Hydrocarbons
MADEP C9-C18 Aliphatic Hydrocarbons

Inorganic Compounds

Antimony
Arsenic**
Barium
Beryllium
Cadmium
Chromium
Copper**
Lead**
Mercury
Nickel
Selenium
Silver
Vanadium
Zinc

Polychlorinated Biphenyls

Asbestos

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p> <input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption <input type="checkbox"/> Ion Exchange <input type="checkbox"/> Precipitation/Coagulation/Flocculation <input checked="" type="checkbox"/> Separation/Filtration <input checked="" type="checkbox"/> Other; if so, specify: Granulated Activated Carbon (GAC), Ion Exchange, and/or pH adjustment may be added to meet necessary effluent limits. A Notice of Change (NOC) will be submitted to EPA if additional treatment components need to be mobilized at the site. </p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.</p> <p>Prior to discharge, collected water is routed through a sedimentation tank and bag filters (5-micron bag filter are required by the Non-Traditional Work Plan to remove suspended solids and undissolved chemical constituents). Additional treatment may include granulated activated carbon (GAC), ion exchange, and/or pH adjustment, as needed to meet necessary effluent limits. A Notice of Change (NOC) will be submitted to EPA if additional treatment components need to be mobilized at the site.</p> <p>Identify each major treatment component (check any that apply):</p> <p> <input checked="" type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter <input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input checked="" type="checkbox"/> Bag filter <input type="checkbox"/> Other; if so, specify: </p> <p>Indicate if either of the following will occur (check any that apply):</p> <p> <input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination </p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component.</p> <p>Indicate the most limiting component: Flowmeter</p> <p>Is use of a flow meter feasible? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	<p>100 gpm</p>
<p>Provide the proposed maximum effluent flow in gpm.</p>	<p>100 gpm</p>
<p>Provide the average effluent flow in gpm.</p>	<p>50 gpm</p>
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	<p>NA</p>
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

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

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

Flocculants and pH conditioners may be added if necessary to meet permit limits. An NOC will be submitted to EPA if additional treatment components need to be mobilized at the site

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

- Product name, chemical formula, and manufacturer of the chemical/additive;
- Purpose or use of the chemical/additive or remedial agent;
- Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
- The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
- Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
- 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 **Not applicable - See above**

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.

Refer to attached Haley & Aldrich, Inc. 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.

A BMPP meeting the requirements of this general permit will be implemented at the site.

BMPP certification statement:

Notification provided to the appropriate State, including a copy of this NOI, if required.

Check one: Yes ☐ No ☒

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.

Check one: Yes ☒ No ☐

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.

Check one: Yes ☒ No ☐ NA ☐

Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.

BWSC PERMIT IS BEING SUBMITTED SIMULTANEOUSLY.
PERMISSION FROM BWSC IS ANTICIPATED IN 4-6 WEEKS

Check one: Yes ☐ No ☒ NA ☐

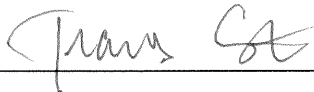
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge

permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit

Check one: Yes ☐ No ☐ NA ☒

☐ Other; if so, specify:

Signature:



Date: 4/4/19

Print Name and Title:

Travis Smith, Cranshaw Construction

APPENDIX B

Laboratory Data Reports



ANALYTICAL REPORT

Lab Number:	L1742436
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Mike Cronan
Phone:	(617) 886-7477
Project Name:	125-131 SUMNER STREET
Project Number:	129204-005
Report Date:	11/22/17

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1742436-01	B101(MW)_20171116	WATER	EAST BOSTON, MA	11/16/17 11:41	11/17/17
L1742436-02	A2(OW)_20171116	WATER	EAST BOSTON, MA	11/16/17 15:35	11/17/17
L1742436-03	C2(OW)_20171116	WATER	EAST BOSTON, MA	11/16/17 14:35	11/17/17

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1742436-01, -02 and -03 (all submitted samples), did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0012), as well as the average response factor for 1,4-dioxane.

The continuing calibration standard, associated with L1742436-01, -02 and -03 (all submitted samples), is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

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

Authorized Signature:

 Melissa Cripps

Title: Technical Director/Representative

Date: 11/22/17

ORGANICS

VOLATILES

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS**

Lab ID: L1742436-01
 Client ID: B101(MW)_20171116
 Sample Location: EAST BOSTON, MA

Date Collected: 11/16/17 11:41
 Date Received: 11/17/17
 Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 11/21/17 21:48
 Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

SAMPLE RESULTS

Lab ID: L1742436-01

Date Collected: 11/16/17 11:41

Client ID: B101(MW)_20171116

Date Received: 11/17/17

Sample Location: EAST BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS****Lab ID:** L1742436-01**Date Collected:** 11/16/17 11:41**Client ID:** B101(MW)_20171116**Date Received:** 11/17/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS**

Lab ID: L1742436-02
 Client ID: A2(OW)_20171116
 Sample Location: EAST BOSTON, MA

Date Collected: 11/16/17 15:35
 Date Received: 11/17/17
 Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 11/21/17 22:14
 Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS**

Lab ID: L1742436-02
Client ID: A2(OW)_20171116
Sample Location: EAST BOSTON, MA

Date Collected: 11/16/17 15:35
Date Received: 11/17/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS****Lab ID:** L1742436-02**Date Collected:** 11/16/17 15:35**Client ID:** A2(OW)_20171116**Date Received:** 11/17/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	104		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS**

Lab ID: L1742436-03
 Client ID: C2(OW)_20171116
 Sample Location: EAST BOSTON, MA

Date Collected: 11/16/17 14:35
 Date Received: 11/17/17
 Field Prep: Not Specified

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 11/21/17 22:39
 Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17**SAMPLE RESULTS**

Lab ID: L1742436-03
 Client ID: C2(OW)_20171116
 Sample Location: EAST BOSTON, MA

Date Collected: 11/16/17 14:35
 Date Received: 11/17/17
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

SAMPLE RESULTS

Lab ID: L1742436-03

Date Collected: 11/16/17 14:35

Client ID: C2(OW)_20171116

Date Received: 11/17/17

Sample Location: EAST BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 11/21/17 19:43
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1065601-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 11/21/17 19:43
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1065601-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1742436

Project Number: 129204-005

Report Date: 11/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 11/21/17 19:43
 Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG1065601-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1742436

Report Date: 11/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1065601-3 WG1065601-4								
Methylene chloride	91		92		70-130	1		20
1,1-Dichloroethane	91		94		70-130	3		20
Chloroform	96		92		70-130	4		20
Carbon tetrachloride	93		94		70-130	1		20
1,2-Dichloropropane	88		92		70-130	4		20
Dibromochloromethane	82		86		70-130	5		20
1,1,2-Trichloroethane	85		85		70-130	0		20
Tetrachloroethene	88		87		70-130	1		20
Chlorobenzene	83		87		70-130	5		20
Trichlorofluoromethane	89		84		70-130	6		20
1,2-Dichloroethane	100		110		70-130	10		20
1,1,1-Trichloroethane	96		98		70-130	2		20
Bromodichloromethane	90		88		70-130	2		20
trans-1,3-Dichloropropene	88		88		70-130	0		20
cis-1,3-Dichloropropene	94		92		70-130	2		20
1,1-Dichloropropene	95		100		70-130	5		20
Bromoform	88		81		70-130	8		20
1,1,2,2-Tetrachloroethane	85		82		70-130	4		20
Benzene	89		90		70-130	1		20
Toluene	84		87		70-130	4		20
Ethylbenzene	87		90		70-130	3		20
Chloromethane	81		86		70-130	6		20
Bromomethane	100		95		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1742436

Report Date: 11/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1065601-3 WG1065601-4								
Vinyl chloride	90		88		70-130	2		20
Chloroethane	95		90		70-130	5		20
1,1-Dichloroethene	77		72		70-130	7		20
trans-1,2-Dichloroethene	90		89		70-130	1		20
Trichloroethene	93		92		70-130	1		20
1,2-Dichlorobenzene	85		80		70-130	6		20
1,3-Dichlorobenzene	86		85		70-130	1		20
1,4-Dichlorobenzene	84		82		70-130	2		20
Methyl tert butyl ether	97		98		70-130	1		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	92		93		70-130	1		20
Dibromomethane	91		89		70-130	2		20
1,2,3-Trichloropropane	90		84		70-130	7		20
Styrene	85		85		70-130	0		20
Dichlorodifluoromethane	91		95		70-130	4		20
Acetone	110		93		70-130	17		20
Carbon disulfide	68	Q	68	Q	70-130	0		20
2-Butanone	97		89		70-130	9		20
4-Methyl-2-pentanone	80		82		70-130	2		20
2-Hexanone	72		70		70-130	3		20
Bromochloromethane	97		90		70-130	7		20
Tetrahydrofuran	89		100		70-130	12		20

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1742436

Report Date: 11/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1065601-3 WG1065601-4								
2,2-Dichloropropane	100		100		70-130	0		20
1,2-Dibromoethane	90		85		70-130	6		20
1,3-Dichloropropane	84		84		70-130	0		20
1,1,1,2-Tetrachloroethane	86		89		70-130	3		20
Bromobenzene	82		85		70-130	4		20
n-Butylbenzene	91		94		70-130	3		20
sec-Butylbenzene	89		110		70-130	21	Q	20
tert-Butylbenzene	82		85		70-130	4		20
o-Chlorotoluene	88		87		70-130	1		20
p-Chlorotoluene	88		87		70-130	1		20
1,2-Dibromo-3-chloropropane	84		73		70-130	14		20
Hexachlorobutadiene	86		93		70-130	8		20
Isopropylbenzene	88		90		70-130	2		20
p-Isopropyltoluene	89		91		70-130	2		20
Naphthalene	87		84		70-130	4		20
n-Propylbenzene	90		87		70-130	3		20
1,2,3-Trichlorobenzene	87		84		70-130	4		20
1,2,4-Trichlorobenzene	87		85		70-130	2		20
1,3,5-Trimethylbenzene	90		88		70-130	2		20
1,2,4-Trimethylbenzene	89		87		70-130	2		20
Ethyl ether	79		74		70-130	7		20
Isopropyl Ether	91		90		70-130	1		20
Ethyl-Tert-Butyl-Ether	99		97		70-130	2		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** 125-131 SUMNER STREET**Lab Number:** L1742436**Project Number:** 129204-005**Report Date:** 11/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG1065601-3 WG1065601-4								
Tertiary-Amyl Methyl Ether	99		100		70-130	1		20
1,4-Dioxane	78		80		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		103		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	103		101		70-130
Dibromofluoromethane	105		102		70-130

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Serial_No:11221715:56
Lab Number: L1742436
Report Date: 11/22/17

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1742436-01A	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-01B	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-01C	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-02A	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-02B	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-02C	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-03A	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-03B	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)
L1742436-03C	Vial HCl preserved	A	NA		2.6	Y	Absent		MCP-8260-10(14)

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

Data Qualifiers

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1742436
Report Date: 11/22/17

REFERENCES

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

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.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 10

Department: **Quality Assurance**

Published Date: 1/16/2017 11:00:05 AM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information


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

Westborough Facility**EPA 624:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 300:** DW: Bromide**EPA 6860:** NPW and SCM: Perchlorate**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation**EPA 9012B:** NPW: Total Cyanide**EPA 9050A:** NPW: Specific Conductance**SM3500:** NPW: Ferrous Iron**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.**SM5310C:** DW: Dissolved Organic Carbon**Mansfield Facility****SM 2540D:** TSS**EPA 3005A** NPW**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

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

Westborough Facility:**Drinking Water****EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.****EPA 624:** Volatile Halocarbons & Aromatics,**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.****Mansfield Facility:****Drinking Water****EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.**EPA 245.1 Hg.****SM2340B**

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

 CHAIN OF CUSTODY		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 <u>11-17-2017</u> <u>11-20</u>		ALPHA Job # <u>L1742436</u>	
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		Project Information: Project Name: 125-131 Sumner Street Project Location: East Boston, MA Project #: 129204-005 (Use Project name as Project #) <input type="checkbox"/>		Deliverables <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> EQuIS (1 File) <input checked="" type="checkbox"/> EQuIS (4 File) <input type="checkbox"/> Other:		Billing Information <input type="checkbox"/> Same as Client Info PO #	
H&A Information H&A Client: WinnDevelopment H&A Address: 465 Medford Street Suite 2200 H&A Phone: 617-886-7358 H&A Fax: _____ H&A Email: tcooper@haleyaldrich.com		Project Manager: T. Cooper, Mike Cronan ALPHAQuote #: _____ Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: _____ Rush (only if pre approved) <input type="checkbox"/> # of Days: 5 Day		Regulatory Requirements (Program/Criteria) Note: Select State from menu & identify criteria.		Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:			
These samples have been previously analyzed by Alpha <input type="checkbox"/>		Other project specific requirements/comments:		ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Sample Specific Comments	
Please specify Metals or TAL.		ALPHA Lab ID (Lab Use Only)		Sample ID		Collection Date Time		Sample Matrix Sampler's Initials	
<u>L1742436-01</u> <u>-02</u> <u>-03</u>		B101(MW)_20171116		11/16/2017 1141		GW SJB		X	
		A2(OW)_20171116		11/16/2017 1535		GW SJB		X	
		C2(OW)_20171116		11/16/2017 1435		GW SJB		X	
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 <u>V</u>		Preservative <u>B</u>	
Relinquished By: <u>[Signature]</u>		Date/Time: <u>17 Nov 2017 11:19</u>		Received By: <u>[Signature]</u>		Date/Time: <u>11/17/17 17:13</u>		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)									

Method Blank Summary Form 4

Client	: Haley & Aldrich, Inc.	Lab Number	: L1742436
Project Name	: 125-131 SUMNER STREET	Project Number	: 129204-005
Lab Sample ID	: WG1065601-5	Lab File ID	: V16171121P05
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 11/21/17 19:43

Client Sample No.	Lab Sample ID	Analysis Date
WG1065601-3LCS	WG1065601-3	11/21/17 18:02
WG1065601-4LCSD	WG1065601-4	11/21/17 18:52
B101(MW)_20171116	L1742436-01	11/21/17 21:48
A2(OW)_20171116	L1742436-02	11/21/17 22:14
C2(OW)_20171116	L1742436-03	11/21/17 22:39

Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : VOA116
 Lab File ID : V16171121P01
 Sample No : WG1065601-2
 Channel :

Lab Number : L1742436
 Project Number : 129204-005
 Calibration Date : 11/21/17 18:02
 Init. Calib. Date(s) : 11/13/17 11/13/17
 Init. Calib. Times : 12:12 15:09

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	103	0
Dichlorodifluoromethane	0.33	0.3	-	9.1	20	100	0
Chloromethane	0.311	0.253	-	18.6	20	84	0
Vinyl chloride	0.253	0.228	-	9.9	20	95	0
Bromomethane	0.131	0.135	-	-3.1	20	110	0
Chloroethane	10	9.511	-	4.9	20	95	.01
Trichlorofluoromethane	0.446	0.399	-	10.5	20	95	0
Ethyl ether	0.094	0.074	-	21.3*	20	86	.01
1,1-Dichloroethene	0.239	0.184	-	23*	20	80	.01
Carbon disulfide	0.684	0.467	-	31.7*	20	70	0
Methylene chloride	0.275	0.25	-	9.1	20	96	0
Acetone	10	10.913	-	-9.1	20	111	0
trans-1,2-Dichloroethene	0.284	0.257	-	9.5	20	97	0
Methyl tert-butyl ether	0.562	0.547	-	2.7	20	105	0
Diisopropyl ether	0.81	0.735	-	9.3	20	100	0
1,1-Dichloroethane	0.513	0.466	-	9.2	20	95	0
Ethyl tert-butyl ether	0.675	0.669	-	0.9	20	109	0
cis-1,2-Dichloroethene	0.3	0.275	-	8.3	20	100	0
2,2-Dichloropropane	0.428	0.441	-	-3	20	111	0
Bromochloromethane	0.135	0.131	-	3	20	95	0
Chloroform	0.531	0.51	-	4	20	104	0
Carbon tetrachloride	0.469	0.437	-	6.8	20	110	.01
Tetrahydrofuran	10	8.903	-	11	20	96	.01
Dibromofluoromethane	0.288	0.301	-	-4.5	20	107	0
1,1,1-Trichloroethane	0.483	0.463	-	4.1	20	105	0
2-Butanone	10	9.68	-	3.2	20	100	.01
1,1-Dichloropropene	0.367	0.349	-	4.9	20	105	.01
Benzene	1.092	0.969	-	11.3	20	94	0
tert-Amyl methyl ether	0.583	0.578	-	0.9	20	99	0
1,2-Dichloroethane-d4	0.293	0.304	-	-3.8	20	118	0
1,2-Dichloroethane	0.277	0.278	-	-0.4	20	110	.01
Trichloroethene	0.311	0.289	-	7.1	20	105	0
Dibromomethane	0.162	0.148	-	8.6	20	97	0
1,2-Dichloropropane	0.259	0.227	-	12.4	20	95	0
Bromodichloromethane	0.389	0.349	-	10.3	20	101	0
1,4-Dioxane	0.00131	0.00102*	-	22.1*	20	92	0
cis-1,3-Dichloropropene	0.386	0.364	-	5.7	20	105	0
Chlorobenzene-d5	1	1	-	0	20	109	0
Toluene-d8	1.202	1.161	-	3.4	20	106	0
Toluene	0.843	0.705	-	16.4	20	95	0
4-Methyl-2-pentanone	10	7.993	-	20.1*	20	92	0
Tetrachloroethene	0.394	0.349	-	11.4	20	101	0
trans-1,3-Dichloropropene	0.469	0.414	-	11.7	20	109	0
1,1,2-Trichloroethane	0.222	0.189	-	14.9	20	92	0
Chlorodibromomethane	0.356	0.291	-	18.3	20	91	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : VOA116
 Lab File ID : V16171121P01
 Sample No : WG1065601-2
 Channel :

Lab Number : L1742436
 Project Number : 129204-005
 Calibration Date : 11/21/17 18:02
 Init. Calib. Date(s) : 11/13/17 11/13/17
 Init. Calib. Times : 12:12 15:09

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.441	0.369	-	16.3	20	97	0
1,2-Dibromoethane	0.255	0.229	-	10.2	20	98	0
2-Hexanone	10	7.233	-	27.7*	20	91	0
Chlorobenzene	0.935	0.773	-	17.3	20	92	0
Ethylbenzene	1.746	1.523	-	12.8	20	96	0
1,1,1,2-Tetrachloroethane	0.421	0.362	-	14	20	92	0
p/m Xylene	0.596	0.536	-	10.1	20	96	0
o Xylene	0.553	0.488	-	11.8	20	97	0
Styrene	20	17.081	-	14.6	20	93	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	110	0
Bromoform	0.389	0.342	-	12.1	20	93	0
Isopropylbenzene	3.019	2.649	-	12.3	20	100	0
4-Bromofluorobenzene	0.885	0.916	-	-3.5	20	119	0
Bromobenzene	0.746	0.615	-	17.6	20	88	0
n-Propylbenzene	3.671	3.287	-	10.5	20	100	0
1,1,2,2-Tetrachloroethane	0.552	0.471	-	14.7	20	87	0
2-Chlorotoluene	2.47	2.179	-	11.8	20	96	-.01
1,3,5-Trimethylbenzene	2.539	2.273	-	10.5	20	98	0
1,2,3-Trichloropropane	10	9.015	-	9.8	20	90	0
4-Chlorotoluene	2.206	1.942	-	12	20	96	0
tert-Butylbenzene	10	8.201	-	18	20	98	0
1,2,4-Trimethylbenzene	2.503	2.22	-	11.3	20	97	0
sec-Butylbenzene	1.21	1.074	-	11.2	20	94	0
p-Isopropyltoluene	2.583	2.298	-	11	20	101	0
1,3-Dichlorobenzene	1.464	1.264	-	13.7	20	93	0
1,4-Dichlorobenzene	1.482	1.251	-	15.6	20	91	0
n-Butylbenzene	2.356	2.134	-	9.4	20	104	0
1,2-Dichlorobenzene	1.303	1.104	-	15.3	20	91	0
1,2-Dibromo-3-chloropropan	0.086	0.072	-	16.3	20	91	0
Hexachlorobutadiene	0.338	0.293	-	13.3	20	109	0
1,2,4-Trichlorobenzene	0.731	0.635	-	13.1	20	91	0
Naphthalene	1.492	1.298	-	13	20	98	0
1,2,3-Trichlorobenzene	0.623	0.543	-	12.8	20	94	0

* Value outside of QC limits.





ANALYTICAL REPORT

Lab Number:	L1804136
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Mike Cronan
Phone:	(617) 886-7477
Project Name:	125-131 SUMNER STREET
Project Number:	129204-005
Report Date:	02/08/18

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1804136-01	B101(MW)_20180206	WATER	EAST BOSTON, MA	02/06/18 13:30	02/06/18
L1804136-02	A2(OW)_20180206	WATER	EAST BOSTON, MA	02/06/18 11:05	02/06/18
L1804136-03	C2(OW)_20180206	WATER	EAST BOSTON, MA	02/06/18 12:00	02/06/18
L1804136-04	TRIP BLANK	WATER	EAST BOSTON, MA	02/06/18 00:00	02/06/18

Project Name: 125-131 SUMNER STREET

Lab Number: L1804136

Project Number: 129204-005

Report Date: 02/08/18

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1804136-01 through -04 (all submitted samples), did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.0849), 2-butanone (0.0991), 4-methyl-2-pentanone (0.0811), and 1,4-dioxane (0.0016), as well as the average response factor for acetone, 4-methyl-2-pentanone, and 1,4-dioxane.

The continuing calibration standard, associated with L1804136-01 through -04 (all submitted samples), is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

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

Authorized Signature:



Cristin Walker

Title: Technical Director/Representative

Date: 02/08/18

ORGANICS

VOLATILES

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-01
Client ID: B101(MW)_20180206
Sample Location: EAST BOSTON, MA
Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/18 10:15
Analyst: MM

Date Collected: 02/06/18 13:30
Date Received: 02/06/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS****Lab ID:** L1804136-01**Date Collected:** 02/06/18 13:30**Client ID:** B101(MW)_20180206**Date Received:** 02/06/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

SAMPLE RESULTS

Lab ID: L1804136-01
Client ID: B101(MW)_20180206
Sample Location: EAST BOSTON, MA
Sample Depth:

Date Collected: 02/06/18 13:30
Date Received: 02/06/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	105		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-02
Client ID: A2(OW)_20180206
Sample Location: EAST BOSTON, MA
Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/18 10:40
Analyst: PK

Date Collected: 02/06/18 11:05
Date Received: 02/06/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-02
 Client ID: A2(OW)_20180206
 Sample Location: EAST BOSTON, MA
 Sample Depth:

Date Collected: 02/06/18 11:05
 Date Received: 02/06/18
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS****Lab ID:** L1804136-02**Date Collected:** 02/06/18 11:05**Client ID:** A2(OW)_20180206**Date Received:** 02/06/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	103		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-03
Client ID: C2(OW)_20180206
Sample Location: EAST BOSTON, MA
Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/18 11:06
Analyst: PK

Date Collected: 02/06/18 12:00
Date Received: 02/06/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-03
 Client ID: C2(OW)_20180206
 Sample Location: EAST BOSTON, MA
 Sample Depth:

Date Collected: 02/06/18 12:00
 Date Received: 02/06/18
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS****Lab ID:** L1804136-03**Date Collected:** 02/06/18 12:00**Client ID:** C2(OW)_20180206**Date Received:** 02/06/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	104		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-04
Client ID: TRIP BLANK
Sample Location: EAST BOSTON, MA
Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 02/07/18 08:34
Analyst: MM

Date Collected: 02/06/18 00:00
Date Received: 02/06/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS**

Lab ID: L1804136-04
 Client ID: TRIP BLANK
 Sample Location: EAST BOSTON, MA
 Sample Depth:

Date Collected: 02/06/18 00:00
 Date Received: 02/06/18
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**SAMPLE RESULTS****Lab ID:** L1804136-04**Date Collected:** 02/06/18 00:00**Client ID:** TRIP BLANK**Date Received:** 02/06/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	105		70-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1804136

Project Number: 129204-005

Report Date: 02/08/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/18 06:28
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1087214-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.40	--
cis-1,3-Dichloropropene	ND		ug/l	0.40	--
1,3-Dichloropropene, Total	ND		ug/l	0.40	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1804136

Project Number: 129204-005

Report Date: 02/08/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/18 06:28
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1087214-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1804136

Project Number: 129204-005

Report Date: 02/08/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 02/07/18 06:28
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1087214-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1804136

Report Date: 02/08/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1087214-3 WG1087214-4								
Methylene chloride	97		93		70-130	4		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	97		90		70-130	7		20
1,2-Dichloropropane	100		98		70-130	2		20
Dibromochloromethane	84		86		70-130	2		20
1,1,2-Trichloroethane	94		94		70-130	0		20
Tetrachloroethene	84		85		70-130	1		20
Chlorobenzene	87		86		70-130	1		20
Trichlorofluoromethane	110		100		70-130	10		20
1,2-Dichloroethane	96		95		70-130	1		20
1,1,1-Trichloroethane	100		98		70-130	2		20
Bromodichloromethane	100		94		70-130	6		20
trans-1,3-Dichloropropene	95		92		70-130	3		20
cis-1,3-Dichloropropene	94		88		70-130	7		20
1,1-Dichloropropene	98		95		70-130	3		20
Bromoform	79		72		70-130	9		20
1,1,2,2-Tetrachloroethane	100		94		70-130	6		20
Benzene	95		93		70-130	2		20
Toluene	87		88		70-130	1		20
Ethylbenzene	87		87		70-130	0		20
Chloromethane	100		100		70-130	0		20
Bromomethane	120		97		70-130	21	Q	20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1804136

Report Date: 02/08/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1087214-3 WG1087214-4								
Vinyl chloride	120		110		70-130	9		20
Chloroethane	100		100		70-130	0		20
1,1-Dichloroethene	93		76		70-130	20		20
trans-1,2-Dichloroethene	94		95		70-130	1		20
Trichloroethene	92		88		70-130	4		20
1,2-Dichlorobenzene	85		82		70-130	4		20
1,3-Dichlorobenzene	85		86		70-130	1		20
1,4-Dichlorobenzene	87		87		70-130	0		20
Methyl tert butyl ether	97		91		70-130	6		20
p/m-Xylene	85		80		70-130	6		20
o-Xylene	85		80		70-130	6		20
cis-1,2-Dichloroethene	94		93		70-130	1		20
Dibromomethane	98		98		70-130	0		20
1,2,3-Trichloropropane	99		97		70-130	2		20
Styrene	80		75		70-130	6		20
Dichlorodifluoromethane	100		95		70-130	5		20
Acetone	80		72		70-130	11		20
Carbon disulfide	96		89		70-130	8		20
2-Butanone	96		81		70-130	17		20
4-Methyl-2-pentanone	86		76		70-130	12		20
2-Hexanone	89		85		70-130	5		20
Bromochloromethane	91		85		70-130	7		20
Tetrahydrofuran	110		100		70-130	10		20

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1804136

Report Date: 02/08/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1087214-3 WG1087214-4								
2,2-Dichloropropane	100		100		70-130	0		20
1,2-Dibromoethane	89		90		70-130	1		20
1,3-Dichloropropane	97		96		70-130	1		20
1,1,1,2-Tetrachloroethane	84		86		70-130	2		20
Bromobenzene	88		86		70-130	2		20
n-Butylbenzene	95		94		70-130	1		20
sec-Butylbenzene	92		88		70-130	4		20
tert-Butylbenzene	76		74		70-130	3		20
o-Chlorotoluene	92		93		70-130	1		20
p-Chlorotoluene	92		90		70-130	2		20
1,2-Dibromo-3-chloropropane	96		78		70-130	21	Q	20
Hexachlorobutadiene	87		93		70-130	7		20
Isopropylbenzene	88		88		70-130	0		20
p-Isopropyltoluene	78		77		70-130	1		20
Naphthalene	84		82		70-130	2		20
n-Propylbenzene	93		88		70-130	6		20
1,2,3-Trichlorobenzene	80		80		70-130	0		20
1,2,4-Trichlorobenzene	82		82		70-130	0		20
1,3,5-Trimethylbenzene	89		86		70-130	3		20
1,2,4-Trimethylbenzene	88		87		70-130	1		20
Ethyl ether	95		90		70-130	5		20
Isopropyl Ether	100		100		70-130	0		20
Ethyl-Tert-Butyl-Ether	94		93		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Lab Number: L1804136

Project Number: 129204-005

Report Date: 02/08/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1087214-3 WG1087214-4								
Tertiary-Amyl Methyl Ether	91		91		70-130	0		20
1,4-Dioxane	114		112		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		103		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	111		106		70-130
Dibromofluoromethane	101		98		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1804136**Project Number:** 129204-005**Report Date:** 02/08/18**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

B Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1804136-01A	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-01B	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-01C	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-02A	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-02B	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-02C	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-03A	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-03B	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-03C	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-04A	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)
L1804136-04B	Vial HCl preserved	B	NA		2.8	Y	Absent		MCP-8260-10(14)

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

Data Qualifiers

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1804136
Report Date: 02/08/18

REFERENCES

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

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

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

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

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

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

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

Mansfield Facility

SM 2540D: TSS

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

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

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

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

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

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

EPA 522.

Non-Potable Water

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

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

EPA 245.1 Hg.

SM2340B

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

Method Blank Summary Form 4

Client	: Haley & Aldrich, Inc.	Lab Number	: L1804136
Project Name	: 125-131 SUMNER STREET	Project Number	: 129204-005
Lab Sample ID	: WG1087214-5	Lab File ID	: V16180207A09
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/07/18 06:28

Client Sample No.	Lab Sample ID	Analysis Date
WG1087214-3LCS	WG1087214-3	02/07/18 04:22
WG1087214-4LCSD	WG1087214-4	02/07/18 05:12
TRIP BLANK	L1804136-04	02/07/18 08:34
B101(MW)_20180206	L1804136-01	02/07/18 10:15
A2(OW)_20180206	L1804136-02	02/07/18 10:40
C2(OW)_20180206	L1804136-03	02/07/18 11:06

Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : VOA116
 Lab File ID : V16180207A04
 Sample No : WG1087214-2
 Channel :

Lab Number : L1804136
 Project Number : 129204-005
 Calibration Date : 02/07/18 04:22
 Init. Calib. Date(s) : 01/25/18 01/25/18
 Init. Calib. Times : 06:02 09:49

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	100	0
Dichlorodifluoromethane	0.295	0.296	-	-0.3	20	111	0
Chloromethane	0.323	0.341	-	-5.6	20	110	0
Vinyl chloride	0.512	0.616	-	-20.3*	20	127	0
Bromomethane	0.5	0.59	-	-18	20	135	0
Chloroethane	0.364	0.381	-	-4.7	20	103	0
Trichlorofluoromethane	1.137	1.261	-	-10.9	20	118	0
Ethyl ether	0.282	0.269	-	4.6	20	98	0
1,1-Dichloroethene	0.516	0.482	-	6.6	20	97	0
Carbon disulfide	0.834	0.798	-	4.3	20	110	0
Methylene chloride	0.301	0.291	-	3.3	20	102	0
Acetone	0.086	0.068*	-	20.9*	20	105	0
trans-1,2-Dichloroethene	0.294	0.275	-	6.5	20	102	0
Methyl tert-butyl ether	0.647	0.626	-	3.2	20	104	0
Diisopropyl ether	0.88	0.904	-	-2.7	20	109	0
1,1-Dichloroethane	0.522	0.551	-	-5.6	20	110	0
Ethyl tert-butyl ether	0.825	0.774	-	6.2	20	102	0
cis-1,2-Dichloroethene	0.325	0.307	-	5.5	20	100	-.01
2,2-Dichloropropane	0.461	0.471	-	-2.2	20	118	0
Bromochloromethane	0.155	0.141	-	9	20	96	-.01
Chloroform	0.534	0.535	-	-0.2	20	105	0
Carbon tetrachloride	0.468	0.454	-	3	20	110	0
Tetrahydrofuran	0.074	0.082	-	-10.8	20	113	-.02
Dibromofluoromethane	0.29	0.292	-	-0.7	20	103	0
1,1,1-Trichloroethane	0.487	0.488	-	-0.2	20	109	0
2-Butanone	0.104	0.1	-	3.8	20	106	0
1,1-Dichloropropene	0.422	0.414	-	1.9	20	107	0
Benzene	1.218	1.153	-	5.3	20	104	0
tert-Amyl methyl ether	0.777	0.707	-	9	20	98	0
1,2-Dichloroethane-d4	0.295	0.307	-	-4.1	20	112	0
1,2-Dichloroethane	0.38	0.366	-	3.7	20	107	0
Trichloroethene	0.338	0.31	-	8.3	20	106	0
Dibromomethane	0.186	0.183	-	1.6	20	103	0
1,2-Dichloropropane	0.296	0.296	-	0	20	108	-.01
Bromodichloromethane	0.444	0.445	-	-0.2	20	106	0
1,4-Dioxane	0.0018	0.00205*	-	-13.9	20	117	0
cis-1,3-Dichloropropene	0.504	0.472	-	6.3	20	103	0
Chlorobenzene-d5	1	1	-	0	20	105	0
Toluene-d8	1.222	1.217	-	0.4	20	104	0
Toluene	0.926	0.809	-	12.6	20	98	0
4-Methyl-2-pentanone	0.091	0.078*	-	14.3	20	96	0
Tetrachloroethene	0.392	0.33	-	15.8	20	99	0
trans-1,3-Dichloropropene	0.54	0.514	-	4.8	20	106	0
1,1,2-Trichloroethane	0.249	0.235	-	5.6	20	96	0
Chlorodibromomethane	0.379	0.319	-	15.8	20	92	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : VOA116
 Lab File ID : V16180207A04
 Sample No : WG1087214-2
 Channel :

Lab Number : L1804136
 Project Number : 129204-005
 Calibration Date : 02/07/18 04:22
 Init. Calib. Date(s) : 01/25/18 01/25/18
 Init. Calib. Times : 06:02 09:49

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.497	0.482	-	3	20	104	0
1,2-Dibromoethane	0.292	0.261	-	10.6	20	96	-.01
2-Hexanone	0.172	0.154	-	10.5	20	99	0
Chlorobenzene	1.045	0.906	-	13.3	20	96	0
Ethylbenzene	1.81	1.574	-	13	20	99	0
1,1,1,2-Tetrachloroethane	0.392	0.329	-	16.1	20	92	0
p/m Xylene	20	17.18	-	14.1	20	98	0
o Xylene	20	16.846	-	15.8	20	96	0
Styrene	20	15.977	-	20.1*	20	95	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	105	0
Bromoform	10	7.926	-	20.7*	20	96	0
Isopropylbenzene	3.519	3.099	-	11.9	20	98	0
4-Bromofluorobenzene	0.809	0.894	-	-10.5	20	108	0
Bromobenzene	0.774	0.679	-	12.3	20	92	-.01
n-Propylbenzene	4.217	3.93	-	6.8	20	103	0
1,1,2,2-Tetrachloroethane	0.661	0.66	-	0.2	20	104	0
2-Chlorotoluene	2.604	2.401	-	7.8	20	101	0
1,3,5-Trimethylbenzene	2.872	2.567	-	10.6	20	101	0
1,2,3-Trichloropropane	0.521	0.516	-	1	20	103	0
4-Chlorotoluene	2.318	2.133	-	8	20	102	0
tert-Butylbenzene	2.364	1.789	-	24.3*	20	89	0
1,2,4-Trimethylbenzene	2.821	2.497	-	11.5	20	99	0
sec-Butylbenzene	3.424	3.158	-	7.8	20	104	0
p-Isopropyltoluene	10	7.799	-	22*	20	98	0
1,3-Dichlorobenzene	1.568	1.334	-	14.9	20	94	0
1,4-Dichlorobenzene	1.574	1.368	-	13.1	20	96	0
n-Butylbenzene	2.692	2.567	-	4.6	20	109	0
1,2-Dichlorobenzene	1.442	1.233	-	14.5	20	95	0
1,2-Dibromo-3-chloropropan	0.095	0.091	-	4.2	20	98	0
Hexachlorobutadiene	0.238	0.207	-	13	20	103	0
1,2,4-Trichlorobenzene	0.84	0.689	-	18	20	95	0
Naphthalene	2.119	1.776	-	16.2	20	90	0
1,2,3-Trichlorobenzene	0.754	0.6	-	20.4*	20	89	0

* Value outside of QC limits.





ANALYTICAL REPORT

Lab Number:	L1815179
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Teresa Cooper
Phone:	(617) 886-7358
Project Name:	125-131 SUMNER STREET
Project Number:	129204-005
Report Date:	05/02/18

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1815179-01	B101 (MW)_20180427	WATER	EAST BOSTON, MA	04/27/18 11:35	04/27/18
L1815179-02	A2(OW)_20180427	WATER	EAST BOSTON, MA	04/27/18 08:30	04/27/18
L1815179-03	C2(OW)_20180427	WATER	EAST BOSTON, MA	04/27/18 09:45	04/27/18
L1815179-04	TRIP BLANK	WATER	EAST BOSTON, MA	04/27/18 00:00	04/27/18

Project Name: 125-131 SUMNER STREET

Lab Number: L1815179

Project Number: 129204-005

Report Date: 05/02/18

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1815179-01 through -04 (all submitted samples), did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0026), as well as the average response factor for 1,4-dioxane.

The continuing calibration standard, associated with L1815179-01 through -04 (all submitted samples), is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

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

Authorized Signature:



Cristin Walker

Title: Technical Director/Representative

Date: 05/02/18

ORGANICS

VOLATILES

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

SAMPLE RESULTS

Lab ID: L1815179-01
Client ID: B101 (MW)_20180427
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 11:35
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 05/02/18 11:23
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS****Lab ID:** L1815179-01**Date Collected:** 04/27/18 11:35**Client ID:** B101 (MW)_20180427**Date Received:** 04/27/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

SAMPLE RESULTS

Lab ID: L1815179-01
Client ID: B101 (MW)_20180427
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 11:35
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	105		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-02
 Client ID: A2(OW)_20180427
 Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 08:30
 Date Received: 04/27/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 05/02/18 11:56
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-02
Client ID: A2(OW)_20180427
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 08:30
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

SAMPLE RESULTS

Lab ID: L1815179-02
Client ID: A2(OW)_20180427
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 08:30
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	101		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-03
 Client ID: C2(OW)_20180427
 Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 09:45
 Date Received: 04/27/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 05/02/18 12:30
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-03
Client ID: C2(OW)_20180427
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 09:45
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS****Lab ID:** L1815179-03**Date Collected:** 04/27/18 09:45**Client ID:** C2(OW)_20180427**Date Received:** 04/27/18**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified**Sample Depth:**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	104		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-04
 Client ID: TRIP BLANK
 Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 00:00
 Date Received: 04/27/18
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 05/02/18 05:27
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**SAMPLE RESULTS**

Lab ID: L1815179-04
Client ID: TRIP BLANK
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 00:00
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

SAMPLE RESULTS

Lab ID: L1815179-04
Client ID: TRIP BLANK
Sample Location: EAST BOSTON, MA

Date Collected: 04/27/18 00:00
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	101		70-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1815179

Project Number: 129204-005

Report Date: 05/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 05/02/18 04:53
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1111697-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.40	--
cis-1,3-Dichloropropene	ND		ug/l	0.40	--
1,3-Dichloropropene, Total	ND		ug/l	0.40	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1815179

Project Number: 129204-005

Report Date: 05/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 05/02/18 04:53
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1111697-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1815179

Project Number: 129204-005

Report Date: 05/02/18

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 05/02/18 04:53
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-04 Batch: WG1111697-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1815179

Report Date: 05/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1111697-3 WG1111697-4								
Methylene chloride	100		92		70-130	8		20
1,1-Dichloroethane	94		94		70-130	0		20
Chloroform	95		97		70-130	2		20
Carbon tetrachloride	99		98		70-130	1		20
1,2-Dichloropropane	90		92		70-130	2		20
Dibromochloromethane	95		98		70-130	3		20
1,1,2-Trichloroethane	92		93		70-130	1		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	94		93		70-130	1		20
Trichlorofluoromethane	110		110		70-130	0		20
1,2-Dichloroethane	94		99		70-130	5		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	94		95		70-130	1		20
trans-1,3-Dichloropropene	93		96		70-130	3		20
cis-1,3-Dichloropropene	91		93		70-130	2		20
1,1-Dichloropropene	94		93		70-130	1		20
Bromoform	93		96		70-130	3		20
1,1,2,2-Tetrachloroethane	93		93		70-130	0		20
Benzene	87		89		70-130	2		20
Toluene	93		91		70-130	2		20
Ethylbenzene	95		94		70-130	1		20
Chloromethane	87		90		70-130	3		20
Bromomethane	98		94		70-130	4		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1815179

Report Date: 05/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1111697-3 WG1111697-4								
Vinyl chloride	100		100		70-130	0		20
Chloroethane	110		100		70-130	10		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	99		97		70-130	2		20
Trichloroethene	98		99		70-130	1		20
1,2-Dichlorobenzene	96		98		70-130	2		20
1,3-Dichlorobenzene	97		97		70-130	0		20
1,4-Dichlorobenzene	98		96		70-130	2		20
Methyl tert butyl ether	93		98		70-130	5		20
p/m-Xylene	100		115		70-130	14		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	94		96		70-130	2		20
Dibromomethane	98		96		70-130	2		20
1,2,3-Trichloropropane	92		92		70-130	0		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	96		95		70-130	1		20
Acetone	140	Q	130		70-130	7		20
Carbon disulfide	93		96		70-130	3		20
2-Butanone	99		100		70-130	1		20
4-Methyl-2-pentanone	95		100		70-130	5		20
2-Hexanone	95		93		70-130	2		20
Bromochloromethane	100		99		70-130	1		20
Tetrahydrofuran	93		99		70-130	6		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-005

Lab Number: L1815179

Report Date: 05/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1111697-3 WG1111697-4								
2,2-Dichloropropane	100		100		70-130	0		20
1,2-Dibromoethane	96		96		70-130	0		20
1,3-Dichloropropane	94		92		70-130	2		20
1,1,1,2-Tetrachloroethane	95		96		70-130	1		20
Bromobenzene	98		93		70-130	5		20
n-Butylbenzene	81		82		70-130	1		20
sec-Butylbenzene	93		93		70-130	0		20
tert-Butylbenzene	94		93		70-130	1		20
o-Chlorotoluene	91		90		70-130	1		20
p-Chlorotoluene	94		92		70-130	2		20
1,2-Dibromo-3-chloropropane	96		99		70-130	3		20
Hexachlorobutadiene	100		100		70-130	0		20
Isopropylbenzene	96		93		70-130	3		20
p-Isopropyltoluene	92		92		70-130	0		20
Naphthalene	82		88		70-130	7		20
n-Propylbenzene	93		90		70-130	3		20
1,2,3-Trichlorobenzene	88		94		70-130	7		20
1,2,4-Trichlorobenzene	90		96		70-130	6		20
1,3,5-Trimethylbenzene	93		91		70-130	2		20
1,2,4-Trimethylbenzene	90		90		70-130	0		20
Ethyl ether	98		95		70-130	3		20
Isopropyl Ether	91		91		70-130	0		20
Ethyl-Tert-Butyl-Ether	95		96		70-130	1		20

Lab Control Sample Analysis**Batch Quality Control****Project Name:** 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-04 Batch: WG1111697-3 WG1111697-4								
Tertiary-Amyl Methyl Ether	92		96		70-130	4		20
1,4-Dioxane	104		104		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		99		70-130
Toluene-d8	99		97		70-130
4-Bromofluorobenzene	96		94		70-130
Dibromofluoromethane	102		101		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1815179**Project Number:** 129204-005**Report Date:** 05/02/18**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1815179-01A	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-01B	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-01C	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-02A	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-02B	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-02C	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-03A	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-03B	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-03C	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-04A	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)
L1815179-04B	Vial HCl preserved	A	NA		3.8	Y	Absent		MCP-8260-10(14)

Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

Lab Number: L1815179
Report Date: 05/02/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report



Project Name: 125-131 SUMNER STREET
Project Number: 129204-005

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Data Qualifiers

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

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

Project Name: 125-131 SUMNER STREET
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REFERENCES

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

LIMITATION OF LIABILITIES

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

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



Certification Information

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

Westborough Facility

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

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

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

EPA 300: DW: Bromide

EPA 6860: SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

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

Mansfield Facility

SM 2540D: TSS

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

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E,**

SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.

EPA 624: Volatile Halocarbons & Aromatics,

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

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

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water

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

EPA 522.

Non-Potable Water

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

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

EPA 245.1 Hg.

SM2340B

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

Method Blank Summary
Form 4
VOLATILES

Client	: Haley & Aldrich, Inc.	Lab Number	: L1815179
Project Name	: 125-131 SUMNER STREET	Project Number	: 129204-005
Lab Sample ID	: WG1111697-5	Lab File ID	: VJ180502A08
Instrument ID	: JACK		
Matrix	: WATER	Analysis Date	: 05/02/18 04:53

Client Sample No.	Lab Sample ID	Analysis Date
WG1111697-3LCS	WG1111697-3	05/02/18 03:13
WG1111697-4LCSD	WG1111697-4	05/02/18 03:46
TRIP BLANK	L1815179-04	05/02/18 05:27
B101 (MW)_20180427	L1815179-01	05/02/18 11:23
A2(OW)_20180427	L1815179-02	05/02/18 11:56
C2(OW)_20180427	L1815179-03	05/02/18 12:30

Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ180502A02
 Sample No : WG1111697-2
 Channel :

Lab Number : L1815179
 Project Number : 129204-005
 Calibration Date : 05/02/18 03:13
 Init. Calib. Date(s) : 04/18/18 04/18/18
 Init. Calib. Times : 07:18 11:11

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	98	0
Dichlorodifluoromethane	0.37	0.354	-	4.3	20	92	0
Chloromethane	0.674	0.587	-	12.9	20	94	0
Vinyl chloride	0.508	0.513	-	-1	20	102	0
Bromomethane	10	9.843	-	1.6	20	94	0
Chloroethane	0.251	0.268	-	-6.8	20	102	0
Trichlorofluoromethane	0.516	0.572	-	-10.9	20	109	0
Ethyl ether	0.152	0.148	-	2.6	20	100	0
1,1-Dichloroethene	0.296	0.302	-	-2	20	105	0
Carbon disulfide	0.748	0.693	-	7.4	20	98	0
Methylene chloride	0.326	0.333	-	-2.1	20	102	0
Acetone	10	14.244	-	-42.4*	20	146	0
trans-1,2-Dichloroethene	0.334	0.332	-	0.6	20	98	0
Methyl tert-butyl ether	0.843	0.786	-	6.8	20	89	0
Diisopropyl ether	1.938	1.758	-	9.3	20	90	0
1,1-Dichloroethane	0.883	0.828	-	6.2	20	92	0
Ethyl tert-butyl ether	1.529	1.449	-	5.2	20	94	0
cis-1,2-Dichloroethene	0.415	0.391	-	5.8	20	92	0
2,2-Dichloropropane	0.635	0.656	-	-3.3	20	98	0
Bromochloromethane	0.171	0.173	-	-1.2	20	101	0
Chloroform	0.721	0.688	-	4.6	20	94	0
Carbon tetrachloride	0.566	0.562	-	0.7	20	103	0
Tetrahydrofuran	0.126	0.117	-	7.1	20	89	0
Dibromofluoromethane	0.233	0.237	-	-1.7	20	98	0
1,1,1-Trichloroethane	0.662	0.663	-	-0.2	20	101	0
2-Butanone	0.177	0.176	-	0.6	20	106	0
1,1-Dichloropropene	0.611	0.572	-	6.4	20	100	0
Benzene	1.756	1.534	-	12.6	20	90	0
tert-Amyl methyl ether	1.036	0.955	-	7.8	20	95	0
1,2-Dichloroethane-d4	0.312	0.303	-	2.9	20	96	0
1,2-Dichloroethane	0.619	0.58	-	6.3	20	94	0
Trichloroethene	0.429	0.419	-	2.3	20	100	0
Dibromomethane	0.206	0.202	-	1.9	20	100	0
1,2-Dichloropropane	0.499	0.449	-	10	20	89	-.01
Bromodichloromethane	0.533	0.499	-	6.4	20	95	0
1,4-Dioxane	0.00241	0.0025*	-	-3.7	20	103	0
cis-1,3-Dichloropropene	0.686	0.624	-	9	20	93	0
Chlorobenzene-d5	1	1	-	0	20	100	0
Toluene-d8	1.25	1.243	-	0.6	20	101	0
Toluene	1.419	1.32	-	7	20	97	0
4-Methyl-2-pentanone	0.162	0.154	-	4.9	20	95	0
Tetrachloroethene	0.56	0.558	-	0.4	20	107	0
trans-1,3-Dichloropropene	0.748	0.697	-	6.8	20	96	0
1,1,2-Trichloroethane	0.327	0.3	-	8.3	20	97	0
Chlorodibromomethane	0.433	0.413	-	4.6	20	98	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ180502A02
 Sample No : WG1111697-2
 Channel :

Lab Number : L1815179
 Project Number : 129204-005
 Calibration Date : 05/02/18 03:13
 Init. Calib. Date(s) : 04/18/18 04/18/18
 Init. Calib. Times : 07:18 11:11

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.697	0.656	-	5.9	20	96	0
1,2-Dibromoethane	0.382	0.368	-	3.7	20	99	-.01
2-Hexanone	0.336	0.32	-	4.8	20	105	0
Chlorobenzene	1.481	1.395	-	5.8	20	98	0
Ethylbenzene	2.776	2.644	-	4.8	20	99	-.02
1,1,1,2-Tetrachloroethane	0.526	0.498	-	5.3	20	96	-.01
p/m Xylene	0.908	0.908	-	0	20	97	-.02
o Xylene	0.955	0.904	-	5.3	20	98	-.02
Styrene	1.557	1.53	-	1.7	20	100	-.02
1,4-Dichlorobenzene-d4	1	1	-	0	20	104	-.02
Bromoform	0.456	0.425	-	6.8	20	101	-.02
Isopropylbenzene	4.93	4.747	-	3.7	20	104	-.02
4-Bromofluorobenzene	0.959	0.924	-	3.6	20	100	-.01
Bromobenzene	1.062	1.037	-	2.4	20	101	-.02
n-Propylbenzene	5.801	5.414	-	6.7	20	100	-.02
1,1,2,2-Tetrachloroethane	0.805	0.752	-	6.6	20	102	-.02
2-Chlorotoluene	3.898	3.566	-	8.5	20	98	-.02
1,3,5-Trimethylbenzene	3.914	3.638	-	7.1	20	103	-.02
1,2,3-Trichloropropane	0.713	0.656	-	8	20	101	-.02
4-Chlorotoluene	3.57	3.338	-	6.5	20	99	-.02
tert-Butylbenzene	3.361	3.173	-	5.6	20	105	-.02
1,2,4-Trimethylbenzene	3.762	3.388	-	9.9	20	98	-.02
sec-Butylbenzene	4.445	4.149	-	6.7	20	105	-.02
p-Isopropyltoluene	3.962	3.662	-	7.6	20	104	-.02
1,3-Dichlorobenzene	2.045	1.979	-	3.2	20	104	-.02
1,4-Dichlorobenzene	2.025	1.99	-	1.7	20	106	-.02
n-Butylbenzene	10	8.142	-	18.6	20	100	-.02
1,2-Dichlorobenzene	1.879	1.809	-	3.7	20	103	-.02
1,2-Dibromo-3-chloropropan	0.13	0.124	-	4.6	20	106	-.01
Hexachlorobutadiene	0.347	0.36	-	-3.7	20	115	0
1,2,4-Trichlorobenzene	0.856	0.773	-	9.7	20	100	-.01
Naphthalene	1.826	1.499	-	17.9	20	92	-.01
1,2,3-Trichlorobenzene	0.757	0.665	-	12.2	20	96	-.01

* Value outside of QC limits.





ANALYTICAL REPORT

Lab Number:	L1909859
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Denis Bell
Phone:	(617) 886-7300
Project Name:	CLIPPERSHIP APTS
Project Number:	129204-009
Report Date:	03/19/19

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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: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1909859-01	B101 (MW)	WATER	EAST BOSTON, MA	03/13/19 12:30	03/13/19

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19


Case Narrative (continued)

Microextractables

WG1217014: Due to the changeover to Daylight Savings Time, the samples in this batch were analyzed one hour later than indicated on the report.

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

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 03/19/19

ORGANICS

VOLATILES

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 03/14/19 16:58
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: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
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	112		60-140
Fluorobenzene	100		60-140
4-Bromofluorobenzene	98		60-140

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 03/14/19 16:58
Analyst: GT

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

1,4-Dioxane	ND		ug/l	50	--	1
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	116		60-140
4-Bromofluorobenzene	92		60-140

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 03/19/19 09:33
Analyst: AWS

Extraction Method: EPA 504.1
Extraction Date: 03/19/19 08:59

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: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Analytical Method: 128,624.1
 Analytical Date: 03/14/19 10:46
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1216008-4					
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: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19**Method Blank Analysis**
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 03/14/19 10:46
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1216008-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	112		60-140
Fluorobenzene	101		60-140
4-Bromofluorobenzene	95		60-140

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19**Method Blank Analysis**
Batch Quality Control

Analytical Method: 128,624.1-SIM

Analytical Date: 03/14/19 10:46

Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1216017-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	117		60-140
4-Bromofluorobenzene	93		60-140

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19**Method Blank Analysis**
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 03/19/19 08:51
Analyst: AWS

Extraction Method: EPA 504.1
Extraction Date: 03/19/19 08:59

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1217014-1					
1,2-Dibromoethane	ND		ug/l	0.010	-- A

Lab Control Sample Analysis Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1216008-3								
Methylene chloride	110		-		60-140	-		28
1,1-Dichloroethane	110		-		50-150	-		49
Carbon tetrachloride	110		-		70-130	-		41
1,1,2-Trichloroethane	100		-		70-130	-		45
Tetrachloroethene	95		-		70-130	-		39
1,2-Dichloroethane	120		-		70-130	-		49
1,1,1-Trichloroethane	115		-		70-130	-		36
Benzene	115		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	100		-		60-140	-		63
Vinyl chloride	105		-		5-195	-		66
1,1-Dichloroethene	110		-		50-150	-		32
cis-1,2-Dichloroethene	105		-		60-140	-		30
Trichloroethene	110		-		65-135	-		48
1,2-Dichlorobenzene	95		-		65-135	-		57
1,3-Dichlorobenzene	90		-		70-130	-		43
1,4-Dichlorobenzene	90		-		65-135	-		57
p/m-Xylene	92		-		60-140	-		30
o-xylene	90		-		60-140	-		30
Acetone	108		-		40-160	-		30
Methyl tert butyl ether	110		-		60-140	-		30
Tert-Butyl Alcohol	120		-		60-140	-		30
Tertiary-Amyl Methyl Ether	115		-		60-140	-		30

Lab Control Sample Analysis**Batch Quality Control****Project Name:** CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1216008-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	112				60-140
Fluorobenzene	104				60-140
4-Bromofluorobenzene	96				60-140

Lab Control Sample Analysis**Batch Quality Control****Project Name:** CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1216017-3								
1,4-Dioxane	110		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	117				60-140
4-Bromofluorobenzene	93				60-140

Lab Control Sample Analysis
Batch Quality Control**Project Name:** CLIPPERSHIP APTS**Project Number:** 129204-009**Lab Number:** L1909859**Report Date:** 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG1217014-2									
1,2-Dibromoethane	104		-		80-120	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1217014-3 QC Sample: L1909801-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.25	0.275	110		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.25	0.269	108		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 03/18/19 05:01
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 03/16/19 13:06

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	76		42-122
2-Fluorobiphenyl	75		46-121
4-Terphenyl-d14	79		47-138

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 03/17/19 15:47
Analyst: DV

Extraction Method: EPA 625.1
Extraction Date: 03/16/19 13:07

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	50		25-87
Phenol-d6	35		16-65
Nitrobenzene-d5	90		42-122
2-Fluorobiphenyl	75		46-121
2,4,6-Tribromophenol	79		45-128
4-Terphenyl-d14	77		47-138

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Method Blank Analysis Batch Quality Control

Analytical Method: 129,625.1
 Analytical Date: 03/18/19 04:11
 Analyst: SZ

Extraction Method: EPA 625.1
 Extraction Date: 03/16/19 13:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1216356-1					
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	70		42-122
2-Fluorobiphenyl	77		46-121
4-Terphenyl-d14	83		47-138

Project Name: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Analytical Method: 129,625.1-SIM

Extraction Method: EPA 625.1

Analytical Date: 03/17/19 15:21

Extraction Date: 03/16/19 13:07

Analyst: DV

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1216357-1					
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	34		16-65
Nitrobenzene-d5	83		42-122
2-Fluorobiphenyl	70		46-121
2,4,6-Tribromophenol	73		45-128
4-Terphenyl-d14	81		47-138



Lab Control Sample Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1216356-2								
Bis(2-ethylhexyl)phthalate	92		-		29-137	-		30
Butyl benzyl phthalate	107		-		1-140	-		30
Di-n-butylphthalate	98		-		8-120	-		30
Di-n-octylphthalate	93		-		19-132	-		30
Diethyl phthalate	93		-		1-120	-		30
Dimethyl phthalate	91		-		1-120	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	72				42-122
2-Fluorobiphenyl	80				46-121
4-Terphenyl-d14	87				47-138

Lab Control Sample Analysis Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1216357-2								
Acenaphthene	82		-		60-132	-		30
Fluoranthene	80		-		43-121	-		30
Naphthalene	74		-		36-120	-		30
Benzo(a)anthracene	84		-		42-133	-		30
Benzo(a)pyrene	86		-		32-148	-		30
Benzo(b)fluoranthene	81		-		42-140	-		30
Benzo(k)fluoranthene	81		-		25-146	-		30
Chrysene	82		-		44-140	-		30
Acenaphthylene	84		-		54-126	-		30
Anthracene	78		-		43-120	-		30
Benzo(ghi)perylene	84		-		1-195	-		30
Fluorene	88		-		70-120	-		30
Phenanthrene	74		-		65-120	-		30
Dibenzo(a,h)anthracene	88		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	89		-		1-151	-		30
Pyrene	79		-		70-120	-		30
Pentachlorophenol	67		-		38-152	-		30

Lab Control Sample Analysis**Batch Quality Control****Project Name:** CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1216357-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51				25-87
Phenol-d6	34				16-65
Nitrobenzene-d5	86				42-122
2-Fluorobiphenyl	73				46-121
2,4,6-Tribromophenol	75				45-128
4-Terphenyl-d14	76				47-138

PCBS

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
Field Prep: Refer to COC

Sample Depth:

Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 03/16/19 12:58
Analyst: JM

Extraction Method: EPA 608.3
Extraction Date: 03/15/19 10:18
Cleanup Method: EPA 3665A
Cleanup Date: 03/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 03/16/19

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		37-123	B
Decachlorobiphenyl	57		38-114	B
2,4,5,6-Tetrachloro-m-xylene	90		37-123	A
Decachlorobiphenyl	91		38-114	A

Project Name: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Analytical Method: 127,608.3
 Analytical Date: 03/16/19 11:44
 Analyst: JM

Extraction Method: EPA 608.3
 Extraction Date: 03/15/19 10:17
 Cleanup Method: EPA 3665A
 Cleanup Date: 03/16/19
 Cleanup Method: EPA 3660B
 Cleanup Date: 03/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1215930-1						
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	82		37-123	B
Decachlorobiphenyl	61		38-114	B
2,4,5,6-Tetrachloro-m-xylene	91		37-123	A
Decachlorobiphenyl	90		38-114	A

Lab Control Sample Analysis**Batch Quality Control****Project Name:** CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1215930-2									
Aroclor 1016	94		-		50-140	-		36	A
Aroclor 1260	91		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80				37-123	B
Decachlorobiphenyl	65				38-114	B
2,4,5,6-Tetrachloro-m-xylene	88				37-123	A
Decachlorobiphenyl	87				38-114	A

METALS

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19**SAMPLE RESULTS**

Lab ID: L1909859-01

Date Collected: 03/13/19 12:30

Client ID: B101 (MW)

Date Received: 03/13/19

Sample Location: EAST BOSTON, MA

Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00177		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Copper, Total	0.00850		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Iron, Total	0.898		mg/l	0.050	--	1	03/14/19 17:03	03/15/19 19:01	EPA 3005A	19,200.7	AB
Lead, Total	0.00269		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	03/18/19 15:07	03/18/19 22:07	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	03/14/19 17:03	03/15/19 10:42	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	148		mg/l	0.660	NA	1	03/14/19 17:03	03/15/19 19:01	EPA 3005A	19,200.7	AB

General Chemistry - Mansfield Lab

Chromium, Trivalent	ND		mg/l	0.010	--	1		03/15/19 10:42	NA	107,-	
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Project Name: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1215687-1										
Antimony, Total	ND		mg/l	0.00400	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	03/14/19 17:03	03/15/19 10:23	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	03/14/19 17:03	03/15/19 10:23	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: WG1215688-1										
Iron, Total	ND		mg/l	0.050	--	1	03/14/19 17:03	03/15/19 16:58	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1215688-1										
Hardness	ND		mg/l	0.660	NA	1	03/14/19 17:03	03/15/19 16:58	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A



Project Name: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1216786-1										
Mercury, Total	ND		mg/l	0.0002	--	1	03/18/19 15:07	03/18/19 21:40	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1215687-2								
Antimony, Total	111		-		85-115	-		
Arsenic, Total	107		-		85-115	-		
Cadmium, Total	111		-		85-115	-		
Chromium, Total	104		-		85-115	-		
Copper, Total	106		-		85-115	-		
Lead, Total	109		-		85-115	-		
Nickel, Total	108		-		85-115	-		
Selenium, Total	115		-		85-115	-		
Silver, Total	109		-		85-115	-		
Zinc, Total	110		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1215688-2								
Iron, Total	110		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1215688-2								
Hardness	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1216786-2								
Mercury, Total	115		-		85-115	-		

Matrix Spike Analysis **Batch Quality Control**

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215687-3 QC Sample: L1909763-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.6190	124		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1297	108		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05839	114		-	-		70-130	-		20
Chromium, Total	0.0104	0.2	0.2239	107		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2552	102		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5488	108		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5466	109		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1380	115		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05404	108		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5870	117		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215688-3 QC Sample: L1909763-01 Client ID: MS Sample												
Iron, Total	ND	1	1.10	110		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215688-3 QC Sample: L1909763-01 Client ID: MS Sample												
Hardness	229	66.2	290	92		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215688-7 QC Sample: L1909872-01 Client ID: MS Sample												
Iron, Total	12.1	1	13.0	90		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215688-7 QC Sample: L1909872-01 Client ID: MS Sample												
Hardness	220	66.2	284	97		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1216786-3 QC Sample: L1909843-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0056	112		-	-		70-130	-		20

Matrix Spike Analysis Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1216786-5 QC Sample: L1909843-02 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0055	110	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215687-4 QC Sample: L1909763-01 Client ID: DUP Sample						
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1215688-4 QC Sample: L1909763-01 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1216786-4 QC Sample: L1909843-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1216786-6 QC Sample: L1909843-02 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

SAMPLE RESULTS

Lab ID: L1909859-01
Client ID: B101 (MW)
Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 12:30
Date Received: 03/13/19
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										
SALINITY	ND		SU	2.0	--	1	-	03/14/19 06:45	121,2520B	MA
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	03/14/19 11:25	121,2540D	DR
Cyanide, Total	ND		mg/l	0.005	--	1	03/14/19 14:20	03/14/19 16:47	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	03/13/19 23:25	121,4500CL-D	AS
Nitrogen, Ammonia	10.1		mg/l	0.075	--	1	03/14/19 02:00	03/14/19 23:32	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	03/14/19 16:00	03/14/19 22:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	03/14/19 07:20	03/14/19 11:18	4,420.1	BR
Chromium, Hexavalent	ND		mg/l	0.010	--	1	03/13/19 23:00	03/13/19 23:24	1,7196A	JW
Anions by Ion Chromatography - Westborough Lab										
Chloride	250.		mg/l	25.0	--	50	-	03/15/19 17:05	44,300.0	AU



Project Name: CLIPPERSHIP APTS

Lab Number: L1909859

Project Number: 129204-009

Report Date: 03/19/19

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215339-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	03/13/19 23:00	03/13/19 23:22	1,7196A	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215340-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	03/13/19 23:25	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215377-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	03/14/19 02:00	03/14/19 23:10	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215447-1										
Phenolics, Total	ND		mg/l	0.030	--	1	03/14/19 07:20	03/14/19 11:16	4,420.1	BR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215453-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	03/14/19 11:25	121,2540D	DR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215599-1										
Cyanide, Total	ND		mg/l	0.005	--	1	03/14/19 14:20	03/14/19 16:21	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215678-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	03/14/19 16:00	03/14/19 22:00	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1216881-1										
Chloride	ND		mg/l	0.500	--	1	-	03/15/19 16:05	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215339-2								
Chromium, Hexavalent	97		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215340-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215377-2								
Nitrogen, Ammonia	97		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215447-2								
Phenolics, Total	98		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215448-1								
SALINITY	101		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215599-2								
Cyanide, Total	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215678-2								
TPH	84		-		64-132	-		34

Lab Control Sample Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1216881-2					
Chloride	98	-	90-110	-	

Matrix Spike Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215339-4 QC Sample: L1909859-01 Client ID: B101 (MW)												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215340-4 QC Sample: L1909859-01 Client ID: B101 (MW)												
Chlorine, Total Residual	ND	0.25	0.24	96		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215377-4 QC Sample: L1900003-63 Client ID: MS Sample												
Nitrogen, Ammonia	0.334	4	4.03	92		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215447-4 QC Sample: L1909859-01 Client ID: B101 (MW)												
Phenolics, Total	ND	0.4	0.42	105		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215599-4 WG1215599-5 QC Sample: L1909618-04 Client ID: MS Sample												
Cyanide, Total	0.257	0.4	0.622	91		0.601	86	Q	90-110	3		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215678-4 QC Sample: L1909499-01 Client ID: MS Sample												
TPH	ND	20.8	22.5	108		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1216881-3 QC Sample: L1909957-01 Client ID: MS Sample												
Chloride	21.9	4	25.1	80	Q	-	-		90-110	-		18

Lab Duplicate Analysis *Batch Quality Control*

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909859

Report Date: 03/19/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215339-3 QC Sample: L1909859-01 Client ID: B101 (MW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215340-3 QC Sample: L1909859-01 Client ID: B101 (MW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215377-3 QC Sample: L1900003-63 Client ID: DUP Sample						
Nitrogen, Ammonia	0.334	0.343	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215447-3 QC Sample: L1909859-01 Client ID: B101 (MW)						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215448-2 QC Sample: L1909859-01 Client ID: B101 (MW)						
SALINITY	ND	ND	SU	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215453-2 QC Sample: L1909599-05 Client ID: DUP Sample						
Solids, Total Suspended	95	100	mg/l	5		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215599-3 QC Sample: L1909618-04 Client ID: DUP Sample						
Cyanide, Total	0.257	0.182	mg/l	34	Q	30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215678-3 QC Sample: L1909499-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1216881-4 QC Sample: L1909957-01 Client ID: DUP Sample						
Chloride	21.9	22.0	mg/l	0		18

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Serial_No: 03191916:52
Lab Number: L1909859
Report Date: 03/19/19

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1909859-01A	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01B	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01C	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01D	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01E	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01F	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L1909859-01G	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		504(14)
L1909859-01H	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		504(14)
L1909859-01I	Vial HCl preserved	A	N/A	N/A	3.2	Y	Absent		ARCHIVE()
L1909859-01J	Vial HCl preserved	A	N/A	N/A	3.2	Y	Absent		ARCHIVE()
L1909859-01K	Vial HCl preserved	A	N/A	N/A	3.2	Y	Absent		ARCHIVE()
L1909859-01L	Amber 120ml unpreserved	A	7	7	3.2	Y	Absent		SALINITY(28)
L1909859-01M	Plastic 250ml NaOH preserved	A	>12	>12	3.2	Y	Absent		TCN-4500(14)
L1909859-01N	Plastic 250ml NaOH preserved	A	>12	>12	3.2	Y	Absent		HOLD-WETCHEM()
L1909859-01O	Plastic 500ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		NH3-4500(28)
L1909859-01P	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		HOLD-METAL-DISSOLVED(180)
L1909859-01Q	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1909859-01R	Plastic 950ml unpreserved	A	7	7	3.2	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L1909859-01S	Plastic 950ml unpreserved	A	7	7	3.2	Y	Absent		TSS-2540(7)
L1909859-01T	Amber 950ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TPHENOL-420(28)
L1909859-01U	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Serial_No:03191916:52
Lab Number: L1909859
Report Date: 03/19/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1909859-01V	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L1909859-01W	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L1909859-01X	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1909859-01Y	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1909859-01Y1	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L1909859-01Z	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		TPH-1664(28)
L1909859-01Z1	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		TPH-1664(28)

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909859**Project Number:** 129204-009**Report Date:** 03/19/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the

Report Format: Data Usability Report



Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
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original method.

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909859
Report Date: 03/19/19

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 107 Alpha Analytical - In-house calculation method.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.
- 128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.
- 129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

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

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



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

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

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

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

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate. **EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

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

[illegible]



ANALYTICAL REPORT

Lab Number:	L1909861
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Denis Bell
Phone:	(617) 886-7300
Project Name:	CLIPPERSHIP APTS
Project Number:	129204-009
Report Date:	03/18/19

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

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

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



Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909861
Report Date: 03/18/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1909861-01	SURFACE WATER	WATER	EAST BOSTON, MA	03/13/19 13:45	03/13/19

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909861
Report Date: 03/18/19

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

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

Authorized Signature:



Michelle M. Morris

Title: Technical Director/Representative

Date: 03/18/19

INORGANICS & MISCELLANEOUS

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909861

Report Date: 03/18/19

SAMPLE RESULTS

Lab ID: L1909861-01

Client ID: SURFACE WATER

Sample Location: EAST BOSTON, MA

Date Collected: 03/13/19 13:45

Date Received: 03/13/19

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	16		SU	2.0	--	1	-	03/14/19 06:45	121,2520B	MA
pH (H)	7.7		SU	-	NA	1	-	03/14/19 06:19	121,4500H+-B	MA
Nitrogen, Ammonia	0.489		mg/l	0.075	--	1	03/14/19 02:00	03/14/19 23:33	121,4500NH3-BH	AT



Project Name: CLIPPERSHIP APTS

Lab Number: L1909861

Project Number: 129204-009

Report Date: 03/18/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1215377-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	03/14/19 02:00	03/14/19 23:10	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Project Number: 129204-009

Lab Number: L1909861

Report Date: 03/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215377-2								
Nitrogen, Ammonia	97		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215448-1								
SALINITY	101		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1215465-1								
pH	100		-		99-101	-		5

Matrix Spike Analysis

Batch Quality Control

Project Name: CLIPPERSHIP APTS

Lab Number: L1909861

Project Number: 129204-009

Report Date: 03/18/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215377-4 QC Sample: L1900003-63 Client ID: MS Sample												
Nitrogen, Ammonia	0.334	4	4.03	92		-	-		80-120	-		20

Lab Duplicate Analysis *Batch Quality Control*

Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909861
Report Date: 03/18/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215377-3 QC Sample: L1900003-63 Client ID: DUP Sample						
Nitrogen, Ammonia	0.334	0.343	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215448-2 QC Sample: L1909859-01 Client ID: DUP Sample						
SALINITY	ND	ND	SU	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1215465-2 QC Sample: L1900003-69 Client ID: DUP Sample						
pH	7.4	7.5	SU	1		5

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909861**Project Number:** 129204-009**Report Date:** 03/18/19**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

B Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1909861-01A	Plastic 60ml unpreserved	B	7	7	4.2	Y	Absent		PH-4500(.01)
L1909861-01B	Amber 120ml unpreserved	B	7	7	4.2	Y	Absent		SALINITY(28)
L1909861-01C	Plastic 500ml H2SO4 preserved	B	<2	<2	4.2	Y	Absent		NH3-4500(28)

Project Name: CLIPPERSHIP APTS**Lab Number:** L1909861**Project Number:** 129204-009**Report Date:** 03/18/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the

Report Format: Data Usability Report



Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909861
Report Date: 03/18/19

original method.

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

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

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Report Format: Data Usability Report



Project Name: CLIPPERSHIP APTS
Project Number: 129204-009

Lab Number: L1909861
Report Date: 03/18/19

REFERENCES

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

LIMITATION OF LIABILITIES

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

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



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information

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

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

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

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate. **EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg. EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

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



ANALYTICAL REPORT

Lab Number:	L1708040
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Teresa Cooper
Phone:	(617) 886-7358
Project Name:	125-131 SUMNER STREET
Project Number:	129204-003
Report Date:	03/22/17

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1708040-01	A2_31617	WATER	EAST BOSTON, MA	03/16/17 10:50	03/16/17
L1708040-02	B101_31617	WATER	EAST BOSTON, MA	03/16/17 13:10	03/16/17
L1708040-03	C2_31617	WATER	EAST BOSTON, MA	03/16/17 14:10	03/16/17

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

MADEP MCP Response Action Analytical Report Certification

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

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

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



Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1708040-01 (A2_31617) and -02 (B101_31617), did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 2-butanone and 1,4-dioxane.

The initial calibration, associated with L1708040-03 (C2_31617), did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0015), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L1708040-01, -02 and -03 (all samples), are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

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

Authorized Signature:

 Melissa Cripps

Title: Technical Director/Representative

Date: 03/22/17

ORGANICS

VOLATILES

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS**

Lab ID: L1708040-01
Client ID: A2_31617
Sample Location: EAST BOSTON, MA

Date Collected: 03/16/17 10:50
Date Received: 03/16/17
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 03/21/17 10:50
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	1.4		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	23		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	106		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS**

Lab ID: L1708040-02
Client ID: B101_31617
Sample Location: EAST BOSTON, MA
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 03/21/17 11:23
Analyst: PK

Date Collected: 03/16/17 13:10
Date Received: 03/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-02**Date Collected:** 03/16/17 13:10**Client ID:** B101_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

SAMPLE RESULTS

Lab ID: L1708040-02

Date Collected: 03/16/17 13:10

Client ID: B101_31617

Date Received: 03/16/17

Sample Location: EAST BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS**

Lab ID: L1708040-03
Client ID: C2_31617
Sample Location: EAST BOSTON, MA
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 03/18/17 03:21
Analyst: BD

Date Collected: 03/16/17 14:10
Date Received: 03/16/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	1.9		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-03**Date Collected:** 03/16/17 14:10**Client ID:** C2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	18		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	12		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

SAMPLE RESULTS

Lab ID: L1708040-03

Date Collected: 03/16/17 14:10

Client ID: C2_31617

Date Received: 03/16/17

Sample Location: EAST BOSTON, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Volatile Organics - Westborough Lab

Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	94		70-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/17/17 21:47
 Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03 Batch: WG986575-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/17/17 21:47
 Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03 Batch: WG986575-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/17/17 21:47
 Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03 Batch: WG986575-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	97		70-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/21/17 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG987045-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/21/17 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG987045-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C
 Analytical Date: 03/21/17 06:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG987045-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
tert-Butyl Alcohol	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	105		70-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG986575-3 WG986575-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		100		70-130	0		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	99		100		70-130	1		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		100		70-130	0		20
Trichlorofluoromethane	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	110		110		70-130	0		20
Bromodichloromethane	100		100		70-130	0		20
trans-1,3-Dichloropropene	97		100		70-130	3		20
cis-1,3-Dichloropropene	99		100		70-130	1		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	96		97		70-130	1		20
1,1,2,2-Tetrachloroethane	110		110		70-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG986575-3 WG986575-4								
Chloromethane	100		110		70-130	10		20
Bromomethane	92		100		70-130	8		20
Vinyl chloride	120		120		70-130	0		20
Chloroethane	120		120		70-130	0		20
1,1-Dichloroethene	110		120		70-130	9		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	110		100		70-130	10		20
1,3-Dichlorobenzene	110		100		70-130	10		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	98		100		70-130	2		20
p/m-Xylene	95		90		70-130	5		20
o-Xylene	100		85		70-130	16		20
cis-1,2-Dichloroethene	110		100		70-130	10		20
Dibromomethane	100		110		70-130	10		20
1,2,3-Trichloropropane	100		100		70-130	0		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	120		98		70-130	20		20
Acetone	100		110		70-130	10		20
Carbon disulfide	110		100		70-130	10		20
2-Butanone	100		120		70-130	18		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG986575-3 WG986575-4								
4-Methyl-2-pentanone	90		95		70-130	5		20
2-Hexanone	86		97		70-130	12		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	110		110		70-130	0		20
2,2-Dichloropropane	96		97		70-130	1		20
1,2-Dibromoethane	100		110		70-130	10		20
1,3-Dichloropropane	110		110		70-130	0		20
1,1,1,2-Tetrachloroethane	95		96		70-130	1		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	120		120		70-130	0		20
sec-Butylbenzene	110		100		70-130	10		20
tert-Butylbenzene	110		100		70-130	10		20
o-Chlorotoluene	100		98		70-130	2		20
p-Chlorotoluene	100		96		70-130	4		20
1,2-Dibromo-3-chloropropane	88		88		70-130	0		20
Hexachlorobutadiene	96		94		70-130	2		20
Isopropylbenzene	110		100		70-130	10		20
p-Isopropyltoluene	110		100		70-130	10		20
Naphthalene	110		110		70-130	0		20
n-Propylbenzene	110		100		70-130	10		20
1,2,3-Trichlorobenzene	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG986575-3 WG986575-4								
1,2,4-Trichlorobenzene	100		110		70-130	10		20
1,3,5-Trimethylbenzene	100		95		70-130	5		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
Ethyl ether	110		110		70-130	0		20
Isopropyl Ether	110		110		70-130	0		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20
Tertiary-Amyl Methyl Ether	96		100		70-130	4		20
1,4-Dioxane	98		92		70-130	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		96		70-130
Toluene-d8	98		103		70-130
4-Bromofluorobenzene	95		96		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG987045-3 WG987045-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	97		100		70-130	3		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	89		93		70-130	4		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		100		70-130	0		20
Trichlorofluoromethane	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		100		70-130	0		20
Bromodichloromethane	86		94		70-130	9		20
trans-1,3-Dichloropropene	86		90		70-130	5		20
cis-1,3-Dichloropropene	87		92		70-130	6		20
1,1-Dichloropropene	110		110		70-130	0		20
Bromoform	84		84		70-130	0		20
1,1,2,2-Tetrachloroethane	96		96		70-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG987045-3 WG987045-4								
Chloromethane	110		110		70-130	0		20
Bromomethane	100		120		70-130	18		20
Vinyl chloride	120		120		70-130	0		20
Chloroethane	120		120		70-130	0		20
1,1-Dichloroethene	100		100		70-130	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	98		96		70-130	2		20
1,4-Dichlorobenzene	100		99		70-130	1		20
Methyl tert butyl ether	95		98		70-130	3		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	95		100		70-130	5		20
1,2,3-Trichloropropane	99		95		70-130	4		20
Styrene	95		100		70-130	5		20
Dichlorodifluoromethane	110		110		70-130	0		20
Acetone	83		88		70-130	6		20
Carbon disulfide	100		110		70-130	10		20
2-Butanone	84		99		70-130	16		20

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG987045-3 WG987045-4								
4-Methyl-2-pentanone	78		80		70-130	3		20
2-Hexanone	77		82		70-130	6		20
Bromochloromethane	100		110		70-130	10		20
Tetrahydrofuran	100		110		70-130	10		20
2,2-Dichloropropane	92		96		70-130	4		20
1,2-Dibromoethane	97		100		70-130	3		20
1,3-Dichloropropane	99		100		70-130	1		20
1,1,1,2-Tetrachloroethane	92		93		70-130	1		20
Bromobenzene	98		96		70-130	2		20
n-Butylbenzene	81		79		70-130	3		20
sec-Butylbenzene	96		94		70-130	2		20
tert-Butylbenzene	96		92		70-130	4		20
o-Chlorotoluene	97		95		70-130	2		20
p-Chlorotoluene	94		92		70-130	2		20
1,2-Dibromo-3-chloropropane	75		80		70-130	6		20
Hexachlorobutadiene	100		94		70-130	6		20
Isopropylbenzene	99		96		70-130	3		20
p-Isopropyltoluene	97		95		70-130	2		20
Naphthalene	89		93		70-130	4		20
n-Propylbenzene	98		95		70-130	3		20
1,2,3-Trichlorobenzene	91		93		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG987045-3 WG987045-4								
1,2,4-Trichlorobenzene	99		100		70-130	1		20
1,3,5-Trimethylbenzene	98		94		70-130	4		20
1,2,4-Trimethylbenzene	96		95		70-130	1		20
Ethyl ether	100		110		70-130	10		20
Isopropyl Ether	100		110		70-130	10		20
Ethyl-Tert-Butyl-Ether	97		100		70-130	3		20
Tertiary-Amyl Methyl Ether	92		96		70-130	4		20
1,4-Dioxane	104		114		70-130	9		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		110		70-130	0		20
tert-Butyl Alcohol	78		80		70-130	3		20
2-Chloroethylvinyl ether	69	Q	60	Q	70-130	14		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		95		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	101		100		70-130

SEMIVOLATILES

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS**

Lab ID: L1708040-01
 Client ID: A2_31617
 Sample Location: EAST BOSTON, MA

Date Collected: 03/16/17 10:50
 Date Received: 03/16/17
 Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water
 Analytical Method: 97,8270D
 Analytical Date: 03/19/17 22:42
 Analyst: ALS

Extraction Method: EPA 3510C
 Extraction Date: 03/17/17 17:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
Acetophenone	ND		ug/l	5.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		15-110
Phenol-d6	31		15-110
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	51		30-130
2,4,6-Tribromophenol	53		15-110
4-Terphenyl-d14	50		30-130

Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

SAMPLE RESULTS

Lab ID: L1708040-01
Client ID: A2_31617
Sample Location: EAST BOSTON, MA

Date Collected: 03/16/17 10:50
Date Received: 03/16/17
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water
Analytical Method: 97,8270D-SIM
Analytical Date: 03/18/17 12:25
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 03/17/17 17:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics by SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.20	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	0.60		ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	ND		ug/l	0.20	--	1
Phenanthrene	ND		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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MCP Semivolatile Organics by SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		15-110
Phenol-d6	32		15-110
Nitrobenzene-d5	70		30-130
2-Fluorobiphenyl	78		30-130
2,4,6-Tribromophenol	97		15-110
4-Terphenyl-d14	61		30-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D
 Analytical Date: 03/19/17 21:47
 Analyst: PS

Extraction Method: EPA 3510C
 Extraction Date: 03/16/17 18:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG986297-1					
Acenaphthene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D
 Analytical Date: 03/19/17 21:47
 Analyst: PS

Extraction Method: EPA 3510C
 Extraction Date: 03/16/17 18:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG986297-1					
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
Acetophenone	ND		ug/l	5.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
 Analytical Date: 03/19/17 21:47
 Analyst: PS

Extraction Method: EPA 3510C
 Extraction Date: 03/16/17 18:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG986297-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		15-110
Phenol-d6	30		15-110
Nitrobenzene-d5	57		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	63		15-110
4-Terphenyl-d14	59		30-130

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D-SIM
 Analytical Date: 03/17/17 09:07
 Analyst: DV

Extraction Method: EPA 3510C
 Extraction Date: 03/16/17 18:05

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01 Batch: WG986311-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D-SIM

Extraction Method: EPA 3510C

Analytical Date: 03/17/17 09:07

Extraction Date: 03/16/17 18:05

Analyst: DV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics by SIM - Westborough Lab for sample(s): 01 Batch: WG986311-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		15-110
Phenol-d6	31		15-110
Nitrobenzene-d5	64		30-130
2-Fluorobiphenyl	68		30-130
2,4,6-Tribromophenol	85		15-110
4-Terphenyl-d14	73		30-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG986297-2 WG986297-3								
Acenaphthene	55		55		40-140	0		20
1,2,4-Trichlorobenzene	53		54		40-140	2		20
Hexachlorobenzene	61		61		40-140	0		20
Bis(2-chloroethyl)ether	54		54		40-140	0		20
2-Chloronaphthalene	58		58		40-140	0		20
1,2-Dichlorobenzene	50		52		40-140	4		20
1,3-Dichlorobenzene	50		52		40-140	4		20
1,4-Dichlorobenzene	49		52		40-140	6		20
3,3'-Dichlorobenzidine	47		45		40-140	4		20
2,4-Dinitrotoluene	60		60		40-140	0		20
2,6-Dinitrotoluene	63		62		40-140	2		20
Azobenzene	59		58		40-140	2		20
Fluoranthene	57		56		40-140	2		20
4-Bromophenyl phenyl ether	62		61		40-140	2		20
Bis(2-chloroisopropyl)ether	53		53		40-140	0		20
Bis(2-chloroethoxy)methane	59		59		40-140	0		20
Hexachlorobutadiene	50		50		40-140	0		20
Hexachloroethane	49		50		40-140	2		20
Isophorone	59		59		40-140	0		20
Naphthalene	55		54		40-140	2		20
Nitrobenzene	57		57		40-140	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG986297-2 WG986297-3								
Bis(2-ethylhexyl)phthalate	62		61		40-140	2		20
Butyl benzyl phthalate	53		52		40-140	2		20
Di-n-butylphthalate	60		59		40-140	2		20
Di-n-octylphthalate	63		62		40-140	2		20
Diethyl phthalate	59		58		40-140	2		20
Dimethyl phthalate	62		62		40-140	0		20
Benzo(a)anthracene	57		56		40-140	2		20
Benzo(a)pyrene	59		59		40-140	0		20
Benzo(b)fluoranthene	58		58		40-140	0		20
Benzo(k)fluoranthene	56		55		40-140	2		20
Chrysene	56		55		40-140	2		20
Acenaphthylene	60		60		40-140	0		20
Anthracene	57		56		40-140	2		20
Benzo(ghi)perylene	57		56		40-140	2		20
Fluorene	58		57		40-140	2		20
Phenanthrene	56		55		40-140	2		20
Dibenzo(a,h)anthracene	58		57		40-140	2		20
Indeno(1,2,3-cd)pyrene	60		58		40-140	3		20
Pyrene	55		54		40-140	2		20
Aniline	28	Q	21	Q	40-140	29	Q	20
4-Chloroaniline	30	Q	26	Q	40-140	14		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG986297-2 WG986297-3								
Dibenzofuran	57		56		40-140	2		20
2-Methylnaphthalene	57		56		40-140	2		20
Acetophenone	61		61		40-140	0		20
2,4,6-Trichlorophenol	64		64		30-130	0		20
2-Chlorophenol	57		57		30-130	0		20
2,4-Dichlorophenol	64		64		30-130	0		20
2,4-Dimethylphenol	60		56		30-130	7		20
2-Nitrophenol	61		60		30-130	2		20
4-Nitrophenol	47		47		30-130	0		20
2,4-Dinitrophenol	59		57		30-130	3		20
Pentachlorophenol	60		62		30-130	3		20
Phenol	31		31		30-130	0		20
2-Methylphenol	54		54		30-130	0		20
3-Methylphenol/4-Methylphenol	54		54		30-130	0		20
2,4,5-Trichlorophenol	64		64		30-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG986297-2 WG986297-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44		44		15-110
Phenol-d6	34		34		15-110
Nitrobenzene-d5	58		58		30-130
2-Fluorobiphenyl	59		59		30-130
2,4,6-Tribromophenol	67		64		15-110
4-Terphenyl-d14	51		51		30-130

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01 Batch: WG986311-2 WG986311-3								
Acenaphthene	85		80		40-140	6		20
2-Chloronaphthalene	78		76		40-140	3		20
Fluoranthene	77		74		40-140	4		20
Hexachlorobutadiene	81		77		40-140	5		20
Naphthalene	76		72		40-140	5		20
Benzo(a)anthracene	88		84		40-140	5		20
Benzo(a)pyrene	88		86		40-140	2		20
Benzo(b)fluoranthene	88		86		40-140	2		20
Benzo(k)fluoranthene	90		87		40-140	3		20
Chrysene	94		91		40-140	3		20
Acenaphthylene	84		83		40-140	1		20
Anthracene	81		77		40-140	5		20
Benzo(ghi)perylene	90		88		40-140	2		20
Fluorene	88		84		40-140	5		20
Phenanthrene	79		74		40-140	7		20
Dibenzo(a,h)anthracene	93		88		40-140	6		20
Indeno(1,2,3-cd)pyrene	90		88		40-140	2		20
Pyrene	76		72		40-140	5		20
2-Methylnaphthalene	77		76		40-140	1		20
Pentachlorophenol	91		87		30-130	4		20
Hexachlorobenzene	101		96		40-140	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics by SIM - Westborough Lab Associated sample(s): 01 Batch: WG986311-2 WG986311-3								
Hexachloroethane	69		66		40-140	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		48		15-110
Phenol-d6	33		32		15-110
Nitrobenzene-d5	72		68		30-130
2-Fluorobiphenyl	79		77		30-130
2,4,6-Tribromophenol	103		97		15-110
4-Terphenyl-d14	66		62		30-130

PETROLEUM HYDROCARBONS

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered
(Dissolved
Metals)**Matrix:** Water**Analytical Method:** 100,VPH-04-1.1**Analytical Date:** 03/18/17 13:35**Analyst:** JM**Quality Control Information****Condition of sample received:**

Satisfactory

Aqueous Preservative:Laboratory Provided Preserved
Container**Sample Temperature upon receipt:**

Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Petroleum Hydrocarbons - Westborough Lab

C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	98		70-130

Project Name: 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17**SAMPLE RESULTS****Lab ID:** L1708040-01**Date Collected:** 03/16/17 10:50**Client ID:** A2_31617**Date Received:** 03/16/17**Sample Location:** EAST BOSTON, MA**Field Prep:** Field Filtered
(Dissolved
Metals)**Matrix:** Water**Extraction Method:** EPA 3510C**Analytical Method:** 98,EPH-04-1.1**Extraction Date:** 03/17/17 14:28**Analytical Date:** 03/19/17 15:16**Cleanup Method1:** EPH-04-1**Analyst:** SR**Cleanup Date1:** 03/18/17**Quality Control Information****Condition of sample received:**

Satisfactory

Aqueous Preservative:Laboratory Provided Preserved
Container**Sample Temperature upon receipt:**

Received on Ice

Sample Extraction method:

Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Extractable Petroleum Hydrocarbons - Westborough Lab

C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	63		40-140
o-Terphenyl	70		40-140
2-Fluorobiphenyl	68		40-140
2-Bromonaphthalene	68		40-140

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1

Analytical Date: 03/19/17 13:10

Analyst: SR

Extraction Method: EPA 3510C

Extraction Date: 03/17/17 14:28

Cleanup Method: EPH-04-1

Cleanup Date: 03/18/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG986241-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	73		40-140
2-Bromonaphthalene	74		40-140

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Analytical Method: 100, VPH-04-1.1

Analytical Date: 03/18/17 12:27

Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG986473-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG986241-2 WG986241-3								
C9-C18 Aliphatics	61		71		40-140	15		25
C19-C36 Aliphatics	78		84		40-140	7		25
C11-C22 Aromatics	68		80		40-140	16		25
Naphthalene	54		62		40-140	14		25
2-Methylnaphthalene	55		63		40-140	14		25
Acenaphthylene	60		70		40-140	15		25
Acenaphthene	59		68		40-140	14		25
Fluorene	62		73		40-140	16		25
Phenanthrene	65		78		40-140	18		25
Anthracene	66		80		40-140	19		25
Fluoranthene	68		82		40-140	19		25
Pyrene	70		85		40-140	19		25
Benzo(a)anthracene	68		83		40-140	20		25
Chrysene	71		86		40-140	19		25
Benzo(b)fluoranthene	70		84		40-140	18		25
Benzo(k)fluoranthene	70		84		40-140	18		25
Benzo(a)pyrene	67		81		40-140	19		25
Indeno(1,2,3-cd)Pyrene	68		82		40-140	19		25
Dibenzo(a,h)anthracene	71		85		40-140	18		25
Benzo(ghi)perylene	65		78		40-140	18		25
Nonane (C9)	46		52		30-140	12		25

Lab Control Sample Analysis **Batch Quality Control**

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG986241-2 WG986241-3								
Decane (C10)	52		60		40-140	14		25
Dodecane (C12)	57		66		40-140	15		25
Tetradecane (C14)	62		71		40-140	14		25
Hexadecane (C16)	67		80		40-140	18		25
Octadecane (C18)	72		86		40-140	18		25
Nonadecane (C19)	72		86		40-140	18		25
Eicosane (C20)	73		88		40-140	19		25
Docosane (C22)	74		89		40-140	18		25
Tetracosane (C24)	74		88		40-140	17		25
Hexacosane (C26)	74		88		40-140	17		25
Octacosane (C28)	74		88		40-140	17		25
Triacontane (C30)	74		89		40-140	18		25
Hexatriacontane (C36)	78		93		40-140	18		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	66		78		40-140
o-Terphenyl	67		79		40-140
2-Fluorobiphenyl	60		71		40-140
2-Bromonaphthalene	62		72		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG986473-1 WG986473-2								
C5-C8 Aliphatics	93		95		70-130	2		25
C9-C12 Aliphatics	91		90		70-130	1		25
C9-C10 Aromatics	99		100		70-130	1		25
Benzene	98		99		70-130	1		25
Toluene	99		101		70-130	2		25
Ethylbenzene	99		100		70-130	1		25
p/m-Xylene	99		100		70-130	1		25
o-Xylene	99		100		70-130	2		25
Methyl tert butyl ether	96		97		70-130	1		25
Naphthalene	97		98		70-130	1		25
1,2,4-Trimethylbenzene	99		100		70-130	1		25
Pentane	88		89		70-130	2		25
2-Methylpentane	94		96		70-130	2		25
2,2,4-Trimethylpentane	98		100		70-130	2		25
n-Nonane	96		96		30-130	0		25
n-Decane	85		85		70-130	1		25
n-Butylcyclohexane	98		96		70-130	2		25

Lab Control Sample Analysis**Batch Quality Control****Project Name:** 125-131 SUMNER STREET**Lab Number:** L1708040**Project Number:** 129204-003**Report Date:** 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG986473-1 WG986473-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	98		99		70-130
2,5-Dibromotoluene-FID	94		94		70-130

METALS

Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

SAMPLE RESULTS

Lab ID: L1708040-01

Date Collected: 03/16/17 10:50

Client ID: A2_31617

Date Received: 03/16/17

Sample Location: EAST BOSTON, MA

Field Prep: Field Filtered
(Dissolved
Metals)

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	ND		mg/l	0.005	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Barium, Dissolved	0.200		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Cadmium, Dissolved	ND		mg/l	0.004	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Chromium, Dissolved	ND		mg/l	0.01	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Copper, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Lead, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Mercury, Dissolved	ND		mg/l	0.0002	--	1	03/17/17 09:43	03/17/17 19:21	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS
Silver, Dissolved	ND		mg/l	0.007	--	1	03/17/17 12:53	03/21/17 02:51	EPA 3005A	97,6010C	PS



Project Name: 125-131 SUMNER STREET

Lab Number: L1708040

Project Number: 129204-003

Report Date: 03/22/17

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG986128-1										
Mercury, Dissolved	ND		mg/l	0.0002	--	1	03/17/17 09:43	03/17/17 19:15	97,7470A	EA

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG986167-1										
Arsenic, Dissolved	ND		mg/l	0.005	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Barium, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Cadmium, Dissolved	ND		mg/l	0.004	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Chromium, Dissolved	ND		mg/l	0.01	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Copper, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Lead, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Selenium, Dissolved	ND		mg/l	0.010	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS
Silver, Dissolved	ND		mg/l	0.007	--	1	03/17/17 12:53	03/21/17 02:38	97,6010C	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 125-131 SUMNER STREET

Project Number: 129204-003

Lab Number: L1708040

Report Date: 03/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG986128-2 WG986128-3								
Mercury, Dissolved	104		103		80-120	1		20
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG986167-2 WG986167-3								
Arsenic, Dissolved	105		106		80-120	1		20
Barium, Dissolved	100		100		80-120	0		20
Cadmium, Dissolved	104		104		80-120	0		20
Chromium, Dissolved	100		95		80-120	5		20
Copper, Dissolved	96		96		80-120	0		20
Lead, Dissolved	99		99		80-120	0		20
Selenium, Dissolved	104		107		80-120	3		20
Silver, Dissolved	101		99		80-120	2		20

Project Name: 125-131 SUMNER STREET**Project Number:** 129204-003**Lab Number:** L1708040**Report Date:** 03/22/17**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

Cooler Information Custody Seal**Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1708040-01A	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-01B	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-01C	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-01D	Vial HCl preserved	A	N/A	4.3	Y	Absent	VPH-10(14)
L1708040-01E	Vial HCl preserved	A	N/A	4.3	Y	Absent	VPH-10(14)
L1708040-01F	Vial HCl preserved	A	N/A	4.3	Y	Absent	VPH-10(14)
L1708040-01G	Amber 1000ml HCl preserved	A	<2	4.3	Y	Absent	EPH-10(14)
L1708040-01H	Amber 1000ml HCl preserved	A	<2	4.3	Y	Absent	EPH-10(14)
L1708040-01I	Amber 1000ml unpreserved	A	7	4.3	Y	Absent	MCP-8270-10(7),MCP-8270SIM-10(7)
L1708040-01J	Amber 1000ml unpreserved	A	7	4.3	Y	Absent	MCP-8270-10(7),MCP-8270SIM-10(7)
L1708040-01K	Plastic 250ml HNO3 preserved	A	<2	4.3	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-CU-6010S-10(180),MCP-SE-6010S-10(180)
L1708040-02A	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-02B	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-02C	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-03A	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-03B	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)
L1708040-03C	Vial HCl preserved	A	N/A	4.3	Y	Absent	MCP-8260-10(14)

*Values in parentheses indicate holding time in days



Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

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

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

Data Qualifiers

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

Report Format: Data Usability Report



Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

Data Qualifiers

- reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Project Name: 125-131 SUMNER STREET
Project Number: 129204-003

Lab Number: L1708040
Report Date: 03/22/17

REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

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.



Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 10

Department: **Quality Assurance**

Published Date: 1/16/2017 11:00:05 AM

Title: **Certificate/Approval Program Summary**

Page 1 of 1

Certification Information


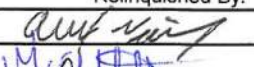

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 300:** DW: Bromide**EPA 6860:** NPW and SCM: Perchlorate**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation**EPA 9012B:** NPW: Total Cyanide**EPA 9050A:** NPW: Specific Conductance**SM3500:** NPW: Ferrous Iron**SM4500:** NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO₂, NO₃.**SM5310C:** DW: Dissolved Organic Carbon**Mansfield Facility****SM 2540D:** TSS**EPA 3005A** NPW**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

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

Westborough Facility:**Drinking Water****EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.****EPA 624:** Volatile Halocarbons & Aromatics,**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.****Mansfield Facility:****Drinking Water****EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.**EPA 245.1 Hg.****SM2340B**

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

 CHAIN OF CUSTODY		Service Centers Brewer, ME 04412 Portsmouth, NH 03801 Mahwah, NJ 07430 Albany, NY 12205 Tonawanda, NY 14150 Holmes, PA 19043		Page <div style="border: 1px solid black; padding: 2px; display: inline-block;">1 of 1</div>		Date Rec'd in Lab 03/16/17		ALPHA Job # 21708040																																																																																																																																																																																			
		Westborough, MA 01581 Mansfield, MA 02048 8 Walkup Dr. 320 Forbes Blvd TEL: 508-898-9220 TEL: 508-822-9300 FAX: 508-898-9193 FAX: 508-822-3288		Project Information Project Name: 125-131 Sumner Street Project Location: East Boston, MA Project #: 129204-003 (Use Project name as Project #) <input type="checkbox"/>		Deliverables <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> EQulS (1 File) <input checked="" type="checkbox"/> EQulS (4 File) <input type="checkbox"/> Other:		Billing Information <input type="checkbox"/> Same as Client Info PO #																																																																																																																																																																																			
H&A Information H&A Client: Haley & Aldrich, Inc. H&A Address: 465 Medford Street Suite 2200 H&A Phone: 617-886-7358 H&A Fax: H&A Email: tcooper@haleyaldrich.com		Project Manager: T.Cooper ALPHAQuote #: Turn-Around Time Standard <input checked="" type="checkbox"/> Due Date: Rush (only if pre approved) <input type="checkbox"/> # of Days:		Regulatory Requirements (Program/Criteria) Note: Select State from menu & identify criteria.		Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> Other:																																																																																																																																																																																					
These samples have been previously analyzed by Alpha <input type="checkbox"/> Other project specific requirements/comments: <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">COC edits by Gina Hall AAL 3/17/17 - Copper is Dissolved FF</div>		ANALYSIS		Sample Filtration <input type="checkbox"/> Done <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do (Please Specify below)		Total Bottles																																																																																																																																																																																					
Please specify Metals or TAL.		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">ALPHA Lab ID (Lab Use Only)</th> <th rowspan="2">Sample ID</th> <th colspan="2">Collection</th> <th rowspan="2">Sample Matrix</th> <th rowspan="2">Sampler's Initials</th> <th rowspan="2">1. VOCs</th> <th rowspan="2">2. SVOCs</th> <th rowspan="2">3. EPH</th> <th rowspan="2">4. VPH</th> <th rowspan="2">5. RCRA 8 Metals</th> <th rowspan="2">6. Copper</th> <th rowspan="2">Sample Specific Comments</th> </tr> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>08040-01</td> <td>A2-31617</td> <td>3/16/17</td> <td>1050</td> <td>GW</td> <td>AF</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>3. C-Ranges only</td> </tr> <tr> <td>02</td> <td>B101-31617</td> <td>3/16/17</td> <td>1310</td> <td>GW</td> <td>AF</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4. C -Ranges only</td> </tr> <tr> <td>03</td> <td>C2-31617</td> <td>3/16/17</td> <td>1410</td> <td>GW</td> <td>AF</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5. Dissolved (field filtered)</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		ALPHA Lab ID (Lab Use Only)	Sample ID			Collection		Sample Matrix	Sampler's Initials	1. VOCs	2. SVOCs	3. EPH	4. VPH	5. RCRA 8 Metals	6. Copper	Sample Specific Comments	Date	Time	08040-01	A2-31617	3/16/17	1050	GW	AF	X	X	X	X	X	X	3. C-Ranges only	02	B101-31617	3/16/17	1310	GW	AF	X						4. C -Ranges only	03	C2-31617	3/16/17	1410	GW	AF	X						5. Dissolved (field filtered)																																																																																																																																
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Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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		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.																																																																																																																																																																																			
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Method Blank Summary Form 4

Client	: Haley & Aldrich, Inc.	Lab Number	: L1708040
Project Name	: 125-131 SUMNER STREET	Project Number	: 129204-003
Lab Sample ID	: WG986575-5	Lab File ID	: VJ170317B08
Instrument ID	: JACK		
Matrix	: WATER	Analysis Date	: 03/17/17 21:47

Client Sample No.	Lab Sample ID	Analysis Date
WG986575-3LCS	WG986575-3	03/17/17 20:07
WG986575-4LCSD	WG986575-4	03/17/17 20:40
C2_31617	L1708040-03	03/18/17 03:21

Method Blank Summary Form 4

Client	: Haley & Aldrich, Inc.	Lab Number	: L1708040
Project Name	: 125-131 SUMNER STREET	Project Number	: 129204-003
Lab Sample ID	: WG987045-5	Lab File ID	: VJ170321A09
Instrument ID	: JACK		
Matrix	: WATER	Analysis Date	: 03/21/17 06:23

Client Sample No.	Lab Sample ID	Analysis Date
WG987045-3LCS	WG987045-3	03/21/17 04:07
WG987045-4LCSD	WG987045-4	03/21/17 04:38
A2_31617	L1708040-01	03/21/17 10:50
B101_31617	L1708040-02	03/21/17 11:23

Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ170317B02
 Sample No : WG986575-2
 Channel :

Lab Number : L1708040
 Project Number : 129204-003
 Calibration Date : 03/17/17 20:07
 Init. Calib. Date(s) : 02/28/17 02/28/17
 Init. Calib. Times : 07:34 11:28

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	77	0
Dichlorodifluoromethane	0.467	0.548	-	-17.3	20	89	0
Chloromethane	0.428	0.445	-	-4	20	82	.04
Vinyl chloride	0.444	0.541	-	-21.8*	20	89	0
Bromomethane	0.229	0.211	-	7.9	20	77	0
Chloroethane	10	12.161	-	-21.6*	20	83	0
Trichlorofluoromethane	0.703	0.796	-	-13.2	20	83	-.02
Ethyl ether	0.18	0.195	-	-8.3	20	85	-.02
1,1-Dichloroethene	0.4	0.456	-	-14	20	87	-.02
Carbon disulfide	1.142	1.226	-	-7.4	20	83	-.02
Methylene chloride	10	11.019	-	-10.2	20	84	-.02
Acetone	10	9.964	-	0.4	20	84	-.02
trans-1,2-Dichloroethene	0.424	0.466	-	-9.9	20	87	-.02
Methyl tert-butyl ether	0.91	0.889	-	2.3	20	81	0
Diisopropyl ether	1.34	1.474	-	-10	20	84	0
1,1-Dichloroethane	0.843	0.88	-	-4.4	20	81	-.02
Ethyl tert-butyl ether	1.072	1.111	-	-3.6	20	80	0
cis-1,2-Dichloroethene	0.491	0.525	-	-6.9	20	85	-.02
2,2-Dichloropropane	0.717	0.692	-	3.5	20	71	0
Bromochloromethane	0.221	0.242	-	-9.5	20	87	0
Chloroform	0.808	0.841	-	-4.1	20	82	0
Carbon tetrachloride	0.658	0.679	-	-3.2	20	83	0
Tetrahydrofuran	0.109	0.117	-	-7.3	20	91	0
Dibromofluoromethane	0.304	0.295	-	3	20	76	0
1,1,1-Trichloroethane	0.735	0.782	-	-6.4	20	81	-.02
2-Butanone	0.117	0.119	-	-1.7	20	86	0
1,1-Dichloropropene	0.568	0.636	-	-12	20	85	0
Benzene	1.575	1.764	-	-12	20	85	0
tert-Amyl methyl ether	0.833	0.801	-	3.8	20	74	0
1,2-Dichloroethane-d4	0.326	0.296	-	9.2	20	73	-.02
1,2-Dichloroethane	0.535	0.557	-	-4.1	20	82	0
Trichloroethene	0.436	0.463	-	-6.2	20	82	0
Dibromomethane	0.212	0.224	-	-5.7	20	83	-.02
1,2-Dichloropropane	0.395	0.429	-	-8.6	20	82	0
Bromodichloromethane	0.522	0.521	-	0.2	20	77	0
1,4-Dioxane	0.00145	0.00143*	-	1.4	20	84	0
cis-1,3-Dichloropropene	0.603	0.6	-	0.5	20	76	0
Chlorobenzene-d5	1	1	-	0	20	84	0
Toluene-d8	1.338	1.309	-	2.2	20	78	0
Toluene	1.245	1.414	-	-13.6	20	87	0
4-Methyl-2-pentanone	0.134	0.12	-	10.4	20	73	0
Tetrachloroethene	0.646	0.743	-	-15	20	86	0
trans-1,3-Dichloropropene	0.807	0.785	-	2.7	20	74	0
1,1,2-Trichloroethane	0.372	0.397	-	-6.7	20	81	0
Chlorodibromomethane	0.573	0.569	-	0.7	20	78	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ170317B02
 Sample No : WG986575-2
 Channel :

Lab Number : L1708040
 Project Number : 129204-003
 Calibration Date : 03/17/17 20:07
 Init. Calib. Date(s) : 02/28/17 02/28/17
 Init. Calib. Times : 07:34 11:28

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.781	0.828	-	-6	20	83	0
1,2-Dibromoethane	0.421	0.445	-	-5.7	20	80	-.01
2-Hexanone	0.245	0.212	-	13.5	20	73	0
Chlorobenzene	1.301	1.375	-	-5.7	20	83	0
Ethylbenzene	2.08	2.131	-	-2.5	20	85	0
1,1,1,2-Tetrachloroethane	0.614	0.582	-	5.2	20	77	0
p/m Xylene	0.623	0.592	-	5	20	84	0
o Xylene	0.655	0.648	-	1.1	20	97	0
Styrene	1.295	1.147	-	11.4	20	83	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	82	0
Bromoform	0.624	0.6	-	3.8	20	72	0
Isopropylbenzene	5.499	5.843	-	-6.3	20	80	0
4-Bromofluorobenzene	1.073	1.018	-	5.1	20	78	0
Bromobenzene	1.377	1.443	-	-4.8	20	84	0
n-Propylbenzene	5.077	5.509	-	-8.5	20	82	-.01
1,1,2,2-Tetrachloroethane	0.991	1.056	-	-6.6	20	85	0
2-Chlorotoluene	3.328	3.478	-	-4.5	20	83	0
1,3,5-Trimethylbenzene	2.276	2.356	-	-3.5	20	83	0
1,2,3-Trichloropropane	0.753	0.774	-	-2.8	20	81	0
4-Chlorotoluene	2.894	3.057	-	-5.6	20	87	0
tert-Butylbenzene	3.398	3.693	-	-8.7	20	80	0
1,2,4-Trimethylbenzene	2.467	2.666	-	-8.1	20	86	0
sec-Butylbenzene	4.84	5.464	-	-12.9	20	80	0
p-Isopropyltoluene	3.433	3.859	-	-12.4	20	80	0
1,3-Dichlorobenzene	2.1	2.269	-	-8	20	83	0
1,4-Dichlorobenzene	1.989	2.106	-	-5.9	20	84	0
n-Butylbenzene	2.872	3.583	-	-24.8*	20	77	0
1,2-Dichlorobenzene	1.96	2.152	-	-9.8	20	83	0
1,2-Dibromo-3-chloropropan	10	8.776	-	12.2	20	76	-.01
Hexachlorobutadiene	10	9.62	-	3.8	20	68	-.01
1,2,4-Trichlorobenzene	0.686	0.727	-	-6	20	75	0
Naphthalene	1.075	1.14	-	-6	20	79	-.02
1,2,3-Trichlorobenzene	0.557	0.613	-	-10.1	20	75	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ170321A01
 Sample No : WG987045-2
 Channel :

Lab Number : L1708040
 Project Number : 129204-003
 Calibration Date : 03/21/17 04:07
 Init. Calib. Date(s) : 02/28/17 02/28/17
 Init. Calib. Times : 07:17 11:10

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	10	10	-	0	20	81	0
Dichlorodifluoromethane	0.343	0.376	-	-9.6	20	84	0
Chloromethane	0.387	0.427	-	-10.3	20	87	0
Vinyl chloride	0.354	0.41	-	-15.8	20	92	0
Bromomethane	10	10.499	-	-5	20	92	0
Chloroethane	10	11.585	-	-15.9	20	84	0
Trichlorofluoromethane	0.431	0.461	-	-7	20	82	0
Ethyl ether	0.11	0.114	-	-3.6	20	80	0
1,1-Dichloroethene	0.258	0.27	-	-4.7	20	84	0
Carbon disulfide	0.716	0.742	-	-3.6	20	81	0
Freon-113	0.245	0.266	-	-8.6	20	81	0
Methylene chloride	0.272	0.27	-	0.7	20	77	0
Acetone	10	8.326	-	16.7	20	72	0
trans-1,2-Dichloroethene	0.274	0.302	-	-10.2	20	87	0
Methyl tert-butyl ether	0.592	0.563	-	4.9	20	77	0
tert-Butyl alcohol	50	39.432	-	21.1*	20	63	0
Diisopropyl ether	1.053	1.085	-	-3	20	84	0
1,1-Dichloroethane	0.52	0.585	-	-12.5	20	88	0
Ethyl tert-butyl ether	0.803	0.776	-	3.4	20	79	0
cis-1,2-Dichloroethene	0.315	0.339	-	-7.6	20	87	0
2,2-Dichloropropane	0.504	0.462	-	8.3	20	72	0
Bromochloromethane	0.139	0.146	-	-5	20	85	0
Chloroform	0.522	0.56	-	-7.3	20	85	0
Carbon tetrachloride	0.451	0.439	-	2.7	20	79	0
Tetrahydrofuran	0.069	0.072	-	-4.3	20	89	0
Dibromofluoromethane	0.23	0.232	-	-0.9	20	80	0
1,1,1-Trichloroethane	0.52	0.544	-	-4.6	20	83	0
2-Butanone	0.086	0.072*	-	16.3	20	67	0
1,1-Dichloropropene	0.432	0.471	-	-9	20	87	0
Benzene	1.271	1.363	-	-7.2	20	87	0
tert-Amyl methyl ether	0.658	0.605	-	8.1	20	77	0
1,2-Dichloroethane-d4	0.252	0.225	-	10.7	20	67	0
1,2-Dichloroethane	0.361	0.382	-	-5.8	20	85	0
Trichloroethene	0.348	0.361	-	-3.7	20	86	0
Dibromomethane	0.153	0.145	-	5.2	20	77	0
1,2-Dichloropropane	0.318	0.319	-	-0.3	20	82	0
2-Chloroethyl vinyl ether	0.128	0.089	-	30.5*	20	58	0
Bromodichloromethane	0.423	0.362	-	14.4	20	72	0
1,4-Dioxane	0.00199	0.00205*	-	-3	20	91	0
cis-1,3-Dichloropropene	0.533	0.465	-	12.8	20	72	0
Chlorobenzene-d5	1	1	-	0	20	80	0
Toluene-d8	1.129	1.133	-	-0.4	20	79	0
Toluene	0.968	1.045	-	-8	20	86	0
4-Methyl-2-pentanone	10	7.804	-	22*	20	64	0
Tetrachloroethene	0.46	0.496	-	-7.8	20	86	0

* Value outside of QC limits.



Continuing Calibration Form 7

Client : Haley & Aldrich, Inc.
 Project Name : 125-131 SUMNER STREET
 Instrument ID : JACK
 Lab File ID : VJ170321A01
 Sample No : WG987045-2
 Channel :

Lab Number : L1708040
 Project Number : 129204-003
 Calibration Date : 03/21/17 04:07
 Init. Calib. Date(s) : 02/28/17 02/28/17
 Init. Calib. Times : 07:17 11:10

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	0.442	0.379	-	14.3	20	69	0
1,1,2-Trichloroethane	0.199	0.209	-	-5	20	82	0
Chlorodibromomethane	0.342	0.305	-	10.8	20	73	0
1,3-Dichloropropane	0.424	0.42	-	0.9	20	80	0
1,2-Dibromoethane	0.254	0.246	-	3.1	20	78	-.01
2-Hexanone	0.158	0.121	-	23.4*	20	67	0
Chlorobenzene	1.194	1.208	-	-1.2	20	82	0
Ethylbenzene	2.148	2.157	-	-0.4	20	81	0
1,1,1,2-Tetrachloroethane	0.431	0.395	-	8.4	20	77	0
p/m Xylene	0.885	0.887	-	-0.2	20	80	0
o Xylene	0.863	0.828	-	4.1	20	77	0
Styrene	1.466	1.413	-	3.6	20	79	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	77	0
Bromoform	0.35	0.294	-	16	20	67	0
Isopropylbenzene	4.14	4.116	-	0.6	20	77	-.01
4-Bromofluorobenzene	0.831	0.829	-	0.2	20	80	0
Bromobenzene	0.894	0.879	-	1.7	20	76	0
n-Propylbenzene	4.705	4.626	-	1.7	20	76	-.01
1,1,2,2-Tetrachloroethane	0.502	0.485	-	3.4	20	76	0
2-Chlorotoluene	3.056	2.971	-	2.8	20	77	0
1,3,5-Trimethylbenzene	3.429	3.349	-	2.3	20	77	0
1,2,3-Trichloropropane	0.405	0.402	-	0.7	20	80	0
4-Chlorotoluene	2.773	2.606	-	6	20	74	0
tert-Butylbenzene	3.024	2.914	-	3.6	20	74	0
1,2,4-Trimethylbenzene	3.345	3.217	-	3.8	20	74	0
sec-Butylbenzene	4.403	4.248	-	3.5	20	75	0
p-Isopropyltoluene	3.735	3.628	-	2.9	20	73	0
1,3-Dichlorobenzene	1.869	1.832	-	2	20	77	0
1,4-Dichlorobenzene	1.754	1.769	-	-0.9	20	78	0
n-Butylbenzene	10	8.114	-	18.9	20	57	0
1,2-Dichlorobenzene	1.587	1.614	-	-1.7	20	74	0
1,2-Dibromo-3-chloropropan	10	7.529	-	24.7*	20	59	-.01
Hexachlorobutadiene	0.418	0.418	-	0	20	71	-.01
1,2,4-Trichlorobenzene	0.785	0.779	-	0.8	20	74	0
Naphthalene	10	8.886	-	11.1	20	71	-.02
1,2,3-Trichlorobenzene	10	9.149	-	8.5	20	70	0

* Value outside of QC limits.



APPENDIX C

Effluent Limit Calculations

Enter number values in green boxes below

Enter values in the units specified

↓	
0	Q_R = Enter upstream flow in MGD
0.144	Q_D = Enter discharge flow in MGD
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓
0

Enter values in the units specified

↓	
0	C_d = Enter influent hardness in mg/L CaCO_3
0	C_s = Enter receiving water hardness in mg/L CaCO_3

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

↓	
7.7	pH in Standard Units
6.4	Temperature in °C
0.489	Ammonia in mg/L
0	Hardness in mg/L CaCO_3
0.016	Salinity in ppt
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
0	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓	
0	TRC in µg/L
10.1	Ammonia in mg/L
0	Antimony in µg/L
1.77	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
8.5	Copper in µg/L
898	Iron in µg/L
2.69	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L
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 approvedSaltwater (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 maximumif > 10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Enter number values in green boxes below

Enter values in the units specified

↓	
0	Q_R = Enter upstream flow in MGD
0.144	Q_D = Enter discharge flow in MGD
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓
0

Enter values in the units specified

↓	
0	C_d = Enter influent hardness in mg/L CaCO_3
0	C_s = Enter receiving water hardness in mg/L CaCO_3

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

↓	
7.7	pH in Standard Units
6.4	Temperature in °C
0.489	Ammonia in mg/L
0	Hardness in mg/L CaCO_3
0.016	Salinity in ppt
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
0	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓	
0	TRC in µg/L
101	Ammonia in mg/L
0	Antimony in µg/L
1.77	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
8.5	Copper in µg/L
898	Iron in µg/L
2.69	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L
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 approvedSaltwater (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 maximumif > 10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Enter number values in green boxes below

Enter values in the units specified

↓	
0.144	Q_R = Enter upstream flow in MGD
0	Q_D = Enter discharge flow in MGD
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓
0

Enter values in the units specified

↓	
0	C_d = Enter influent hardness in mg/L CaCO_3
0	C_s = Enter receiving water hardness in mg/L CaCO_3

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

↓	
7.7	pH in Standard Units
6.4	Temperature in °C
0.489	Ammonia in mg/L
0	Hardness in mg/L CaCO_3
0.016	Salinity in ppt
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
0	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓	
0	TRC in µg/L
101	Ammonia in mg/L
0	Antimony in µg/L
1.77	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
8.5	Copper in µg/L
898	Iron in µg/L
2.69	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
0	Zinc in µg/L
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 approvedSaltwater (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 maximumif > 10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

Dilution Factor	0.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	Report	mg/L	---			
Chloride	Report	µg/L	---			
Total Residual Chlorine	0.2	mg/L	7.5	µg/L	50	µg/L
Total Suspended Solids	30	mg/L	---			
Antimony	206	µg/L	640	µg/L		
Arsenic	104	µg/L	36	µg/L		
Cadmium	10.2	µg/L	8.9	µg/L		
Chromium III	323	µg/L	100.0	µg/L		
Chromium VI	323	µg/L	50	µg/L		
Copper	242	µg/L	3.7	µg/L		
Iron	5000	µg/L	---	µg/L		
Lead	160	µg/L	8.5	µg/L		
Mercury	0.739	µg/L	1.11	µg/L		
Nickel	1450	µg/L	8.3	µg/L		
Selenium	235.8	µg/L	71	µg/L		
Silver	35.1	µg/L	2.2	µg/L		
Zinc	420	µg/L	86	µg/L		
Cyanide	178	mg/L	1.0	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	100	µg/L	---			
Benzene	5.0	µg/L	---			
1,4 Dioxane	200	µg/L	---			
Acetone	7.97	mg/L	---			
Phenol	1,080	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	4.4		1.6	µg/L		
1,2 Dichlorobenzene	600	µg/L	---			
1,3 Dichlorobenzene	320	µg/L	---			
1,4 Dichlorobenzene	5.0	µg/L	---			
Total dichlorobenzene	---	µg/L	---			
1,1 Dichloroethane	70	µg/L	---			
1,2 Dichloroethane	5.0	µg/L	---			
1,1 Dichloroethylene	3.2	µg/L	---			
Ethylene Dibromide	0.05	µg/L	---			
Methylene Chloride	4.6	µg/L	---			
1,1,1 Trichloroethane	200	µg/L	---			
1,1,2 Trichloroethane	5.0	µg/L	---			
Trichloroethylene	5.0	µg/L	---			
Tetrachloroethylene	5.0	µg/L	3.3	µg/L		
cis-1,2 Dichloroethylene	70	µg/L	---			
Vinyl Chloride	2.0	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	190	µg/L	---	µg/L		
Diethylhexyl phthalate	101	µg/L	2.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---			
Benzo(a)anthracene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.0038	µg/L	---	µg/L
Chrysene	1.0	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	100	µg/L	---			
Naphthalene	20	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	0.000064	µg/L	---		0.5	µg/L
Pentachlorophenol	1.0	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	5.0	mg/L	---			
Ethanol	Report	mg/L	---			
Methyl-tert-Butyl Ether	70	µg/L	20	µg/L		
tert-Butyl Alcohol	120	µg/L	---			
tert-Amyl Methyl Ether	90	µg/L	---			

Dilution Factor	0.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	Report	mg/L	---			
Chloride	Report	µg/L	---			
Total Residual Chlorine	0.2	mg/L	7.5	µg/L	50	µg/L
Total Suspended Solids	30	mg/L	---			
Antimony	206	µg/L	640	µg/L		
Arsenic	104	µg/L	36	µg/L		
Cadmium	10.2	µg/L	8.9	µg/L		
Chromium III	323	µg/L	100.0	µg/L		
Chromium VI	323	µg/L	50	µg/L		
Copper	242	µg/L	3.7	µg/L		
Iron	5000	µg/L	---	µg/L		
Lead	160	µg/L	8.5	µg/L		
Mercury	0.739	µg/L	1.11	µg/L		
Nickel	1450	µg/L	8.3	µg/L		
Selenium	235.8	µg/L	71	µg/L		
Silver	35.1	µg/L	2.2	µg/L		
Zinc	420	µg/L	86	µg/L		
Cyanide	178	mg/L	1.0	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	100	µg/L	---			
Benzene	5.0	µg/L	---			
1,4 Dioxane	200	µg/L	---			
Acetone	7.97	mg/L	---			
Phenol	1,080	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	4.4		1.6	µg/L		
1,2 Dichlorobenzene	600	µg/L	---			
1,3 Dichlorobenzene	320	µg/L	---			
1,4 Dichlorobenzene	5.0	µg/L	---			
Total dichlorobenzene	---	µg/L	---			
1,1 Dichloroethane	70	µg/L	---			
1,2 Dichloroethane	5.0	µg/L	---			
1,1 Dichloroethylene	3.2	µg/L	---			
Ethylene Dibromide	0.05	µg/L	---			
Methylene Chloride	4.6	µg/L	---			
1,1,1 Trichloroethane	200	µg/L	---			
1,1,2 Trichloroethane	5.0	µg/L	---			
Trichloroethylene	5.0	µg/L	---			
Tetrachloroethylene	5.0	µg/L	3.3	µg/L		
cis-1,2 Dichloroethylene	70	µg/L	---			
Vinyl Chloride	2.0	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	190	µg/L	---	µg/L		
Diethylhexyl phthalate	101	µg/L	2.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---			
Benzo(a)anthracene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.0038	µg/L	---	µg/L
Chrysene	1.0	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	100	µg/L	---			
Naphthalene	20	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	0.000064	µg/L	---		0.5	µg/L
Pentachlorophenol	1.0	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	5.0	mg/L	---			
Ethanol	Report	mg/L	---			
Methyl-tert-Butyl Ether	70	µg/L	20	µg/L		
tert-Butyl Alcohol	120	µg/L	---			
tert-Amyl Methyl Ether	90	µg/L	---			

APPENDIX D

Typical Treatment System Products

Model NCO and NLCO Bag or Cartridge Filter Housings

Low cost filter housings for flow rates to 100 gpm*

NCO high-capacity bag filters offer an exceptional value in basic filtration applications. Offered in trade sizes 1, 2, and 12, the NCO is also available with our Platinum 700 cartridge series.

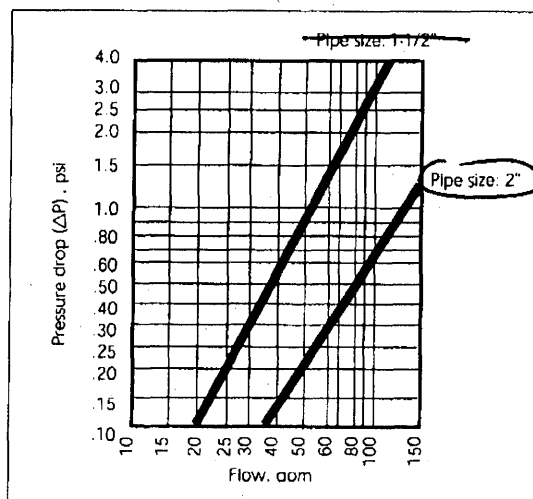
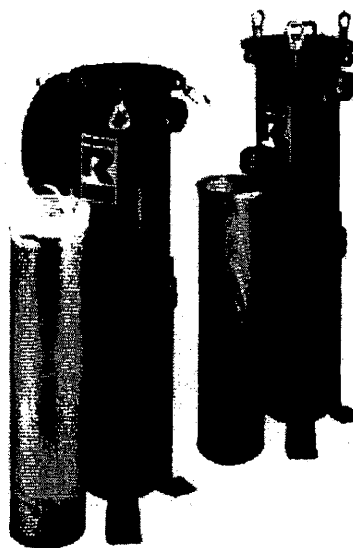
NCO housings provide large dirt-holding capacity combined with a rugged design rated to 150 psi. The housings incorporate an eyenut cover that is easily removed, reducing time spent on bag or cartridge change-out. The NCO bag housing offers versatility for any piping arrangement, utilizing our unistyle design (side and bottom outlet). Two connection sizes are available for both bag and cartridge filters.

The NCO housings are electropolished creating a smooth, easy-to-clean surface. A variety of filter bags or cartridges (rated 0.5 μ absolute to 100 μ nominal) can be utilized in this housing. Keep your filtration process cost effective without sacrificing quality.

Features

- Permanently piped housings are opened without special tools
- Carbon or stainless steel housings
- Covers are O-ring sealed
- O-ring seals: Buna N, EPR and Viton®
- 150 psi rated housing
- Heavy-duty basket, over 50% open area
- Uses standard number 1, 2 or 12 size bags and 500 or 700 series cartridges

- Filter selection surface area is:
2.3 square feet (number 1 size bag),
4.4 square feet (number 2 size bag),
5.6 square feet (number 12 size bag)
68 square feet (500 series cartridge)
100 square feet (700 series cartridge)
- 1-1/2 inch or 2-inch NPT inlet and outlet
- 1/4-inch NPT vent connection
- Adjustable leg assembly



*Based on housing only. Fluid viscosity, filter bag used, and expected dirt loading should be considered when sizing a filter.

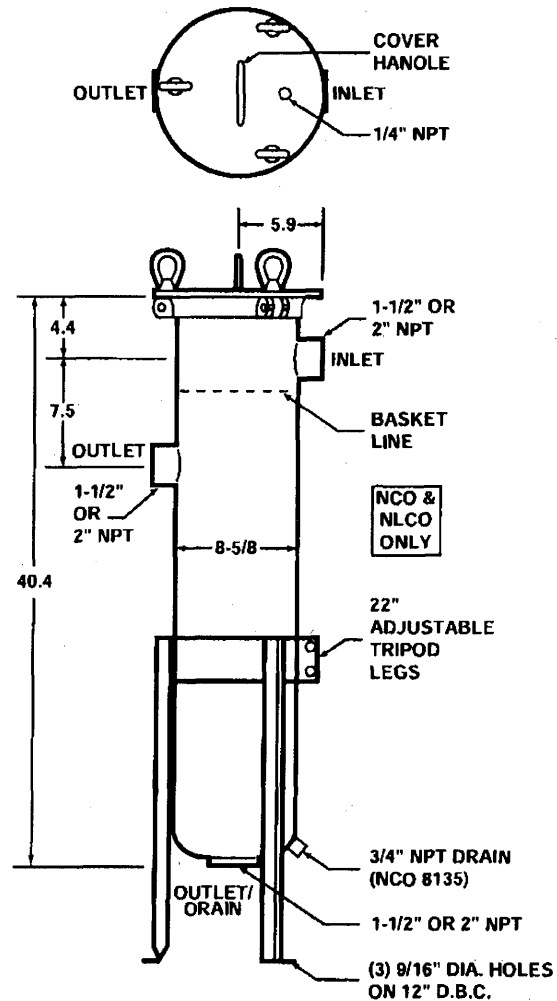
How To Order

Build an ordering code as shown in the example.

NCO8-30-2P-*150-C-B-PB

Example:	Housing	Options
MODEL	NCO8-30-2P	150-C-B-PB
NCO8 (M1, A2 bag)		
NLC08 (712 bag)		
NCO8135 (700 cartridge)		
NCO8135 convertible		
BASKET SIZE		
15-inch (NCO only) = 15		
30-inch (NCO or NLCO) = 30		
NCO8135 = No Symbol		
PIPE SIZE		
1-1/2-inch female NPT = 1-1/2P		
2-inch female NPT = 2P		
OUTLET STYLE		
Side/Bottom Unistyle (NCO or NLCO) = *		
Bottom = Y		
PRESSURE RATING		
150 psi = 150		
HOUSING MATERIAL		
Carbon steel = C		
304 Stainless steel = S		
COVER SEAL		
Buna N = B		
Ethylene propylene = E		
Viton® Fluoroelastomer = V		
BASKET TYPE		
Filter bag basket (NCO or NLCO) = PB		
700 Cartridge (NCO8135) = 700		
Convertible (NCO8135) ⁴ = 700PB		

1. Filter bags are specified separately.
2. Basket material is compatible with housing.
3. Weight (approximately): 70 lbs.
4. Accepts 700 Series cartridge as well as filter bag



Dimensions are reference only and should not be used for hard plumbing. Consult factory for certified drawings.

R FILTER BAG Design Details

Standard Filter Bag Types

RING TOP BAGS are stocked in sizes 1, 2, 3, 4, 8, 9 & 12 with galvanized steel, rings.

MOLDED ROSEDALE TOP BAGS are stocked with polypropylene tops in sizes 1, 2, 3, 4, 8 & 9.

HANDLES are standard on all bags.

ALL STANDARD STOCK BAGS have sewn construction.

FILTER BAG FINISH

Felt filter bags are supplied with a glazed finish to reduce fiber migration. Mesh filter bags are supplied with a plain finish as woven.

Microfiber filter bags have spunbonded covers to prevent fiber migration.

CONSTRUCTION

Standard filter bags are typically manufactured with a metal ring, either galvanized carbon steel or stainless steel, sewn in the top of the filter bag. Woven fabric handles are also sewn.

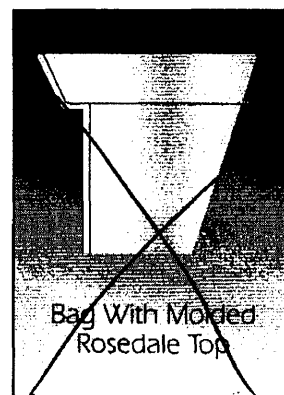
Another design incorporates a molded plastic top. These tops typically are polypropylene or polyester with molded lifting handles. Various types of tops are available to fit specific manufacturers' housings.

All Welded Construction

All seams and the collar are sonically welded, enhancing filtration quality, eliminating leaks and bypass that may have occurred with sewn seams.



Bag With Metal
Ring Top



Bag With Molded
Rosedale Top

Nominal Micron Rating- 50%	High Efficiency Micron Rating- 95%
1	35
5	48
10	55
25	65
50	70
100	110
200	200

Felt Filter Bag Micron Rating

For years filter bag manufacturers have used nominal ratings, i.e., about 50% efficiency for polyester and polypropylene felt filter bags. The table gives the micron ratings at about 95% efficiency.

Filter Bag Pressure Drop

The graphs give the clean pressure drop through a number 2 size bag for water, 1 CPS @ 68°F

To determine the pressure drop caused by the filter bag, follow these steps:

Step 1 Select the type of bag, micron rating and flow rate, determine the pressure drop for water, 1 cps @ 68°F, for a size #2 bag.

Step 2 Correct for bag size from the Bag Size Correction table at the right if the bag size is different than a #2 size.

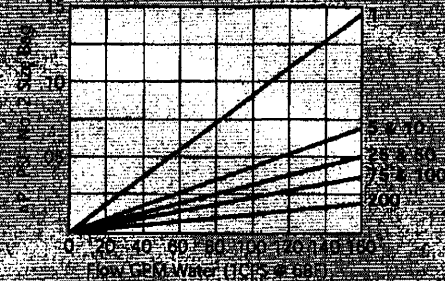
Step 3 If the viscosity of the liquid is greater than 1 cps (water @ 68°F), multiply the result from step 2 by the proper correction factor from the Viscosity Correction table at the right.

The value obtained in Step 3 is the clean pressure drop caused by the filter bag.

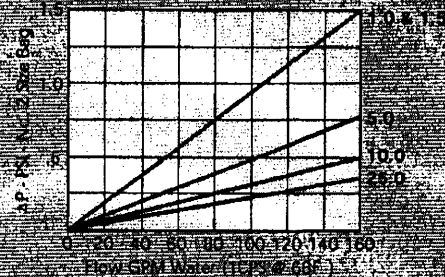
SUMMARY

For new applications, the clean pressure drop of the system, housing and bag should be 2.0 PSI or less. The lower the value is, the more contaminant a bag will hold. For applications with low dirt loading, this value can go to 3.0 PSI or more. Consult the factory for recommendations when the clean pressure drop of the system exceeds 3.0 PSI.

Felt & Mesh Bags



High Efficiency Bags



Bag Size Correction

Bag Size	Dia. x Length	Multiply By
1	7.2 x 16	2.25
2	7.2 x 32	1.0
3	4.3 x 8	9.0
4	4.3 x 14	4.5
8	5.7 x 21	2.25
9	5.7 x 37	1.50

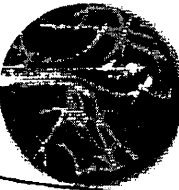
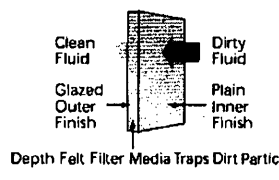


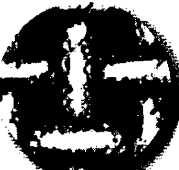
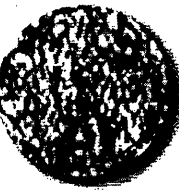
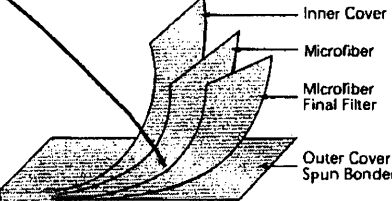
Viscosity Correction

Viscosity CPS	Correction Factor
50	4.5
100	8.3
200	16.6
400	27.7
800	50.0
1000	56.2
1500	77.2
2000	113.6
4000	161.0
6000	250.0
8000	325.0
10,000	430.0

STANDARD FILTER BAG DESIGN DETAILS

Construction	Available Micron Ratings																			
	1	2.5	5	10	20	25	30	40	50	75	100	150	200	250	300	400	600	800	1000	1500
Felt																				
Woven Mesh																				
Nonwoven Mesh																				
High Efficiency Media																				
Oil Resistant																				

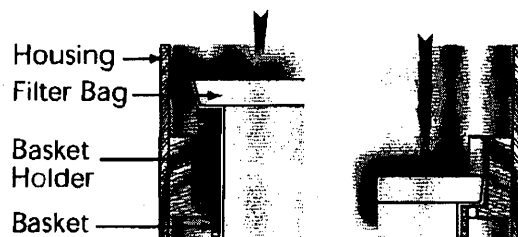
	Diameter (Inches)	Length (Inches)	Area Ft ²	Filter Housing Brands	Filter Housing Brands
1	7.2	16	2.0	Rossdale	Rossdale
2	7.2	32	4.5	Grain	Grain
3	4.3	8	0.5	Strapline	Strapline
4	4.3	14	1.0	Micron Technologies	Micron Technologies
5	6.1	20	2.8	Filtration Systems	Filtration Systems
7	5.7	15	1.5	Parker Oil Slick	Parker Oil Slick
8	5.7	32	3.0	Easton Filter	Easton Filter
9	5.7	32	3.0	Other	Other
12	8.4	34	5.5		

	<p>FELT filter bag materials are made from synthetic fibers in polypropylene or polyester. The proper combination of fiber diameters, weights and thickness results in an economical depth type filter media. Polypropylene and polyester bags are supplied with a glazed finish to reduce fiber migration. These bags have a nominal micron rating. Filter efficiency is about 50%.</p>	 <p>Depth Felt Filter Media Traps Dirt Particles</p>
	<p>MULTIFILAMENT MESH materials are offered in polyester and are woven from threads made of small fibers twisted together. Bags made of this material are low cost and considered disposable. They have lower efficiencies than the monofilament mesh. Filter efficiencies are about 80%.</p>	
	<p>MONOFILAMENT MESH is offered in nylon and is a woven material. Each thread is a single filament. The openings are square. They have excellent strength and are considered to be cleanable. Filter efficiency is 90% or more.</p>	<ul style="list-style-type: none"> Operates on the principle of surface filtration Wide range of micron ratings Reusable or disposable Non-fiber releasing Good efficiencies High contaminant quantities under correct conditions
	<p>MICROFIBER filter bags provide high efficiency and high contaminant holding capacity at low ratings. Bags are available in polypropylene. Filter efficiency is 95% or more.</p> <p>MICROFIBER polypropylene filter bags also can remove oil from water and other liquids. Optimized designs are called "OIL REMOVAL BAGS".</p>	

MOLDED ROSEDALE TOPS - POR STYLE

Filter bags with molded Rosedale tops require no filter bag hold down devices. As the differential pressure in the application increases, the integrity of the seal improves. Polypropylene tops are standard with polyester optional for temperatures over 200°F, or for chemical compatibility.

THE MOLDED ROSEDALE TOP OFFERS THE BEST BAG-TO-HOUSING SEAL IN TODAY'S MARKETPLACE, IN ADDITION TO BEING THE EASIEST TO INSTALL AND REMOVE.



FILTER BAG WITH MOLDED ROSEDALE TOP JUST PRIOR TO INSTALLATION IN BASKET HOLDER

FILTER BAG WITH MOLDED ROSEDALE TOP INSTALLED IN HOUSING

OTHER BAG TYPES AND DESIGNS

500 SERIES 3M TYPE multiple layer filter bags with microfiber filter layers and felt prefilter layers. Up to 5 layers of felt

DOUBLE & TRIPLE LAYER felt bags where the micron rating of the layers are designed to optimize service life.

SPECIAL SIZE & DESIGN bags are available in all materials and most micron ratings.

OIL REMOVAL BAGS require a special design to obtain to result in the largest surface area of fibers in a bag for maximum oil removal capacity. These are standard in micron ratings of 10 and 25.

FILTER BAG HOLD-DOWNS

Adjustable filter bag hold-downs for Size #1 and #2 bags are available for side entry housings manufactured by:

Filter Specialists, Inc. / Micron Technologies / Krystil Klear / Strainrite / Other Side Entry Brands

Available in polypropylene, they provide additional positive filter bag hold-down capabilities for critical applications where necessary. It is suitable for ring top bags and bags with molded plastic tops. It is necessary for many bags with molded tops and ring bags if the bag manufacturer improperly designs and manufactures them.

A FILTER BAG HOLD-DOWN IS NOT REQUIRED WHEN USING FILTER BAGS WITH MOLDED ROSEDALE TOPS.

PE- -P-2-S

R How To Order Build an ordering code as shown in the example

500 SERIES 3M TYPE Micron Ratings: 25, 50, 75, 100, 150, 200, 250, 300, 400, 600, 800, 1000 Polypropylene Microfiber = PPMF Microns = 1.0, 2.5, 5.0, 10.0, 25.0 Polyester Microfiber = PEMF Microns = 1.0, 2.5, 5.0, 10.0, 25.0 Oil Removal = OR Microns = 10.0, 25.0		BAG FINISH G = Felt Glazed or Singed P = Polyester
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Recordall® Cold Water Top Load Bronze Disc Meter

Size 2" (DN 50mm)

Technical Brief

DESCRIPTION

Badger Meter offers the Recordall Disc meter in Cast Bronze and a Low Lead Alloy. The Low Lead Alloy (Trade Designation: M170 LL) version complies with NSF/ANSI Standard 61 and carries the NSF-61 Mark on the housing. All components of the Low Lead Alloy meter, i.e., disc, chamber, housing, seals, etc., comprise the certified system.

APPLICATIONS: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently-sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE: The Badger Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates ($100 \pm 1.5\%$), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: bronze meter housing, measuring chamber, and permanently, sealed register. A corrosion-resistant thermoplastic material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

SEALED REGISTER: The standard register consists of a straight-reading, odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating thermoplastic gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Generator-type remote reading and automatic meter reading systems are available for all Recordall Disc meters. All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES: Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw/or Torx® tamper seal resistant screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE: Badger Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Flanges for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.



Model 170 shown with optional 1" Test Plug

SPECIFICATIONS

Typical Operating Range (100% \pm 1.5%)	2 1/2 - 170 GPM (.57 to 39 m ³ /hr)
Low Flow (Min. 95%)	1 1/2 GPM (.34 m ³ /hr)
Maximum Continuous Operation	100 GPM (23 m ³ /hr)
Pressure Loss at Maximum Continuous Operation	3.3 PSI at 100 GPM (.23 bar at 23 m ³ /hr)
Maximum Operating Temperature	80°F (26°C)
Maximum Operating Pressure	150 PSI (10 bar)
Measuring Element	Nutating disc, positive displacement
Register Type	Straight reading, permanently sealed magnetic drive standard. Remote reading or Automatic Meter Reading units optional.
Registration	100 Gallons, 10 Cubic Feet, 1 m ³
Register Capacity	100,000,000 Gallons, 10,000,000 Cubic Feet, 1,000,000 m ³ . 6 odometer wheels.
Meter Connections	2" AWWA two bolt elliptical flange, drilled, or 2" - 11 1/2 NPT internal pipe threads.
Optional Test Plug	1" NPT test plug (TP) available on elliptical long and short versions.

MATERIALS

Meter Housing	Cast Bronze, Low Lead Alloy
Housing Top Plates	Bronze, Low Lead Alloy
Measuring Chamber	Thermoplastic
Disc	Thermoplastic
Trim	Stainless Steel/Bronze
Strainer	Thermoplastic
Disc Spindle	Stainless Steel
Magnet	Ceramic
Magnet Spindle	Stainless Steel
Register Lid and Box	Thermoplastic or Bronze
Generator Housing	Thermoplastic



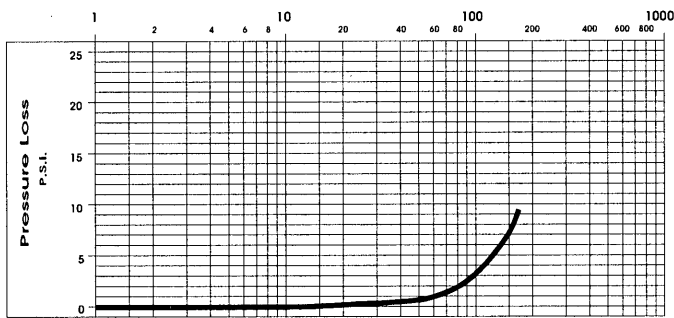
BadgerMeter, Inc.

RD-T-2

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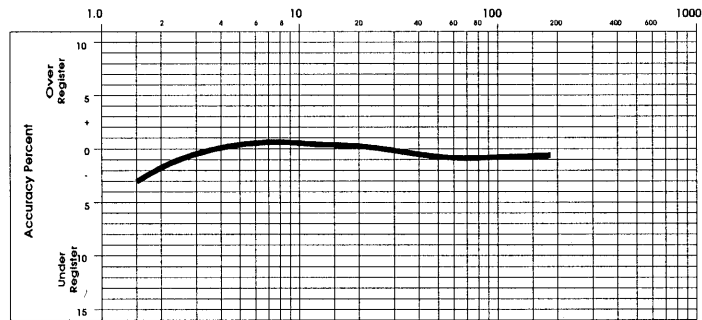
PRESSURE LOSS CHART

Rate of Flow, in Gallons per Minute



ACCURACY CHART

Rate of Flow, in Gallons per Minute



METER SIZE	METER MODEL	A LAYING LENGTH	B HEIGHT REG./RTR	C HEIGHT GEN.	D CENTERLINE BASE	WIDTH	APPROX. SHIPPING WEIGHT
2" (50mm)	170 EL, Hex. 170 EL, TP	15 1/4" (387mm)	8" (203mm)	9 3/8" (238mm)	2 7/8" (73mm)	9 1/2" (241mm)	30 lb. (13.6kg)
2" (50mm)	170 ELL, 170 ELL, TP	17" (432mm)	8" (203mm)	9 3/8" (238mm)	2 7/8" (73mm)	9 1/2" (241mm)	30 lb. (13.6kg)

EL = Elliptical

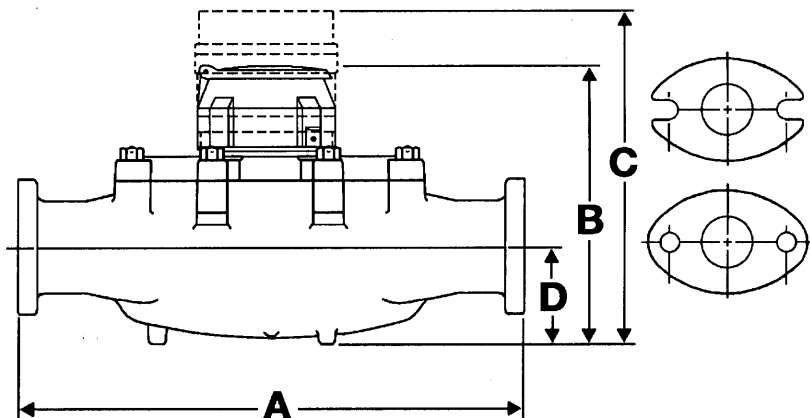
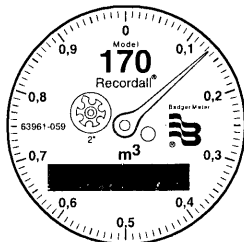
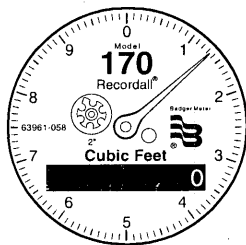
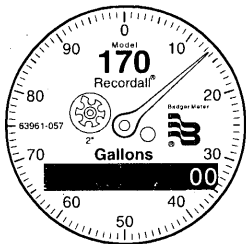
ELL = Elliptical Long

Hex = Hexagon, 2" - 11 1/2 NPT Thread

TP=Test Plug 1"

Sweep Hand Registration

MODEL	GALLON	CU.FT.	CU. METER
M170	100	10	1



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BadgerMeter, Inc.

P.O. Box 245036, Milwaukee, WI 53224-9536

(800) 876-3837 / Fax: (888) 371-5982

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sc200™ UNIVERSAL CONTROLLER

Applications

- Drinking Water
- Wastewater
- Industrial Water
- Power



One Controller for the Broadest Range of Sensors.

Choose from 30 digital and analog sensor families for up to 17 different parameters.

Maximum Versatility

The sc200 controller allows the use of digital and analog sensors, either alone or in combination, to provide compatibility with Hach's broad range of sensors, eliminating the need for dedicated, parameter-specific controllers.

Ease of Use and Confidence in Results

Large, high-resolution, transreflective display provides optimal viewing resolution in any lighting condition. Guided calibration procedures in 19 languages minimize complexity and reduce operator error. Password-protected SD card reader offers a simple solution for data download and transfer. Visual warning system provides critical alerts.

Wide Variety of Communication Options

Utilize two to five analog outputs to transmit primary and secondary values for each sensor, or integrate Hach sensors and analyzers into MODBUS RS232/RS485, Profibus® DP, and HART networks.



Password protected SD card reader offers a simple solution for data download and transfer, and sc200 and digital sensor configuration file duplication and backup.

Controller Comparison



Features	Previous Models		sc200™ Controller	Benefits
	sc100™ Controller	GLI53 Controller		
Display	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	160 x 240 pixels 48 x 68 mm (1.89 x 2.67 in.) Transreflective	<ul style="list-style-type: none"> Improved user interface—50% bigger Easier to read in daylight and sunlight
Data Management	irDA Port/PDA Service Cable	N/A	SD Card Service Cable	<ul style="list-style-type: none"> Simplifies data transfer Standardized accessories/ max compatibility
Sensor Inputs	2 Max Direct Digital Analog via External Gateway	2 Max Analog Depending on Parameter	2 Max Digital and/or Analog with Sensor Card	<ul style="list-style-type: none"> Simplifies analog sensor connections Works with analog and digital sensors
Analog Inputs	N/A	N/A	1 Analog Input Signal Analog 4-20mA Card	<ul style="list-style-type: none"> Enables non-sc analyzer monitoring Accepts mA signals from other analyzers for local display Consolidates analog mA signals to a digital output
4-20 mA Outputs	2 Standard	2 Standard	2 Standard Optional 3 Additional	<ul style="list-style-type: none"> Total of five (5) 4-20 mA outputs allows multiple mA outputs per sensor input
Digital Communication	MODBUS RS232/RS485 Profibus DP V1.0	HART	MODBUS RS232/RS485 Profibus DP V1.0 HART 7.2	<ul style="list-style-type: none"> Unprecedented combination of sensor breadth and digital communication options

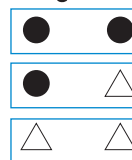
Choose from Hach's Broad Range of Digital and Analog Sensors

Parameter	Sensor	Digital or Analog
Ammonia	AMTAX™ sc, NH4D sc, AISE sc, AN-ISE sc	●
Chlorine	CLF10 sc, CLT10 sc, 9184 sc	●
Chlorine Dioxide	9185 sc	●
Conductivity	GLI 3400 Contacting, GLI 3700 Inductive	△
Dissolved Oxygen	LDO® Model 2, 5740 sc	●
Dissolved Oxygen	5500	△
Flow	U53, F53 Sensors	△
Nitrate	NITRATAX™ sc, NO3D sc, NISE sc, AN-ISE sc	●
Oil in Water	FP360 sc	●
Organics	UVAS sc	●
Ozone	9187 sc	●
pH/ORP	pHD	●
pH/ORP	pHD, pH Combination, LCP	△
Phosphate	PHOSPHAX™ sc	●
Sludge Level	SONATAX™ sc	●
Suspended Solids	SOLITAX™ sc, TSS sc	●
Turbidity	1720E, FT660 sc, SS7 sc, ULTRATURB sc, SOLITAX sc, TSS sc	●
Ultra Pure Conductivity	8310, 8311, 8312, 8315, 8316, 8317 Contacting	△
Ultra Pure pH/ORP	8362	△

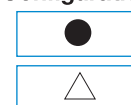
● = Digital △ = Analog

Connect up to two of any of the sensors listed above, in any combination, to meet your application needs. The diagrams below demonstrate the potential configurations. Operation of analog sensors requires the controller to be equipped with the appropriate sensor module. Contact Hach Technical Support for help with selecting the appropriate module.

2 Channel Configurations



1 Channel Configurations



Specifications*

Dimensions (H x W x D)	5.7 in x 5.7 in x 7.1 in (144 mm x 144 mm x 181 mm)
Display	Graphic dot matrix LCD with LED backlighting, transreflective
Display Size	1.9 x 2.7 in. (48 mm x 68 mm)
Display Resolution	240 x 160 pixels
Weight	3.75 lbs. (1.70 kg)
Power Requirements (Voltage)	100 - 240 V AC, 24 V DC
Power Requirements (Hz)	50/60 Hz
Operating Temperature Range	-20 to 60 °C , 0 to 95% RH non-condensing
Analog Outputs	Two (Five with optional expansion module) to isolated current outputs, max 550 Ω , Accuracy: $\pm 0.1\%$ of FS (20mA) at 25 °C, $\pm 0.5\%$ of FS over -20 °C to 60 °C range
Analog Output Functional Mode	Operational Mode: measurement or calculated value Linear, Logarithmic, Bi-linear, PID
Security Levels	2 password-protected levels
Mounting Configurations	Wall, pole, and panel mounting
Enclosure Rating	NEMA 4X/IP66
Conduit Openings	1/2 in NPT Conduit
Relay: Operational Mode	Primary or secondary measurement, calculated value (dual channel only) or timer

Relay Functions

Scheduler (Timer), Alarm, Feeder Control, Event Control, Pulse Width Modulation, Frequency Control, and Warning

Relays

Four electromechanical SPDT (Form C) contacts, 1200 W, 5 A

Communication

MODBUS RS232/RS485, PROFIBUS DPV1, or HART 7.2 optional

Memory Backup

Flash memory

Electrical

Certifications

EMC

CE compliant for conducted and radiated emissions:

- CISPR 11 (Class A limits)

- EMC Immunity EN 61326-1 (Industrial limits)

Safety

cETLus safety mark for:

- General Locations per ANSI/UL 61010-1 & CAN/CSA C22.2. No. 61010-1

- Hazardous Location Class I, Division 2, Groups A,B,C & D (Zone 2, Group IIC) per FM 3600 / FM 3611 & CSA C22.2 No. 213 M1987 with approved options and appropriately rated Class I, Division 2 or Zone 2 sensors

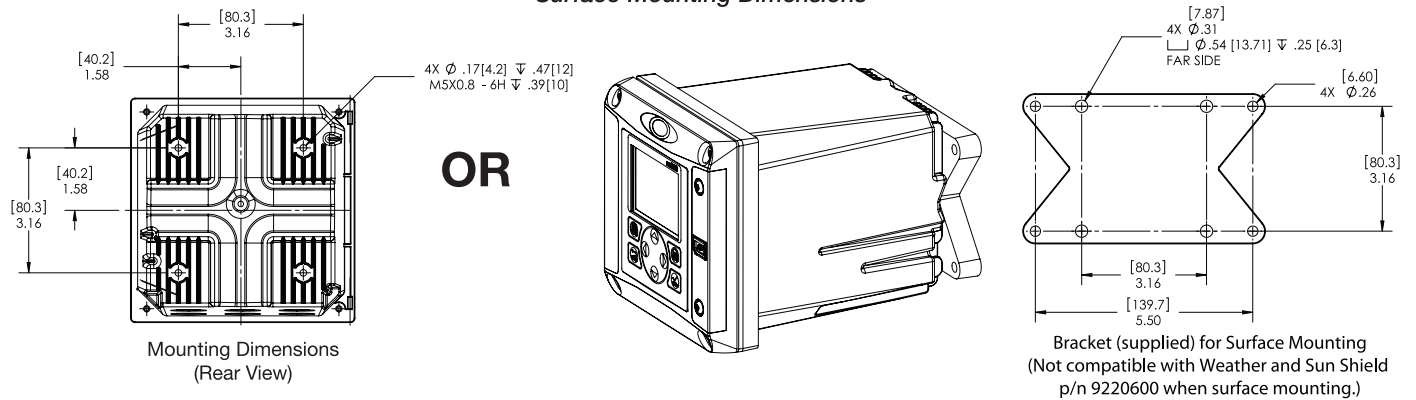
cULus safety mark

- General Locations per UL 61010-1 & CAN/CSA C22.2. No. 61010-1

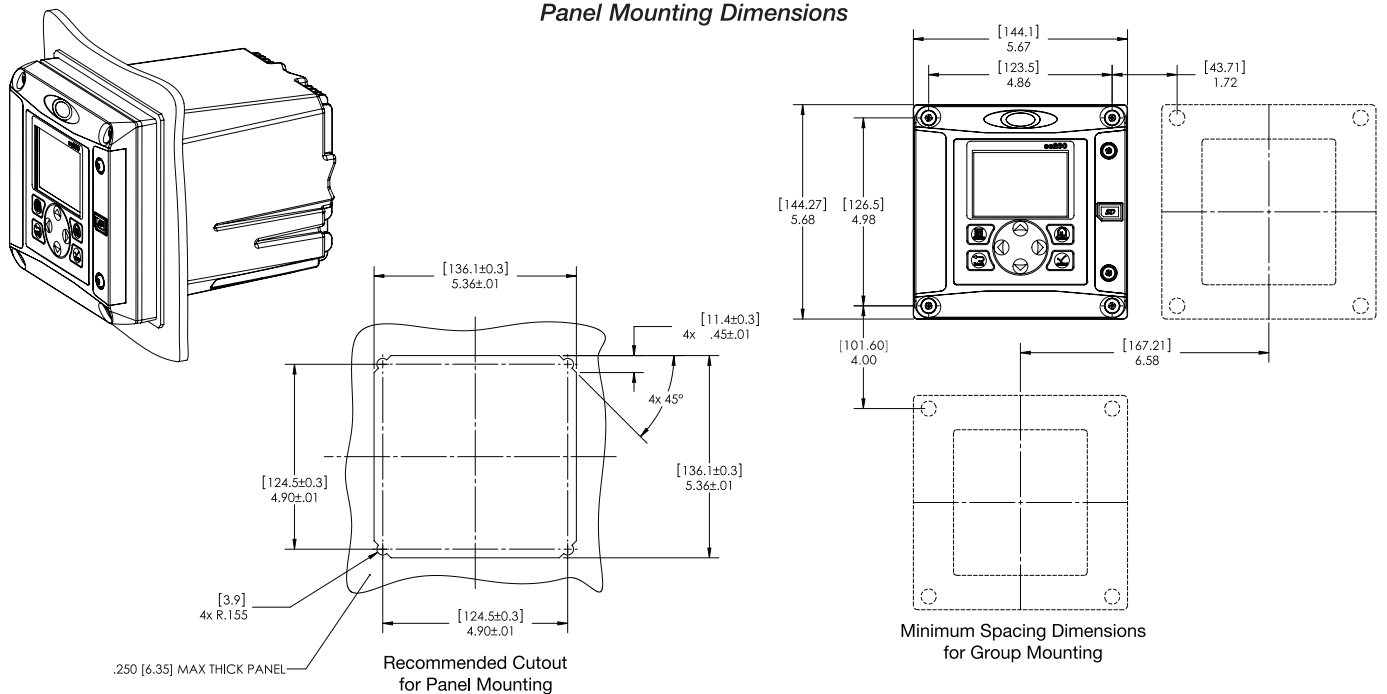
**Subject to change without notice.*

Dimensions

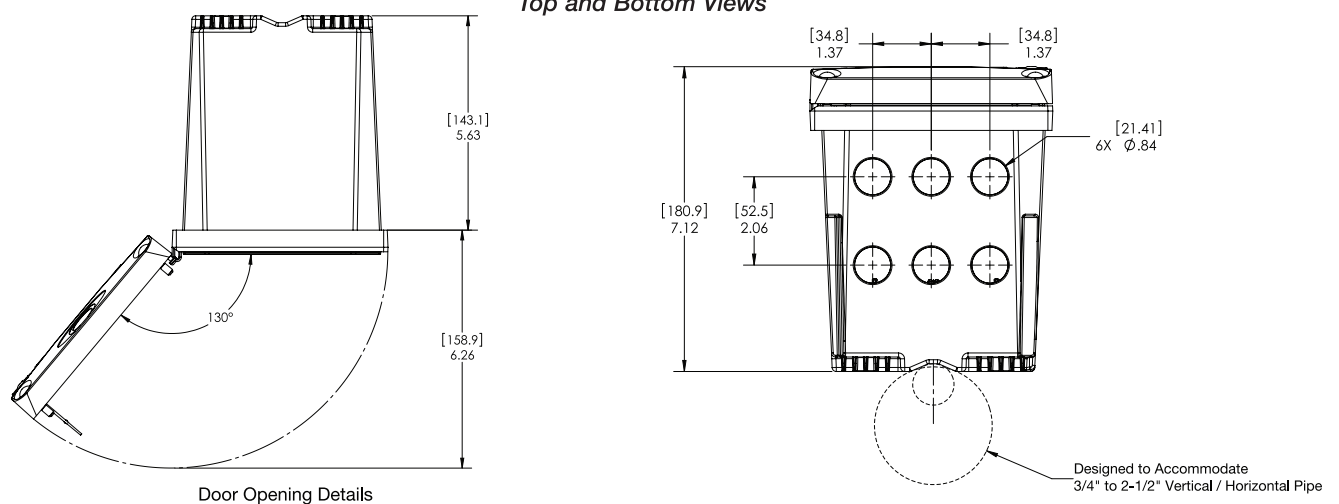
Surface Mounting Dimensions



Panel Mounting Dimensions



Top and Bottom Views



Ordering Information

sc200 for Hach Digital and Analog Sensors

LXV404.99.00552	sc200 controller, 2 channels, digital
LXV404.99.00502	sc200 controller, 1 channel, digital
LXV404.99.00102	sc200 controller, 1 channel, pH/DO
LXV404.99.00202	sc200 controller, 1 channel, Conductivity
LXV404.99.01552	sc200 controller, 2 channels, digital, Modbus RS232/RS485
LXV404.99.00112	sc200 controller, 2 channel, pH/DO

Note: Other Sensor combinations are available. Please contact Hach Technical Support or your Hach representative.

Note: Communication options (MODBUS, Profibus DPV1, and HART) are available. Please contact Hach Technical Support or your Hach representative.

sc200 for Ultrapure Sensors

9500.99.00602	sc200 controller, 1 channel, ultrapure conductivity
9500.99.00702	sc200 controller, 1 channel, ultrapure pH
9500.99.00662	sc200 controller, 2 channel, ultrapure conductivity
9500.99.00772	sc200 controller, 2 channel, ultrapure pH

Sensor and Communication Modules

9012900	Analog pH/ORP and DO module for GLI Sensors
9013000	Analog Conductivity module for GLI Sensors
9012700	Flow module
9012800	4-20 mA Input Module
9525700	Analog pH/ORP Module for Polymetron Sensors
9525800	Analog Conductivity Module for Polymetron Sensors
9013200	Modbus 232/485 Module
9173900	Profibus DP Module
9328100	HART Module
9334600	4-20 mA Output Module (Provides 3 additional mA Outputs)

Accessories

9220600	sc200 Weather and Sun Shield with UV Protection Screen
8809200	sc200 UV Protection Screen
9218200	SD card reader (USB) for connection to PC
9218100	4 GB SD card



HACH COMPANY World Headquarters: Loveland, Colorado USA

United States:	800-227-4224 tel	970-669-2932 fax	orders@hach.com
Outside United States:	970-669-3050 tel	970-461-3939 fax	int@hach.com
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In the interest of improving and updating its equipment,

Hach Company reserves the right to alter specifications to equipment at any time.



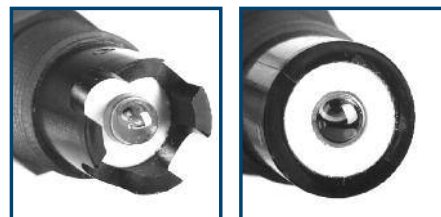
3/4-inch Combination pH and ORP Sensor Kits

pH/ORP



Use the Digital Gateway to make any Hach analog combination pH or ORP sensor compatible with the Hach sc1000 Controller.

Digital combination pH and ORP sensors are available in convertible, insertion, and sanitary mounting styles. Choose from rugged dome electrodes or "easy-to-clean" flat glass electrodes.



DW

WW

PW

IW

Features and Benefits

Low Price—High Performance

These combination sensors are designed for specialty applications for immersion or in-line mounting. The reference cell features a double-junction design for extended service life, and a built-in solution ground. The body is molded from chemically-resistant Ryton® or PVDF, and the reference junction is coaxial porous PTFE. All sensors are rated 0 to 105°C up to 100 psig, and have integral 4.5 m (15 ft.) cables with tinned leads. The PC-series (for pH) and RC-series (for ORP) combination sensors are ideal for measuring mild and aggressive media.

Special Electrode Configurations

Sensors with rugged dome electrodes, "easy-to-clean" flat glass electrodes, and even HF (hydrofluoric acid) resistant glass electrodes are available for a wide variety of process solutions.

Temperature Compensation Element Option

The PC-series combination pH sensors are available with or without a Pt 1000 ohm RTD temperature element. The RC-series combination ORP sensors are supplied without a temperature element.

Versatile Mounting Styles

Sensors are available in three mounting styles—convertible, insertion, and sanitary. Please turn to page 3 for more information.

Full-Featured "Plug and Play" Hach sc Digital Controllers

There are no complicated wiring or set up procedures with any Hach sc controller. Just plug in any combination of Hach digital sensors and it's ready to use—it's "plug and play."

One or multiple sensors—The sc controller family allows you to receive data from up to eight Hach digital sensors in any combination using a single controller.

Communications—Multiple alarm/control schemes are available using the relays and PID control outputs. Available communications include analog 4-20 mA, digital MODBUS® (RS485 and RS232) or Profibus DP protocols. (Other digital protocols are available. Contact your Hach representative for details.)

Data logger—A built-in data logger collects measurement data, calibration, verification points, and alarm history.

DW = drinking water WW = wastewater municipal PW = pure water / power
IW = industrial water E = environmental C = collections FB = food and beverage



Be Right™

Specifications*

Most pH applications fall in the 2.5-12.5 pH range. General purpose pH glass electrodes perform well in this range. Some industrial applications require accurate measurements and control at pH values below 2 or above 12. Consult Hach Technical Support for details on these applications.

Combination pH Sensors

Measuring Range

0 to 14 pH

Accuracy

Less than 0.1 pH under reference conditions

Temperature Range

0 to 105°C (32 to 221°F)

Flow Rate

0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range

0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance

100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable

Integral coaxial cable (plus two conductors for temperature compensator option); 4.5 m (15 ft.) long

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Sanitary style: 316 stainless steel sleeved PVDF body

Common materials for all sensor styles include PTFE double junction, glass process electrode, and Viton® O-rings

Warranty

90 days

Combination ORP Sensors

Measuring Range

-2000 to +2000 millivolts

Accuracy

Limited to calibration solution accuracy (± 20 mV)

Temperature Range

0 to 105°C (32 to 221°F)

Flow Rate

0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range

0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance

100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable

Integral coaxial cable; 4.5 m (15 ft.) long; terminated with stripped and tinned wires

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Common materials for all sensor styles include PTFE double junction, glass with platinum process electrode, and Viton® O-rings

Warranty

90 days

*Specifications subject to change without notice.

Ryton® is a registered trademark of Phillips 66 Co.; Viton® is a registered trademark of E.I. DuPont de Nemours + Co.; Kynar® is a registered trademark of Pennwalt Corp.

Engineering Specifications

- The pH sensor shall be available in convertible, insertion or sanitary styles. The ORP sensor shall be available in only convertible or insertion styles.
- The convertible style sensor shall have a Ryton® body. The insertion style sensor shall have a PVDF body. The sanitary style sensor shall have a 316 stainless steel sleeved PVDF body. Common materials for all sensor styles shall include a PTFE double junction, and Viton® O-rings. The pH sensor shall have a glass pH electrode. The ORP sensor shall have a platinum ORP electrode.
- The convertible style pH sensor shall be available with or without a built-in Pt 1000 ohm RTD temperature element. Insertion and sanitary style pH sensors shall have a built-in Pt 1000 ohm RTD temperature element. Convertible and insertion style ORP sensors shall not have a built-in temperature element.
- The sensor shall communicate via MODBUS® RS-485 to a Hach sc Digital Controller.
- The sensor shall be Hach Company Model PC sc or PC-series for pH measurement or Model PC sc or RC-series for ORP measurement.

Dimensions

Convertible Style Sensor

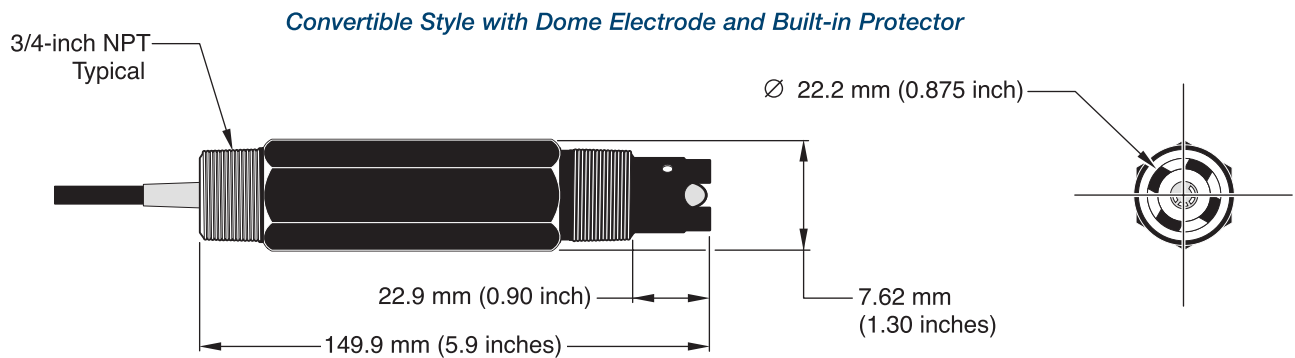
The convertible style sensor has a Ryton® body that features 3/4-inch NPT threads on both ends. The sensor can be directly mounted into a standard 3/4-inch pipe tee for flow-through mounting or fastened onto the end of a pipe for immersion mounting. The convertible style sensor enables inventory consolidation, thereby reducing associated costs. Mounting tees and immersion mounting hardware are offered in a variety of materials to suit application requirements.

Insertion Style Sensor

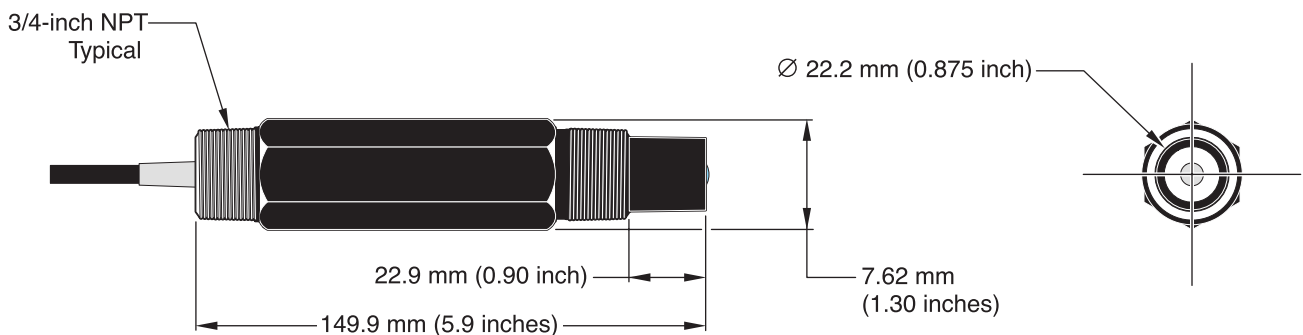
Insertion style sensors feature a longer, non-threaded PVDF body with two Viton® O-rings, providing a seal when used with the optional Hach insertion mount hardware assembly. This ball valve hardware enables sensor insertion and retraction from a pipe or vessel without having to stop the process flow.

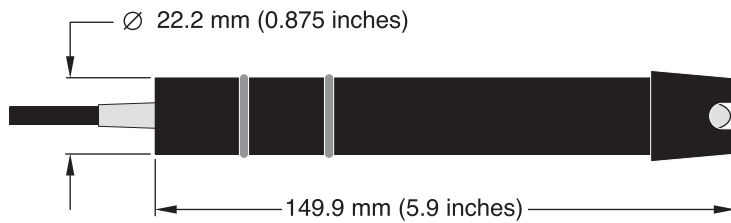
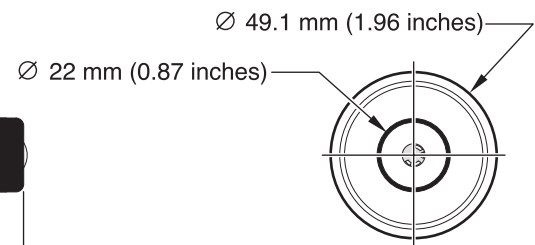
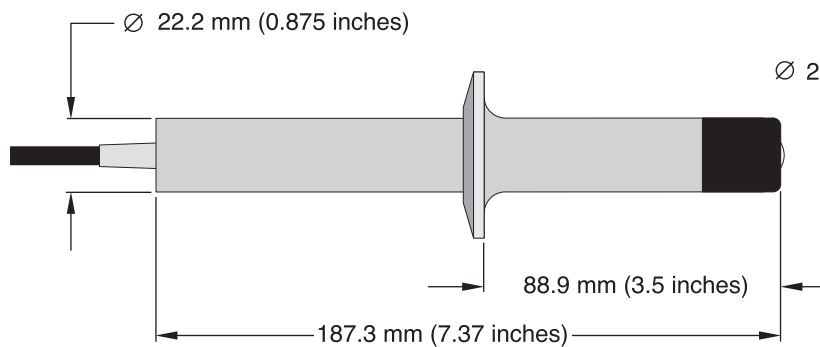
Sanitary Style Sensor

The sanitary style sensor, offered for pH measurement, has a 316 stainless steel-sleeved PVDF body with a 2-inch flange. The sensor mates to a standard 2-inch Tri-Clover fitting. The optional Hach sanitary mounting hardware includes a standard 2-inch sanitary tee, sanitary clamp, and Viton® sanitary gasket.



Convertible Style with Flat Electrode



Dimensions *continued**Insertion Style with Dome Electrode and Built-In Protector**Sanitary Style*

Ordering Information

Digital PC sc and RC sc 3/4-inch Combination pH/ORP Sensors

All PC sc and RC sc 3/4-inch combination sensors come complete with an integral 4.5 m (15 ft.) sensor cable, Digital Gateway, and 1 m (3.3 ft.) digital extension cable.

<i>Product Number</i>	<i>Measurement</i>	<i>Sensor Style</i>	<i>Body Material</i>	<i>Electrode Type</i>	<i>Temp. Comp.</i>
DPC1R1N	pH	Convertible	Ryton	General purpose glass	None
DPC1R1A	pH	Convertible	Ryton	General purpose glass	Pt 1000 ohm RTD
DPC1R2N	pH	Convertible	Ryton	Flat glass, general purpose	None
DPC1R2A	pH	Convertible	Ryton	Flat glass, general purpose	Pt 1000 ohm RTD
DPC1R3A	pH	Convertible	Ryton	HF-resistant glass (see Note)	Pt 1000 ohm RTD
DPC2K1A	pH	Insertion	PVDF	General purpose glass	Pt 1000 ohm RTD
DPC2K2A	pH	Insertion	PVDF	Flat Glass	Pt 1000 ohm RTD
DPC3K2A	pH	Sanitary	316 SS/PVDF	General purpose glass	Pt 1000 ohm RTD
DRC1R5N	ORP	Convertible	Ryton	Platinum	None
DRC2K5N	ORP	Insertion	PVDF	Platinum	None

NOTE

The HF (hydrofluoric acid) resistant glass electrode reduces the HF dissolution of the complete glass surface to extend the lifetime of the electrode in acid fluoride solutions. The electrode will last longer than conventional glass pH electrodes. How much longer depends on the HF concentration and temperature of the solution.

Replacement Digital Gateway

6120600 Use the Digital Gateway to connect analog PC and RC sensors to a Hach sc Digital Controller.

Ordering Information *continued*

Analog PC and RC 3/4-inch Combination pH/ORP Sensors

All PC and RC 3/4-inch combination sensors come with an integral 4.5 m (15 ft.) standard length sensor cable.

<i>Product Number</i>	<i>Measurement</i>	<i>Sensor Style</i>	<i>Body Material</i>	<i>Electrode Type</i>	<i>Temp. Comp.</i>
PC1R1N	pH	Convertible	Ryton	General purpose glass	None
PC1R1A	pH	Convertible	Ryton	General purpose glass	Pt 1000 ohm RTD
PC1R2N	pH	Convertible	Ryton	Flat glass, general purpose	None
PC1R2A	pH	Convertible	Ryton	Flat glass, general purpose	Pt 1000 ohm RTD
PC1R3A	pH	Convertible	Ryton	HF-resistant glass	Pt 1000 ohm RTD
PC2K1A	pH	Insertion	PVDF	General purpose glass	Pt 1000 ohm RTD
PC2K2A	pH	Insertion	PVDF	Flat Glass	Pt 1000 ohm RTD
PC3K2A	pH	Sanitary	316 SS/PVDF	General purpose glass	Pt 1000 ohm RTD
RC1R5N	ORP	Convertible	Ryton	Platinum	None
RC2K5N	ORP	Insertion	PVDF	Platinum	None

Accessories for Digital and Analog 3/4-inch combination pH/ORP Sensors

Cables

Digital cables are used only with digital sensors or gateways when connecting to a Hach sc Digital Controller.

6122400	Digital Extension Cable, 1 m (3.3 ft)
5796000	Digital Extension Cable, 7.7 m (25 ft)
5796100	Digital Extension Cable, 15 m (50 ft)
5796200	Digital Extension Cable, 31 m (100 ft)

Analog cables are used only with analog sensors, junction box, and controller.

1W1100	Analog Interconnect Cable (order per foot)
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Digital Termination Box

Used with digital extension cables when the desired cable length between the digital sensor/digital gateway and the Hach sc Digital Controller is between 100 m (328 ft) and 1000 m (3280 ft).

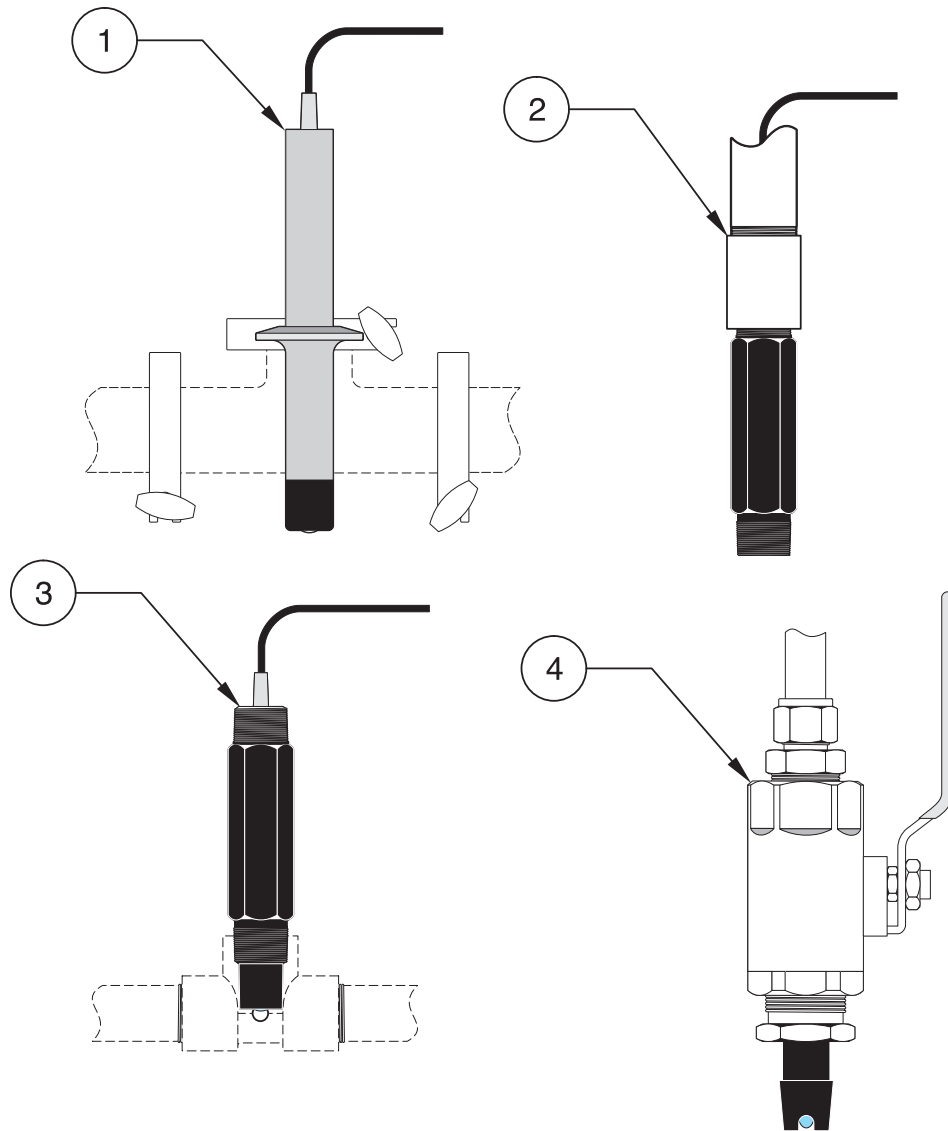
5867000	Digital Termination Box
----------------	-------------------------

Analog Junction Box

Used with analog interconnect cable when the desired cable length between analog sensor and analog controller is greater than the standard length of sensor cable. Each junction box includes terminal strip and gasket.

60A2053	Junction Box, Surface-mount, aluminum (includes mounting hardware)
60A9944	Junction Box, Pipe-mount, PVC, for 1/2-inch diameter pipe (includes mounting hardware)
60G2052	Junction Box, Pipe-mount, PVC, for 1-inch diameter pipe (includes mounting hardware)
76A4010-001	Junction Box, NEMA 4X (no mounting hardware included)

Ordering Information *continued*



1. Sanitary Mounting

2. Immersion Mounting

3. Flow-through Mounting

4. Insertion Mounting

Mounting Hardware for PC sc and RC sc Combination Sensors

Sanitary Mount Hardware

- 9H1310** 2-inch Sanitary Tee
- 9H1132** 2-inch Sanitary Clamp
- 9H1384** 2-inch Sanitary Viton Gasket

Immersion Mount Hardware

Each immersion hardware includes a 1/2-inch diameter x 4 foot long pipe, 1/2 x 3/4-inch NPT coupling, and plastic pipe-mount junction box with terminal strip.

- MH432G** CPVC Pipe

Flow-through Mount Hardware

Each tee is a standard 3/4-inch tee with 3/4-inch NPT threads on all three openings.

- MH313N3NZ** 316 SS Tee
- MH333N3NZ** CPVC Tee
- MH373N3NZ** PVC Tee

Insertion Mount Hardware

The insertion hardware includes a 1-1/2 inch ball valve, 1-1/2 inch NPT close nipple for process connection, sensor connection tube, stainless steel extension pipe, and stainless steel compression fitting with washer and lock nut.

- MH116M3MZ** 316 SS Hardware

To complete your pH and ORP measurement system, choose from these Hach controllers...

Model sc200 Controller

(see Lit. #2665)

The sc200 controller platform can be configured to operate either 2 Digital Sensor Inputs, or 1 or 2 Analog Sensor Inputs, or a combination of Digital and Analog Sensor Inputs. Customers may choose their communication options from a variety of offerings ranging from MODBUS RTU to Profibus DPV1.



sc200 for Hach Digital Sensors

- LXV404.99.00552** sc200 controller, 2 channel, digital
- LXV404.99.00502** sc200 controller, 1 channel, digital
- LXV404.99.00542** sc200 controller, 2 channel, digital & mA input
- LXV404.99.00512** sc200 controller, 2 channel, digital & pH/DO
- LXV404.99.00522** sc200 controller, 2 channel, digital & Conductivity
- LXV404.99.00532** sc200 controller, 2 channel, digital & Flow

sc200 for Hach Analog Sensors

- LXV404.99.00102** sc200 controller, 1 channel, pH/DO
- LXV404.99.00112** sc200 controller, 2 channel, pH/DO
- LXV404.99.00202** sc200 controller, 1 channel, Conductivity
- LXV404.99.00222** sc200 controller, 2 channel, Conductivity
- LXV404.99.00212** sc200 controller, 2 channel, pH/DO & Conductivity
- LXV404.99.00302** sc200 controller, 1 channel, Flow
- LXV404.99.00332** sc200 controller, 2 channel, Flow
- LXV404.99.00312** sc200 controller, 2 channel, Flow & pH/DO
- LXV404.99.00322** sc200 controller, 2 channel, Flow & Conductivity

Note: Other sensor combinations are available. Please contact Hach Technical Support or your Hach representative.

Note: Communication options (MODBUS and Profibus DPV1) are available.

Model sc1000 Controller

(see Lit. #2403)

Each sc1000 Probe Module provides power to the system and can accept up to 8 digital sensors/expansion boards. Probe Modules can be networked together to accommodate up to 32 digital sensors/expansion boards attached to the same network.



- LXV402.99.00002** sc1000 Display Module
- LXV400.99.1R572** sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, 110-230V
- LXV400.99.1B572** sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, RS-485 (MODBUS), 110-230V
- LXV400.99.1F572** sc1000 Probe Module, 4 sensors, 4 mA Out, 4 mA In, 4 Relays, PROFIBUS DP, 110-230V
- LXV400.99.1R582** sc1000 Probe Module, 6 sensors, 4 mA Out, 4 mA In, 4 Relays, 110-230V

LIT2470 Rev 2

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In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.



At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

In the United States, contact:

HACH COMPANY World Headquarters
P.O. Box 389
Loveland, Colorado 80539-0389
U.S.A.
Telephone: 800-227-4224
Fax: 970-669-2932
E-mail: orders@hach.com
www.hach.com

U.S. exporters and customers in Canada, Latin America, sub-Saharan Africa, Asia, and Australia/New Zealand, contact:

HACH COMPANY World Headquarters
P.O. Box 389
Loveland, Colorado 80539-0389
U.S.A.
Telephone: 970-669-3050
Fax: 970-461-3939
E-mail: intl@hach.com
www.hach.com

In Europe, the Middle East, and Mediterranean Africa, contact:

HACH LANGE GmbH
Willstätterstraße 11
D-40549 Düsseldorf
GERMANY
Tel: +49 (0) 211 5288-0
Fax: +49 (0) 211 5288-143
E-mail: info@hach-lange.de
www.hach-lange.com



Be Right™

95-Gallon OverPack Salvage Drum #A95OVER - 32" dia x 41.5", 1 each/package



Stock a SpillTech® OverPack with sorbents for emergency spill response, or use it as a salvage drum to ship damaged containers or hazardous waste.

- DOT-Approved for Salvage: All SpillTech® OverPacks are DOT-approved and X-rated for use as salvage drums. Helps companies conform to federal regulations when shipping damaged or leaking containers of hazardous materials, or absorbents contaminated with hazardous substances.
- Perfect for Spill Kits: Stores sorbent products (not included) for easy access as needed for spill control. Saves time when quick response is necessary.
- Sturdy Construction: 100% polyethylene OverPack resists chemicals, rust and corrosion for years of use. Integrated handles make them easy to lift, move or carry with standard material handling equipment. Twist-on, double-wall lid with closed-cell gasket provides sealed, secure closure to prevent leaks and protect contents from moisture, dirt and damage. Durable to withstand rough handling.
- Customized for You: We can customize a Spill Kit to your exact specifications, including the container, its contents and accessories, with no upcharge! Contact your local Distributor for details.

A95OVER Specifications

Dimensions:	ext. dia. 32" x 41.5" H
Shipping	31.75" W x 41.5" L x 31.75" H
Dimensions:	
Sold as:	1 per package
Color:	Yellow
Composition:	Polyethylene
Weight:	48 lbs.
# per Pallet:	3
Incinerable:	No
UN RATING:	1H2/X295/S
Ship Class:	250

Metric Equivalent Specifications

Dimensions:	ext. dia. 81.3cm x 105.4cm H
Shipping	80.6cm W x 105.4cm L x 80.6cm H
Dimensions:	
Weight:	21.8 kg

A95OVER Technical Information

Warnings & Restrictions:

There are no known warnings and restrictions for this product.

Regulations and Compliance:

49 CFR 173.3(c)(1) - If a container of hazardous waste is damaged or leaking, it can be placed in a compatible salvage drum that meets UN criteria for shipping

49 CFR 173.12(b)(2)(iv) - When labpacking, "Inner packagings...must be surrounded by a chemically compatible absorbent material in sufficient quantity to absorb the total liquid contents."

49 CFR 173.12(b) - A container used for labpacking must be "a UN 1A2 or UN 1B2 metal drum, a UN 1D plywood drum, a UN 1G fiber drum or a UN 1H2 plastic drum tested and marked at least for the Packing Group III performance level for liquids or solids."

Technical Documents:

(Available at spilltech.com)

Product Data Sheet (PDS)

Chemical Compatibility (CCG)



Online:
spilltech.com

Phone:
1-800-228-3877 (N.Am.)
1-770-475-3877 (Other)

Fax:
1-800-872-3764 (N.Am.)
1-770-410-1812 (Other)

Email:
sales@spilltech.com

PULSAFEEDER®

The Pulsatron Series A Plus offers manual function controls over stroke length and stroke rate as standard with the option to select external pace for automatic control.

Ten distinct models are available, having pressure capabilities to 250 PSIG (17 BAR) @ 12 GPD (1.9 lph), and flow capacities to 58 GPD (9.1 lph) @ 100 PSIG (7.0 BAR), with a standard turndown ratio of 100:1, and optional ratio of 1000:1. Metering performance is reproducible to within $\pm 3\%$ of maximum capacity.

Features

- Manual Control by on-line adjustable stroke rate and stroke length.
- Highly Reliable timing circuit.
- Circuit Protection against voltage and current upsets.
- Solenoid Protection by thermal overload with auto-reset.
- Water Resistant, for outdoor and indoor applications.
- Internally Dampened To Reduce Noise.
- Guided Ball Check Valve Systems, to reduce back flow and enhance outstanding priming characteristics.
- Few Moving Parts and Wall Mountable.
- Safe & Easy Priming with durable leak-free bleed valve assembly (standard).
- Optional Control: External pace with auto/manual selection.

Controls



Manual Stroke Rate

Manual Stroke Length

External Pacing - Optional

External Pace With Stop - Optional (125 SPM only)

Controls Options

Feature	Standard Configuration	Optional Configuration ¹
External Pacing	---	Auto / Manual Selection ²
External Pace w/ Stop (125 SPM only)	---	Auto / Manual Selection ²
Manual Stroke Rate	10:1 Ratio	100:1 Ratio
Manual Stroke Length	10:1 Ratio	10:1 Ratio
Total Turndown Ratio	100:1 Ratio	1000:1 Ratio

Note 1: On S2, S3 & S4 sizes only.

Note 2: Not available on 1000:1 turndown pumps.

1. Tested and Certified by WQA against NSF/ANSI 61 & 372.



1. PVDF and Degassing Head Pumps
See www.wqa.org for certification parameters.

Operating Benefits

- Reliable metering performance.
- Rated "hot" for continuous duty.
- High viscosity capability.
- Leak-free, sealless, liquid end.



Aftermarket

- KOPkits
- Gauges
- Dampeners
- Pressure Relief Valves
- Tanks
- Pre-Engineered Systems
- Process Controllers (MicroVision)



PULSAtron® Series A Plus
Electronic Metering Pumps

PULSAtron® Series A Plus

Specifications and Model Selection

MODEL			LBC2	LB02	LBC3	LB03	LB04	LB64	LBC4	LBS2	LBS3	LBS4
Capacity nominal (max.)		GPH	0.25	0.25	0.42	0.50	1.00	1.25	2.00	0.50	1.38	2.42
		GPD	6	6	10	12	24	30	48	12	33	58
		LPH	0.9	0.9	1.6	1.9	3.8	4.7	7.6	1.9	5.2	9.14
Pressure ³ (max.)	GFPP, PVDF, 316SS or PVC (W code) w/TFE Seats)	PSIG (Bar)	250 (17)	150 (10)	250 (17)	150 (10)	100 (7)	100 (7)	50 (3.3)	250 (17)	150 (10)	100 (7)
	PVC (V code) Viton or CSPE Seats / Degas Liquid End		150 (10)									
Connections:		Tubing	1/4" ID X 3/8" OD						3/8" ID X 1/2" OD	1/4" ID X 3/8" OD		
		Piping	1/4" FNPT									
Strokes/Minute		SPM	125							250		

Note 3: Pumps with rated pressure above 150 PSI will be de-rated to 150 PSI Max. when selecting certain valve options, see Price Book for details.

Engineering Data

Pump Head Materials Available: GFPP, PVC, PVDF, 316 SS, PTFE-faced CSPE-backed

Diaphragm:

Check Valves Materials Available:

Seats/O-Rings: PTFE, CSPE, Viton

Balls: Ceramic, PTFE, 316 SS, Alloy C

Fittings Materials Available: GFPP, PVC, PVDF

Bleed Valve: Same as fitting and check valve selected, except 316SS

Injection Valve & Foot Valve Assy: Same as fitting and check valve selected

Tubing: Clear PVC, White PE

Important: Material Code - GFPP=Glass-filled Polypropylene, PVC=Polyvinyl Chloride, PE=Polyethylene, PVDF=Polyvinylidene Fluoride, CSPE=Generic formulation of Hypalon, a registered trademark of E.I. DuPont Company. Viton is a registered trademark of E.I. DuPont Company. PVC wetted end recommended for sodium hypochlorite.

Dimensions

Series A PLUS Dimensions (inches)						
Model No.	A	B	C	D	E	Shipping Weight
LB02 / S2	5.0	9.6	9.5	6.5	8.2	10
LBC2	5.0	9.9	9.5	6.5	8.5	10
LBC3	5.0	9.9	9.5	6.5	8.5	10
LB03 / S3	5.0	9.9	9.5	6.5	8.5	10
LB04 / S4	5.0	9.9	9.5	6.5	8.5	10
LB64	5.0	9.9	9.5	6.5	8.5	10
LBC4	5.0	9.9	9.5	6.5	8.5	10

NOTE: Inches X 2.54 = cm

Engineering Data

Reproducibility: +/- 3% at maximum capacity

Viscosity Max CPS: 1000 CPS

Stroke Frequency Max SPM: 125 / 250 by Model

Stroke Frequency Turn-Down Ratio: 10:1 / 100:1 by Model

Stroke Length Turn-Down Ratio: 10:1

Power Input: 115 VAC/50-60 HZ/1 ph, 230 VAC/50-60 HZ/1 ph

Average Current Draw:

@ 115 VAC; Amps: 0.6 Amps

@ 230 VAC; Amps: 0.3 Amps

Peak Input Power: 130 Watts

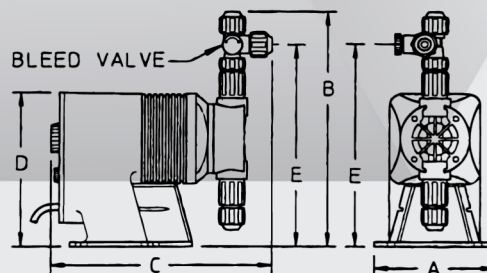
Average Input Power @ Max SPM: 50 Watts

Custom Engineered Designs – Pre-Engineered Systems



Pre-Engineered Systems

Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for all electronic metering applications. From stand alone simplex pH control applications to full-featured, redundant sodium hypochlorite disinfection metering, these rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability. The UV-stabilized, high-grade HDPE frame offers maximum chemical compatibility and structural rigidity. Each system is factory assembled and hydrostatically tested prior to shipment.



SAFETY DATA SHEET

Creation Date 12-Nov-2010

Revision Date 24-May-2017

Revision Number 5

1. Identification

Product Name Sulfuric Acid (Certified ACS Plus)

Cat No. : A300-212; A300-225LB; A300-500; A300-612GAL; A300-700LB;
A300C212; A300C212EA; A300P500; A300S212; A300S212EA;
A300S500; A300SI212

Synonyms Hydrogen sulfate; Vitriol brown oil; Oil of vitriol

Recommended Use Laboratory chemicals.

Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage
May cause respiratory irritation



Precautionary Statements**Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Use only outdoors or in a well-ventilated area

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

WARNING! This product contains a chemical known in the State of California to cause cancer.

Unknown Acute Toxicity

3. Composition / information on ingredients

Component	CAS-No	Weight %
Sulfuric acid	7664-93-9	90 - 98
Water	7732-18-5	2 - 10

4. First-aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Call a physician immediately.
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.
Ingestion	Do not induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.
Most important symptoms/effects	Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media CO₂, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media DO NOT USE WATER

Flash Point Not applicable
Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Sulfur oxides Hydrogen

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health
3

Flammability
0

Instability
2

Physical hazards
W

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe vapors or spray mist. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water. Corrosives area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Sulfuric acid	TWA: 0.2 mg/m ³	(Vacated) TWA: 1 mg/m ³ TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures	Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<u>Personal Protective Equipment</u>	
Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Long sleeved clothing.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear, Colorless to brown
Odor	Odorless
Odor Threshold	No information available
pH	0.3 (1N)
Melting Point/Range	10 °C / 50 °F
Boiling Point/Range	290 - 338 °C / 554 - 640.4 °F
Flash Point	Not applicable
Evaporation Rate	Slower than ether
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 0.001 mmHg @ 20 °C
Vapor Density	3.38 (Air = 1.0)
Specific Gravity	1.84
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	340°C
Viscosity	No information available
Molecular Formula	H ₂ SO ₄
Molecular Weight	98.08

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Reacts violently with water. Hygroscopic.
Conditions to Avoid	Incompatible products. Excess heat. Exposure to moist air or water.
Incompatible Materials	Water, Organic materials, Strong acids, Strong bases, Metals, Alcohols, Cyanides, Sulfides
Hazardous Decomposition Products	Sulfur oxides, Hydrogen
Hazardous Polymerization	Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid	2140 mg/kg (Rat)	Not listed	LC50 = 510 mg/m ³ (Rat) 2 h
Water	-	Not listed	Not listed

Toxicologically Synergistic No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes severe burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. Exposure to strong inorganic mists containing sulfuric acid may cause cancer by inhalation.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Sulfuric acid	7664-93-9	Group 1	Known	A2	X	A2
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

This product contains the following substance(s) which are hazardous for the environment. .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sulfuric acid	-	LC50: > 500 mg/L, 96h static (Brachydanio rerio)	-	EC50: 29 mg/L/24h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1830
 Proper Shipping Name Sulfuric acid
 Hazard Class 8
 Packing Group II

TDG

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

IATA

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

IMDG/IMO

UN-No UN1830
 Proper Shipping Name SULFURIC ACID
 Hazard Class 8
 Packing Group II

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Sulfuric acid	X	X	-	231-639-5	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Sulfuric acid	7664-93-9	90 - 98	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sulfuric acid	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sulfuric acid	1000 lb	1000 lb

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Sulfuric acid	7664-93-9	Carcinogen	-	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Sulfuric acid	X	X	X	X	X
Water	-	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 12-Nov-2010
Revision Date 24-May-2017
Print Date 24-May-2017
Revision Summary SDS sections updated. 2.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

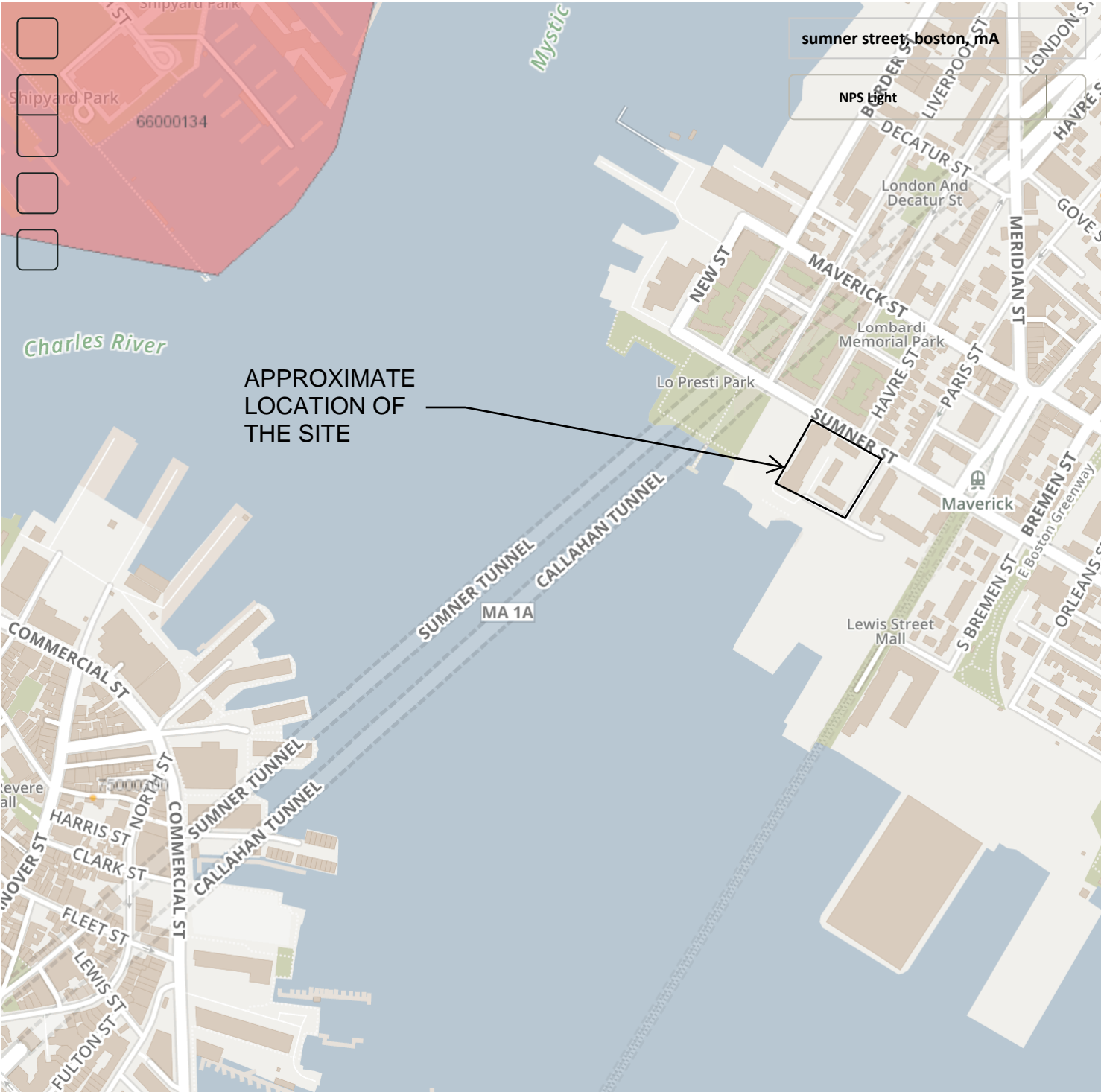
APPENDIX E

National Register of Historic Places Documentation

National Register of Histori...

National Park Service
U.S. Department of the Interior

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



Search Criteria

Attribute	Exclude	Value to Search For
NHL Nomination		Yes

Total records: 2696

Ref#	Prefix	Property Name	Restricted Address	Acreage of Property	Category of Property	City	County	NHL Designated Date	State
01001048		Gibson House	FALSE		BUILDING	Boston	Suffolk	8/7/2001	MASSACHUSETTS
03000645		Union Oyster House	FALSE	0.9	BUILDING	Boston	Suffolk	5/27/2003	MASSACHUSETTS
05000459		Ayer, Frederick, Mansion	FALSE		BUILDING	Boston	Suffolk	4/5/2005	MASSACHUSETTS
12001012		Central Congregational Church	FALSE		BUILDING	Boston	Suffolk	10/16/2012	MASSACHUSETTS
66000127		Arnold Arboretum	FALSE	265	SITE	Boston	Suffolk	1/12/1965	MASSACHUSETTS
66000130		Beacon Hill Historic District	FALSE	105	DISTRICT	Boston	Suffolk	12/19/1962	MASSACHUSETTS
66000132		Boston Athenaeum	FALSE	0.9	BUILDING	Boston	Suffolk	12/21/1965	MASSACHUSETTS
66000133		Boston Light	FALSE	3.5	STRUCTURE	Boston	Suffolk	1/29/1964	MASSACHUSETTS
66000134		Boston Naval Shipyard	FALSE	129.5	DISTRICT	Boston	Suffolk	11/13/1966	MASSACHUSETTS
66000138		Bunker Hill Monument	FALSE	3.8	STRUCTURE	Boston	Suffolk	1/20/1961	MASSACHUSETTS
66000141		Brook Farm	FALSE	180	SITE	Boston	Suffolk	7/23/1965	MASSACHUSETTS
66000366		Ether Dome, Massachusetts General Hospital	FALSE	0.9	BUILDING	Boston	Suffolk	1/12/1965	MASSACHUSETTS
66000368		Faneuil Hall	FALSE	0.9	BUILDING	Boston	Suffolk	10/9/1960	MASSACHUSETTS
66000653		Garrison, William Lloyd, House	FALSE	0.7	BUILDING	Boston	Suffolk	6/23/1965	MASSACHUSETTS
66000764		Harding, Chester, House	FALSE	0.9	BUILDING	Boston	Suffolk	12/21/1965	MASSACHUSETTS
66000765		Headquarters House	FALSE	0.9	BUILDING	Boston	Suffolk	1/1/1999	MASSACHUSETTS
66000768		Long Wharf and Customhouse Block	FALSE	1.5	STRUCTURE	Boston	Suffolk	11/13/1966	MASSACHUSETTS
66000770		Massachusetts Historical Society Building	FALSE	0.3	BUILDING	Boston	Suffolk	12/21/1965	MASSACHUSETTS
66000771		Massachusetts Statehouse	FALSE	5.8	BUILDING	Boston	Suffolk	12/19/1960	MASSACHUSETTS
66000776		Old North Church	FALSE	0.9	BUILDING	Boston	Suffolk	1/20/1961	MASSACHUSETTS
66000778		Old South Meetinghouse	FALSE	0.2	BUILDING	Boston	Suffolk	10/9/1960	MASSACHUSETTS
66000779		Old State House	FALSE	0.9	BUILDING	Boston	Suffolk	10/9/1960	MASSACHUSETTS
66000782		Parkman, Francis, House	FALSE	0.9	BUILDING	Boston	Suffolk	12/29/1962	MASSACHUSETTS
66000784		Quincy Market	FALSE	4.5	BUILDING	Boston	Suffolk	11/13/1966	MASSACHUSETTS
66000785		Revere, Paul, House	FALSE	0.9	BUILDING	Boston	Suffolk	1/20/1961	MASSACHUSETTS
66000788		Tremont Street Subway	FALSE	6	STRUCTURE	Boston	Suffolk	1/29/1964	MASSACHUSETTS
66000789		U.S.S. CONSTITUTION	FALSE	0.9	STRUCTURE	Boston	Suffolk	12/19/1960	MASSACHUSETTS
68000042		Pierce-Hichborn House	FALSE	0.9	BUILDING	Boston	Suffolk	11/24/1968	MASSACHUSETTS
70000539		Otis, (First) Harrison Gray, House	FALSE	1	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000540		Fort Warren	FALSE	4	DISTRICT	Boston	Suffolk	8/29/1970	MASSACHUSETTS
70000682		Massachusetts General Hospital	FALSE	4	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000687		Old City Hall	FALSE	0.5	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000690		Old South Church in Boston	FALSE	0.3	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000691		Old West Church	FALSE	1	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000730		St. Paul's Church	FALSE	1.3	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000731		Sears, David, House	FALSE	1	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
70000733		Trinity Church	FALSE	1	BUILDING	Boston	Suffolk	12/30/1970	MASSACHUSETTS
71000087		African Meetinghouse	FALSE	0.5	BUILDING	Boston	Suffolk	5/30/1974	MASSACHUSETTS
73000317		Boston Public Library	FALSE	5	BUILDING	Boston	Suffolk	2/24/1986	MASSACHUSETTS
73001953		Sumner, Charles, House	FALSE	0.9	BUILDING	Boston	Suffolk	11/7/1973	MASSACHUSETTS
74002044		Howe, Samuel Gridley and Julia Ward, House	FALSE	0.9	BUILDING	Boston	Suffolk	5/30/1974	MASSACHUSETTS
74002045		King's Chapel	FALSE	0.1	BUILDING	Boston	Suffolk	10/9/1960	MASSACHUSETTS
76001979		Nell, William C., House	FALSE	0.9	BUILDING	Boston	Suffolk	5/11/1976	MASSACHUSETTS
77001541		Appleton, Nathan, Residence	FALSE	0.9	BUILDING	Boston	Suffolk	12/22/1977	MASSACHUSETTS
78000473		Fenway Studios	FALSE	0.9	BUILDING	Boston	Suffolk	8/5/1998	MASSACHUSETTS
80000672		New England Conservatory of Music	FALSE	1	BUILDING	Boston	Suffolk	4/19/1994	MASSACHUSETTS
83004099		LUNA (tugboat)	FALSE	0.9	STRUCTURE	Boston	Suffolk	4/11/1989	MASSACHUSETTS
85000317		Dimock Community Health Center Complex	FALSE	10	BUILDING	Boston	Suffolk	7/17/1991	MASSACHUSETTS
86000084		USS CASSIN YOUNG (destroyer)	FALSE	0.9	STRUCTURE	Boston	Suffolk	1/14/1986	MASSACHUSETTS
87000757		Harvard Stadium	FALSE	11	STRUCTURE	Boston	Suffolk	2/27/1987	MASSACHUSETTS
87000760		Boston Common	FALSE	50	DISTRICT	Boston	Suffolk	2/27/1987	MASSACHUSETTS
87000761		Boston Public Garden	FALSE	24	DISTRICT	Boston	Suffolk	2/27/1987	MASSACHUSETTS
97001278		ROSEWAY (schooner)	FALSE	0.9	SITE	Boston	Suffolk	9/25/1997	MASSACHUSETTS
99000633		Symphony Hall	FALSE	0.9	BUILDING	Boston	Suffolk	1/20/1999	MASSACHUSETTS

Search Criteria

Attribute	Value to Search For
Status	Listed

Total records:

Ref#	Property Name	Status	Status Date	Restricted Address	Acreage of		City	County	State
					Property	Category of Property			
00000160	Fulton-Commercial Streets Historic District (Boundar	Listed	3/3/2000	FALSE		DISTRICT	Boston	Suffolk	MASSACHUSETTS
00000415	Harvard Avenue Historic District	Listed	4/28/2000	FALSE	23	DISTRICT	Boston	Suffolk	MASSACHUSETTS
00000871	Dearborn School	Listed	8/2/2000	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
01000088	Brighton Center Historic District	Listed	2/20/2001	FALSE	15	DISTRICT	Boston	Suffolk	MASSACHUSETTS
01000304	Dorchester--Milton Lower Mills Industrial District (Bc	Listed	4/6/2001	FALSE	5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
01000872	Peabody, The	Listed	8/8/2001	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
01001048	Gibson House	Listed	8/7/2001	FALSE		BUILDING	Boston	Suffolk	MASSACHUSETTS
01001557	Boston Consumptives Hospital	Listed	2/7/2002	FALSE	52	DISTRICT	Boston	Suffolk	MASSACHUSETTS
02000081	Frances and Isabella Apartments	Listed	2/22/2002	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
02000154	Greenwood Memorial United Methodist Church	Listed	3/8/2002	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
02000548	Bennington Street Burying Ground	Listed	5/22/2002	FALSE	3.6	SITE	Boston	Suffolk	MASSACHUSETTS
02001039	Paine Furniture Building	Listed	9/12/2002	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
02001190	Harrison Square Historic District	Listed	10/22/2002	FALSE	28	DISTRICT	Boston	Suffolk	MASSACHUSETTS
03000385	Savin Hill Historic District	Listed	5/9/2003	FALSE	100	DISTRICT	Boston	Suffolk	MASSACHUSETTS
03000645	Union Oyster House	Listed	5/27/2003	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
03000781	Publicity Building	Listed	8/20/2003	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000023	Benedict Fenwick School	Listed	2/11/2004	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000085	Haskell, Edward H., Home for Nurses	Listed	2/26/2004	FALSE	1.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000119	YWCA Boston	Listed	3/3/2004	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000189	Nix's Mate Daybeacon	Listed	3/18/2004	FALSE	0.9	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
04000426	Nazing Court Apartments	Listed	5/12/2004	FALSE	2	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000534	Hibernian Hall	Listed	6/2/2004	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
04000959	Fort Point Channel Historic District	Listed	9/10/2004	FALSE	55	DISTRICT	Boston	Suffolk	MASSACHUSETTS
04001219	Forest Hills Cemetery	Listed	11/17/2004	FALSE	250	SITE	Boston	Suffolk	MASSACHUSETTS
04001430	Truman Parkway--Metropolitan Park System of Grea	Listed	1/5/2005	FALSE	8	DISTRICT	Boston	Suffolk	MASSACHUSETTS
04001432	VFW Parkway, Metropolitan Park System of Greater	Listed	1/5/2005	FALSE	20	DISTRICT	Boston	Suffolk	MASSACHUSETTS
04001572	Morton Street, Metropolitan Park System of Greater	Listed	1/24/2005	FALSE	13	DISTRICT	Boston	Suffolk	MASSACHUSETTS
04001573	Neponset Valley Parkway, Metorpolitan Park System	Listed	1/24/2005	FALSE	13	DISTRICT	Boston	Suffolk	MASSACHUSETTS
05000459	Ayer, Frederick, Mansion	Listed	4/5/2005	FALSE		BUILDING	Boston	Suffolk	MASSACHUSETTS
05000559	Collins Building	Listed	6/8/2005	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
05000879	Home for Aged Couples	Listed	8/11/2005	FALSE	2.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
05000936	South Boston Boat Clubs Historic District	Listed	9/1/2005	FALSE	3.5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
05001509	Stony Brook Reservation Parkways, Metropolitan Pai	Listed	1/3/2006	FALSE	21.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS
06000127	East Boston High School, Old	Listed	3/15/2006	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
07000510	Goldsmith Block	Listed	6/5/2007	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
07000861	Boston Transit Commission Building	Listed	8/31/2007	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
08000089	Dorchester Park	Listed	2/20/2008	FALSE	28.5	SITE	Boston	Suffolk	MASSACHUSETTS
08000693	Old Harbor Reservation Parkways, Metropolitan Park	Listed	7/24/2008	FALSE	55.8	DISTRICT	Boston	Suffolk	MASSACHUSETTS
08000793	Joshua Bates School	Listed	8/22/2008	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
08000795	Ohabei Shalom Cemetery	Listed	8/19/2008	FALSE	2.4	SITE	Boston	Suffolk	MASSACHUSETTS
08001284	Compton Building	Listed	12/31/2008	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
09000612	Evergreen Cemetery	Listed	8/14/2009	FALSE	19.7	SITE	Boston	Suffolk	MASSACHUSETTS
09000717	Fairview Cemetery	Listed	9/16/2009	FALSE	57.7	SITE	Boston	Suffolk	MASSACHUSETTS
09000767	Mount Hope Cemetery	Listed	9/24/2009	FALSE	125.2	SITE	Boston	Suffolk	MASSACHUSETTS
10000039	EDNA G. shipwreck (Eastern Rig dragger)	Listed	11/22/2010	TRUE	22.2	SITE	Boston	Suffolk	MASSACHUSETTS
10000300	Highland Spring Brewery Bottling and Storage Buildir	Listed	5/28/2010	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
10000391	Second Church in Boston	Listed	6/24/2010	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
10000506	Charles River Reservation (Speedway)--Upper Basin I	Listed	7/19/2010	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
10001066	Egleston Substation	Listed	12/27/2010	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
11000160	United State Post Office, Courthouse, and Federal Bu	Listed	4/8/2011	FALSE	2.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
12000069	Fenway Park	Listed	3/7/2012	FALSE	8.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
12000099	Terminal Storage Warehouse District	Listed	3/12/2012	FALSE		DISTRICT	Boston	Suffolk	MASSACHUSETTS
12000783	Saint Mark's Episcopal Church	Listed	7/3/2014	FALSE		BUILDING	Boston	Suffolk	MASSACHUSETTS
12000978	Sherman Apartments Historic District	Listed	11/28/2012	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
12001012	Central Congregational Church	Listed	10/16/2012	FALSE		BUILDING	Boston	Suffolk	MASSACHUSETTS
12001162	Commonwealth Pier Five	Listed	10/10/1979	FALSE	1.8	BUILDING	Boston	Suffolk	MASSACHUSETTS
13000621	Roslindale Substation	Listed	8/27/2013	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
13000928	Davidson, Sarah, Apartment Block	Listed	12/18/2013	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
13000929	Pilgrim Congregational Church	Listed	12/18/2013	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
13000930	Walton and Roslin Halls	Listed	12/18/2013	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
14000272	Blake and Amory Building	Listed	6/2/2014	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
14000365	Dorchester South Burying Ground	Listed	6/27/2014	FALSE	2	SITE	Boston	Suffolk	MASSACHUSETTS
14000561	Buildings at 825--829 Blue Hill Avenue	Listed	9/10/2014	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
14000698	Almont Apartments	Listed	9/22/2014	TRUE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
14000840	Home for Destitute Jewish Children	Listed	10/8/2014	TRUE	4	BUILDING	Boston	Suffolk	MASSACHUSETTS
14000974	Gridley Street Historic District	Listed	12/3/2014	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
14000975	Lyman, Theodore, School	Listed	12/2/2014	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
14001095	South End District (Boundary Increase)	Listed	12/29/2014	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
15000048	Boston Police Station Number One--Traffic Tunnel Ac	Listed	3/3/2015	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
15000195	Boston National Historical Park	Listed	5/5/2015	FALSE	44	DISTRICT	Boston	Suffolk	MASSACHUSETTS
15000942	Fox, I.J., Building	Listed	12/29/2015	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
16000409	Francis Street--Fenwood Road Historic District	Listed	6/23/2016	FALSE	7	DISTRICT	Boston	Suffolk	MASSACHUSETTS
16000454	Governor Shirley Square Historic District	Listed	7/18/2016	FALSE	5.8	district	Boston	Suffolk	MASSACHUSETTS
66000050	Dorchester Heights National Historic Site	Listed	10/15/1966	FALSE	5.4	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
66000127	Arnold Arboretum	Listed	10/15/1966	FALSE	265	SITE	Boston	Suffolk	MASSACHUSETTS
66000130	Beacon Hill Historic District	Listed	10/15/1966	FALSE	105	DISTRICT	Boston	Suffolk	MASSACHUSETTS
66000132	Boston Athenaeum	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000133	Boston Light	Listed	10/15/1966	FALSE	3.5	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
66000134	Boston Naval Shipyard	Listed	11/15/1966	FALSE	129.5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
66000138	Bunker Hill Monument	Listed	10/15/1966	FALSE	3.8	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
66000141	Brook Farm	Listed	10/15/1966	FALSE	180	SITE	Boston	Suffolk	MASSACHUSETTS
66000366	Ether Dome, Massachusetts General Hospital	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000368	Faneuil Hall	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS

Search Criteria

Attribute	Value to Search For
Status	Listed

Total records:

Ref#	Property Name	Status	Status Date	Restricted Address	Acreage of		City	County	State
					Property	Category of Property			
66000653	Garrison, William Lloyd, House	Listed	10/15/1966	FALSE	0.7	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000764	Harding, Chester, House	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000765	Headquarters House	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000768	Long Wharf and Customhouse Block	Listed	11/13/1966	FALSE	1.5	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
66000770	Massachusetts Historical Society Building	Listed	10/15/1966	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000771	Massachusetts Statehouse	Listed	10/15/1966	FALSE	5.8	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000776	Old North Church	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000778	Old South Meetinghouse	Listed	10/15/1966	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000779	Old State House	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000782	Parkman, Francis, House	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000784	Quincy Market	Listed	11/13/1966	FALSE	4.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000785	Revere, Paul, House	Listed	10/15/1966	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
66000788	Tremont Street Subway	Listed	10/15/1966	FALSE	6	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
66000789	U.S.S. CONSTITUTION	Listed	10/15/1966	FALSE	0.9	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
68000042	Pierce-Hichborn House	Listed	11/24/1968	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000539	Otis, (First) Harrison Gray, House	Listed	12/30/1970	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000540	Fort Warren	Listed	8/29/1970	FALSE	4	DISTRICT	Boston	Suffolk	MASSACHUSETTS
70000682	Massachusetts General Hospital	Listed	12/30/1970	FALSE	4	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000687	Old City Hall	Listed	12/30/1970	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000690	Old South Church in Boston	Listed	12/30/1970	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000691	Old West Church	Listed	12/30/1970	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000730	St. Paul's Church	Listed	12/30/1970	FALSE	1.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000731	Sears, David, House	Listed	12/30/1970	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000733	Trinity Church	Listed	7/1/1970	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
70000921	Fort Independence	Listed	10/15/1970	FALSE	15	SITE	Boston	Suffolk	MASSACHUSETTS
71000087	African Meetinghouse	Listed	10/7/1971	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
72000144	Boston Common and Public Garden	Listed	7/12/1972	FALSE	74	DISTRICT	Boston	Suffolk	MASSACHUSETTS
72000145	Crowninshield House	Listed	2/23/1972	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
72000146	First Baptist Church	Listed	2/23/1972	FALSE	0.4	BUILDING	Boston	Suffolk	MASSACHUSETTS
72000150	Trinity Rectory	Listed	2/23/1972	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
72000544	Loring-Greenough House	Listed	4/26/1972	FALSE	1.8	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000313	Arlington Street Church	Listed	5/4/1973	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000314	Armory of the First Corps of Cadets	Listed	5/22/1973	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000315	Blackstone Block Historic District	Listed	5/26/1973	FALSE	2.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000317	Boston Public Library	Listed	5/6/1973	FALSE	5	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000318	Cyclorama Building	Listed	4/13/1973	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000319	Fulton-Commercial Streets District	Listed	3/21/1973	FALSE	9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000321	Custom House District	Listed	5/11/1973	FALSE	15.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000322	Old Corner Bookstore	Listed	4/11/1973	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000324	South End District	Listed	5/8/1973	FALSE	238	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000325	Hale, Edward Everett, House	Listed	3/21/1979	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000850	Town Hill District	Listed	5/11/1973	FALSE	11	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000854	John Eliot Square District	Listed	4/23/1973	FALSE	9.5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73000855	Kittredge, Alvah, House	Listed	5/8/1973	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
73000856	Roxbury High Fort	Listed	4/23/1973	FALSE	4	SITE	Boston	Suffolk	MASSACHUSETTS
73001948	Back Bay Historic District	Listed	8/14/1973	FALSE	340	DISTRICT	Boston	Suffolk	MASSACHUSETTS
73001953	Sumner, Charles, House	Listed	11/7/1973	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
73001955	Otis, (Second) Harrison Gray, House	Listed	7/27/1973	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000382	Ames Building	Listed	4/26/1974	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000385	Copp's Hill Burial Ground	Listed	4/18/1974	FALSE	4	SITE	Boston	Suffolk	MASSACHUSETTS
74000388	Eliot Burying Ground	Listed	6/25/1974	FALSE	0.8	SITE	Boston	Suffolk	MASSACHUSETTS
74000390	Park Street District	Listed	5/1/1974	FALSE	1.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
74000391	John Adams Courthouse	Listed	5/8/1974	FALSE	2	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000392	Winthrop Building	Listed	4/18/1974	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000393	Youth's Companion Building	Listed	5/2/1974	FALSE	0.6	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000907	Phipps Street Burying Ground	Listed	5/14/1974	FALSE	1.8	SITE	Boston	Suffolk	MASSACHUSETTS
74000911	Clapp Houses	Listed	5/2/1974	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
74000915	Dorchester North Burying Ground	Listed	4/18/1974	FALSE	3.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS
74000917	Pierce House	Listed	4/26/1974	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
74002044	Howe, Samuel Gridley and Julia Ward, House	Listed	9/13/1974	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
74002045	King's Chapel	Listed	5/2/1974	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
74002222	Boston National Historical Park	Listed	10/26/1974	FALSE	41	DISTRICT	Boston	Suffolk	MASSACHUSETTS
74002350	Blake, James, House	Listed	5/1/1974	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
75000299	South Station Headhouse	Listed	2/13/1975	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
75000300	St. Stephen's Church	Listed	4/14/1975	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
75000301	Symphony and Horticultural Halls	Listed	5/30/1975	FALSE	2	BUILDING	Boston	Suffolk	MASSACHUSETTS
76001979	Nell, William C., House	Listed	5/11/1976	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
77001541	Appleton, Nathan, Residence	Listed	12/22/1977	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
78000473	Fenway Studios	Listed	9/13/1978	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
79000368	Bedford Building	Listed	8/21/1979	FALSE	0.4	BUILDING	Boston	Suffolk	MASSACHUSETTS
79000369	International Trust Company Building	Listed	9/10/1979	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
79000370	Washington Street Theatre District	Listed	3/19/1979	FALSE	1.7	DISTRICT	Boston	Suffolk	MASSACHUSETTS
80000442	Wirth, Jacob, Buildings	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000443	Wilbur Theatre	Listed	12/9/1980	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000444	Shubert, Sam S., Theatre	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000445	Metropolitan Theatre	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000446	Hayden Building	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000448	Dill Building	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000450	Boylston Building	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000451	Boston Young Men's Christian Union	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000453	Boston Edison Electric Illuminating Company	Listed	12/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000455	West Street District	Listed	12/9/1980	FALSE	0.6	DISTRICT	Boston	Suffolk	MASSACHUSETTS
80000458	Piano Row District	Listed	12/9/1980	FALSE	4.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS

Search Criteria

Attribute	Value to Search For
Status	Listed

Total records:

Ref#	Property Name	Status	Status Date	Restricted Address	Acreage of		City	County	State
					Property	Category of Property			
80000460	Liberty Tree District	Listed	12/9/1980	FALSE	0.6	DISTRICT	Boston	Suffolk	MASSACHUSETTS
80000462	Beach-Knapp District	Listed	12/9/1980	FALSE	0.4	DISTRICT	Boston	Suffolk	MASSACHUSETTS
80000463	Russia Wharf Buildings	Listed	12/2/1980	FALSE	2.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000465	Oak Square School	Listed	11/10/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000668	United Shoe Machinery Corporation Building	Listed	8/19/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000669	Union Wharf	Listed	6/22/1980	FALSE	2.6	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000670	Suffolk County Jail	Listed	4/23/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000671	Stearns, R. H., House	Listed	6/16/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000672	New England Conservatory of Music	Listed	5/14/1980	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000674	Garrison, William Lloyd, School	Listed	4/16/1980	FALSE	1.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000675	Dorchester-Milton Lower Mills Industrial District	Listed	4/2/1980	FALSE	20.1	DISTRICT	Boston	Suffolk	MASSACHUSETTS
80000676	Charles Playhouse	Listed	6/16/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000677	Berger Factory	Listed	4/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80000678	All Saints' Church	Listed	6/16/1980	FALSE	1.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
80001683	Dillaway School	Listed	4/9/1980	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
80004396	Boston African American National Historic Site	Listed	10/10/1980	FALSE	1	DISTRICT	Boston	Suffolk	MASSACHUSETTS
81000620	Fields Corner Municipal Building	Listed	11/12/1981	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
82000486	Wigglesworth Building	Listed	10/21/1982	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
82004448	Roughan Hall	Listed	4/15/1982	FALSE	1.4	BUILDING	Boston	Suffolk	MASSACHUSETTS
82004450	McKay, Donald, House	Listed	6/2/1982	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
82004453	Haffenreffer Brewery	Listed	5/2/1982	FALSE	5	BUILDING	Boston	Suffolk	MASSACHUSETTS
82004456	Adams-Nervine Asylum	Listed	6/1/1982	FALSE	8.6	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000601	Charles Street African Methodist Episcopal Church	Listed	9/1/1983	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000602	Codman Square District	Listed	6/23/1983	FALSE	4	DISTRICT	Boston	Suffolk	MASSACHUSETTS
83000603	Gardner, Isabella Stewart, Museum	Listed	1/27/1983	FALSE	1.7	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000604	Loring, Harrison, House	Listed	9/1/1983	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000605	Harvard Avenue Fire Station	Listed	3/31/1983	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000606	Lawrence Model Lodging Houses	Listed	9/22/1983	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
83000607	Newspaper Row	Listed	7/7/1983	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
83004097	Codman Building	Listed	10/19/1983	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
83004098	Leather District	Listed	12/21/1983	FALSE	11	DISTRICT	Boston	Suffolk	MASSACHUSETTS
83004099	LUNA (tugboat)	Listed	10/6/1983	FALSE	0.9	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
83004285	Baker, Sarah J., School	Listed	7/7/1983	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
84000421	Vermont Building	Listed	11/13/1984	FALSE	0.3	BUILDING	Boston	Suffolk	MASSACHUSETTS
84002875	Fenway-Boylston Street District	Listed	9/4/1984	FALSE	3.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS
84002890	Moreland Street Historic District	Listed	3/29/1984	FALSE	63.1	DISTRICT	Boston	Suffolk	MASSACHUSETTS
85000316	Bigelow School	Listed	2/21/1985	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
85000317	Dimock Community Health Center Complex	Listed	2/21/1985	FALSE	10	BUILDING	Boston	Suffolk	MASSACHUSETTS
85000318	Dorchester Pottery Works	Listed	2/21/1985	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
85002015	Building at 138--142 Portland Street	Listed	9/5/1985	FALSE	0.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
85003074	Dudley Station Historic District	Listed	12/5/1985	FALSE	20	DISTRICT	Boston	Suffolk	MASSACHUSETTS
85003323	Boston Harbor Islands Archeological District	Listed	12/21/1985	TRUE	886.7	DISTRICT	Boston	Suffolk	MASSACHUSETTS
85003375	Engine House No. 34	Listed	10/24/1985	FALSE	0.4	BUILDING	Boston	Suffolk	MASSACHUSETTS
86000084	USS CASSIN YOUNG (destroyer)	Listed	1/14/1986	FALSE	0.9	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
86000140	Christ Church	Listed	1/30/1986	FALSE	0.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
86000274	Bulfinch Triangle Historic District	Listed	2/27/1986	FALSE	7	DISTRICT	Boston	Suffolk	MASSACHUSETTS
86000375	Harriswood Crescent	Listed	3/13/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
86001486	Sears' Crescent and Sears' Block	Listed	8/9/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
86001504	Richardson Block	Listed	8/9/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
86001909	Filene's Department Store	Listed	7/24/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
86001911	Locke--Ober Restaurant	Listed	7/24/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
86001913	Second Brazer Building	Listed	7/24/1986	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87000757	Harvard Stadium	Listed	2/27/1987	FALSE	11	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
87000760	Boston Common	Listed	2/27/1987	FALSE	50	DISTRICT	Boston	Suffolk	MASSACHUSETTS
87000761	Boston Public Garden	Listed	2/27/1987	FALSE	24	DISTRICT	Boston	Suffolk	MASSACHUSETTS
87000885	Abbotsford	Listed	9/16/1987	FALSE	1.1	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001128	Monument Square Historic District	Listed	6/2/1987	FALSE	8.3	DISTRICT	Boston	Suffolk	MASSACHUSETTS
87001394	New Riding Club	Listed	8/20/1987	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001396	Congress Street Fire Station	Listed	9/3/1987	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001398	House at 17 Cranston Street	Listed	11/20/1987	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001399	Hoxie, Timothy, House	Listed	11/20/1987	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001478	Austin, Francis B., House	Listed	10/21/1988	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001481	Long Island Head Light	Listed	6/15/1987	FALSE	0.1	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
87001495	Saint Augustine Chapel and Cemetery	Listed	9/18/1987	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
87001771	Bunker Hill School	Listed	10/15/1987	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
87001889	Sumner Hill Historic District	Listed	10/22/1987	FALSE	365	DISTRICT	Boston	Suffolk	MASSACHUSETTS
87002549	District 13 Police Station	Listed	2/10/1988	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
88000427	Temple Place Historic District	Listed	7/26/1988	FALSE	1	DISTRICT	Boston	Suffolk	MASSACHUSETTS
88000908	Goodwin, Ozias, House	Listed	6/23/1988	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
88000955	First Church of Jamaica Plain	Listed	7/15/1988	FALSE	1.4	BUILDING	Boston	Suffolk	MASSACHUSETTS
88000957	Greek Orthodox Cathedral of New England	Listed	6/30/1988	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
88000959	Eliot Hall	Listed	7/15/1988	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
89000004	Mount Pleasant Historic District	Listed	2/9/1989	FALSE	170	DISTRICT	Boston	Suffolk	MASSACHUSETTS
89000147	Roxbury Highlands Historic District	Listed	2/22/1989	FALSE	170	DISTRICT	Boston	Suffolk	MASSACHUSETTS
89000974	Massachusetts School of Art	Listed	8/3/1989	FALSE	2.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
89001747	Mission Hill Triangle Historic District	Listed	11/6/1989	FALSE	3.2	DISTRICT	Boston	Suffolk	MASSACHUSETTS
89002125	Roxbury Presbyterian Church	Listed	3/15/1991	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
89002169	St. Joseph's Roman Catholic Church Complex	Listed	12/28/1989	FALSE	1.5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
89002251	Bellevue Standpipe	Listed	1/18/1990	FALSE	2	STRUCTURE	Boston	Suffolk	MASSACHUSETTS
89002271	Chestnut Hill Reservoir Historic District	Listed	1/18/1990	FALSE	95	DISTRICT	Boston	Suffolk	MASSACHUSETTS
90000631	Copp's Hill Terrace	Listed	4/19/1990	FALSE	0.9	SITE	Boston	Suffolk	MASSACHUSETTS
90001095	Calf Pasture Pumping Station Complex	Listed	8/2/1990	FALSE	9.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
90001145	Bowditch School	Listed	8/3/1990	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS

Search Criteria

Attribute	Value to Search For
Status	Listed

Total records:

						Acreage of			
Ref#	Property Name	Status	Status Date	Restricted Address	Property	Category of Property	City	County	State
90001536	Monument Square Historic District	Listed	10/11/1990	FALSE	43	DISTRICT	Boston	Suffolk	MASSACHUSETTS
90001537	Upham's Corner Market	Listed	10/11/1990	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
90001757	Textile District	Listed	11/29/1990	FALSE	2.8	DISTRICT	Boston	Suffolk	MASSACHUSETTS
90001992	Sears Roebuck and Company Mail Order Store	Listed	1/15/1991	FALSE	8.8	BUILDING	Boston	Suffolk	MASSACHUSETTS
92000356	Trinity Neighborhood House	Listed	4/14/1992	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
93001489	Massachusetts Mental Health Center	Listed	1/21/1994	FALSE	2	DISTRICT	Boston	Suffolk	MASSACHUSETTS
93001573	House at 1 Bay Street	Listed	2/9/1994	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
93001587	Eliot Congregational Church	Listed	2/9/1994	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
94001492	Faneuil, Peter, School	Listed	12/16/1994	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
94001494	Lower Roxbury Historic District	Listed	12/9/1994	FALSE	3.2	DISTRICT	Boston	Suffolk	MASSACHUSETTS
95001450	Riviera, The	Listed	12/7/1995	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
96001063	Douglass, Frederick, Square Historic District	Listed	10/3/1996	FALSE	5	DISTRICT	Boston	Suffolk	MASSACHUSETTS
97000920	Brighton Evangelical Congregational Church	Listed	8/21/1997	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
97000969	Charlestown Heights	Listed	1/8/1998	FALSE	3.8	SITE	Boston	Suffolk	MASSACHUSETTS
97000970	Students House	Listed	9/11/1997	FALSE	0.2	BUILDING	Boston	Suffolk	MASSACHUSETTS
97000971	North Terminal Garage	Listed	9/11/1997	FALSE	1.5	BUILDING	Boston	Suffolk	MASSACHUSETTS
97001239	Dorchester Temple Baptist Church	Listed	1/16/1998	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
97001278	ROSEWAY (schooner)	Listed	9/25/1997	FALSE	0.9	SITE	Boston	Suffolk	MASSACHUSETTS
97001377	Allston Congregational Church	Listed	11/7/1997	FALSE	1	BUILDING	Boston	Suffolk	MASSACHUSETTS
97001472	St. Luke's and St. Margaret's Church	Listed	11/12/1997	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
98000149	Eagle Hill Historic District	Listed	2/26/1998	FALSE	40	DISTRICT	Boston	Suffolk	MASSACHUSETTS
98001082	Boston Young Men's Christian Association	Listed	8/20/1998	FALSE	1.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
98001292	St. Mary's Episcopal Church	Listed	10/30/1998	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
98001330	Roslindale Baptist Church	Listed	11/5/1998	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
98001361	Cathedral of St. George Historic District	Listed	11/25/1998	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
98001381	Baker Congregational Church	Listed	11/19/1998	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
99000593	Woodbourne Historic District	Listed	6/4/1999	FALSE	30	DISTRICT	Boston	Suffolk	MASSACHUSETTS
99000633	Symphony Hall	Listed	1/20/1999	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
99001302	Mariner's House	Listed	11/12/1999	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
99001304	Congregation Adath Jeshurun	Listed	11/12/1999	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
99001308	First Congregational Church of Hyde Park	Listed	11/12/1999	FALSE	0.9	BUILDING	Boston	Suffolk	MASSACHUSETTS
99001614	Church Green Buildings Historic District	Listed	12/30/1999	FALSE	0.9	DISTRICT	Boston	Suffolk	MASSACHUSETTS
100001314	Boston Fish Pier Historic District	Listed	7/13/2017	FALSE	12.7	district	Boston	Suffolk	MASSACHUSETTS
100001315	Columbia Road--Devon Street Historic District	Listed	7/20/2017	FALSE	2	district	Boston	Suffolk	MASSACHUSETTS
100001458	Quincy Grammar School	Listed	8/3/2017	FALSE	0.9	building	Boston	Suffolk	MASSACHUSETTS
100001582	Columbia Road--Bellevue Street Historic District	Listed	9/14/2017	FALSE	6.35	district	Boston	Suffolk	MASSACHUSETTS
100002734	Columbia Road--Strathcona Road Historic District	Listed	8/3/2018	FALSE	2.44	district	Boston	Suffolk	MASSACHUSETTS
100002790	Benjamin Silverman Apartments	Listed	8/24/2018	FALSE	0.9	building	Boston	Suffolk	MASSACHUSETTS

Search Criteria

Attribute	Exclude	Value to Search For
Request Type		Multiple Cover Sheet

Total records: 2231

Ref#	Prefix	Property Name	Request Type	State
64000269	MC	Arlington MRA	Multiple Cover Sheet	MA
64000270	MC	Arlington MRA (AD)	Multiple Cover Sheet	MA
64000271	MC	Barnstable MRA	Multiple Cover Sheet	MA
64000272	MC	Blue Hills and Neponset River Reservations MRA	Multiple Cover Sheet	MA
64000273	MC	Boston Theatre MRA	Multiple Cover Sheet	MA
64000274	MC	Brookline MRA	Multiple Cover Sheet	MA
64000275	MC	Cambridge MRA	Multiple Cover Sheet	MA
64000276	MC	Central Village, Ipswich, Massachusetts MRA	Multiple Cover Sheet	MA
64000277	MC	Downtown Salem MRA	Multiple Cover Sheet	MA
64000278	MC	Downtown Springfield MRA	Multiple Cover Sheet	MA
64000279	MC	Fall River MRA	Multiple Cover Sheet	MA
64000280	MC	Fall River MRA (AD)	Multiple Cover Sheet	MA
64000281	MC	First Period Buildings of Eastern Massachusetts TR	Multiple Cover Sheet	MA
64000282	MC	Lighthouses of Massachusetts TR	Multiple Cover Sheet	MA
64000283	MC	Lighthouses of Massachusetts TR (AD)	Multiple Cover Sheet	MA
64000284	MC	Methuen MRA	Multiple Cover Sheet	MA
64000285	MC	Newton MRA	Multiple Cover Sheet	MA
64000286	MC	Newton MRA (AD)	Multiple Cover Sheet	MA
64000287	MC	North Adams MRA	Multiple Cover Sheet	MA
64000288	MC	North Adams MRA (AD)	Multiple Cover Sheet	MA
64000289	MC	Quincy MRA	Multiple Cover Sheet	MA
64000290	MC	Reading MRA	Multiple Cover Sheet	MA
64000291	MC	Reading MRA (AD)	Multiple Cover Sheet	MA
64000292	MC	Rehoboth MRA	Multiple Cover Sheet	MA
64000293	MC	Sherborn MRA	Multiple Cover Sheet	MA
64000294	MC	Southbridge MRA	Multiple Cover Sheet	MA
64000295	MC	Stoneham MRA	Multiple Cover Sheet	MA
64000296	MC	Swansea MRA	Multiple Cover Sheet	MA
64000297	MC	Taunton MRA	Multiple Cover Sheet	MA
64000298	MC	Town of Andover MRA	Multiple Cover Sheet	MA
64000299	MC	Uxbridge MRA	Multiple Cover Sheet	MA
64000300	MC	Wakefield MRA	Multiple Cover Sheet	MA
64000301	MC	Waltham MRA	Multiple Cover Sheet	MA
64000302	MC	Washington MRA	Multiple Cover Sheet	MA
64000303	MC	Winchester MRA	Multiple Cover Sheet	MA
64000304	MC	Worcester MRA	Multiple Cover Sheet	MA
64000305	MC	Worcester Three-Deckers TR	Multiple Cover Sheet	MA
64500250	MC	Diners of Massachusetts MPS	Multiple Cover Sheet	MA
64500251	MC	Gloucester MPS	Multiple Cover Sheet	MA
64500252	MC	Massachusetts State Hospitals And State Schools MPS	Multiple Cover Sheet	MA
64500253	MC	Somerville MPS	Multiple Cover Sheet	MA
64500254	MC	Water Supply System of Metropolitan Boston MPS	Multiple Cover Sheet	MA
64500822	MC	Metropolitan Park System of Greater Boston MPS	Multiple Cover Sheet	MA
64500919	MC	Farms and Rural Retreats of Topsfield, Massachusetts MPS	Multiple Cover Sheet	MA
64500934	MC	Underground Railroad in Massachusetts MPS	Multiple Cover Sheet	MA
64501019	MC	Eastern Rig Dragger Fishing Vessel Shipwrecks in the Stellwagen Bank National Marine Sanctuary	Multiple Cover Sheet	MA
64501040	MC	Downtown Architecture of H.M. Francis, Fitchburg, MA	Multiple Cover Sheet	MA
64501135	MC	Granite Vessel Shipwrecks in the Stellwagen Bank NMS MPS	Multiple Cover Sheet	MA
64501163	MC	Mid-Century Modern Houses of Lexington, Massachusetts MPS	Multiple Cover Sheet	MA
64501197	MC	Mid 20th Century Modern Residential Architecture on Outer Cape Cod MPS	Multiple Cover Sheet	MA

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

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Massachusetts Cultural Resource Information System **MACRIS**

Scanned forms and photos now available for selected towns!

The Massachusetts Cultural Resource Information System (MACRIS) allows you to search the Massachusetts Historical Commission database for information on historic properties and areas in the Commonwealth.

Users of the database should keep in mind that it does not include information on all historic properties and areas in Massachusetts, nor does it reflect all the information on file on historic properties and areas at the Massachusetts Historical Commission.

[Click here to begin your search of the MACRIS database.](#)



[Home](#) | [Search](#) | [Index](#) | [Feedback](#) | [Contact](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)☒ PDF☐ Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Boston

Place: East Boston

Street No: 125-131

Street Name: Sumner St

Resource Type(s): Area, Building, Burial Ground, Object, Structure

For more information about this page and how to use it, [click here](#)

No Results Found.

[New Search](#)[New Search — Same Town\(s\)](#)[Previous](#)[MHC Home](#)| [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)☐ PDF☒ Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Boston

Place: East Boston

Street Name: Clippership Ln

Resource Type(s): Area, Building, Object, Structure

For more information about this page and how to use it, [click here](#)

No Results Found.

[New Search](#)[New Search — Same Town\(s\)](#)[Previous](#)[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: East Boston; Street Name: Sumner St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
BOS.900	Maverick Square Subway Station	Maverick Sq	Boston	1924
BOS.107	Boston Cold Storage Company - Building #8	8 New St	Boston	1908
BOS.185	Our Lady of Assumption Catholic Parochial School	11-15 Seaver St	Boston	1890
BOS.906	Sumner Street Bridge over Conrail	Sumner St	Boston	1908
BOS.187	Hodge Boiler Works Boiler Shop	111 Sumner St	Boston	1902
BOS.188	Hodge Boiler Works Office	111 Sumner St	Boston	c 1902
BOS.192	Woodbury Building	191-201 Sumner St	Boston	1841
BOS.189	East Boston Engine #40 Fire House	260 Sumner St	Boston	1923
BOS.190	Soldani Building	326-328 Sumner St	Boston	1929
BOS.191	Our Lady of the Assumption Roman Catholic Church	394 Sumner St	Boston	c 1869
BOS.15267	Our Lady of the Assumption Roman Catholic Rectory	404 Sumner St	Boston	c 1947

APPENDIX F

Endangered Species Act Documentation



United States Department of the Interior

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



In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-0647
Event Code: 05E1NE00-2019-E-01496
Project Name: Clippership Apartments

January 30, 2019

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List
-

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2019-SLI-0647

Event Code: 05E1NE00-2019-E-01496

Project Name: Clippership Apartments

Project Type: DEVELOPMENT

Project Description: This project is located at 125-131 Sumner Street in East Boston, Massachusetts. The site is an approximately 42,000 square foot (sf) parcel of land developed with four 2-story brick apartment buildings. Redevelopment plans include demolition of the existing buildings and construction of two new residential buildings, that will occupy approximately 21,000 sf of the 42,000 sf site, with the majority of the exterior area planned as pavement or hardscape with minimal landscaped areas and tree pits. This project is expected to start on March 1, 2019 and to last for up to 18 months.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.36917842598507N71.04150597081149W>



Counties: Suffolk, MA

Endangered Species Act Species

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

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Critical habitats

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

IPaC resource list

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

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

Location

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 species¹ 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 Fisheries²).

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 Act¹ and the Bald and Golden Eagle Protection Act².

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.)

American Oystercatcher *Haematopus palliatus*

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

<https://ecos.fws.gov/ecp/species/8935>

Breeds Apr 15 to Aug 31

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Aug 31

Black Skimmer *Rynchops niger*

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

<https://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

Bobolink *Dolichonyx oryzivorus*

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

Breeds May 20 to Jul 31

Buff-breasted Sandpiper *Calidris subruficollis*

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

<https://ecos.fws.gov/ecp/species/9488>

Breeds elsewhere

Canada Warbler *Cardellina canadensis*

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

Breeds May 20 to Aug 10

Dunlin *Calidris alpina arctica*

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

Breeds elsewhere

King Rail *Rallus elegans*

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

<https://ecos.fws.gov/ecp/species/8936>

Breeds May 1 to Sep 5

Least Tern *Sterna antillarum*

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

Breeds Apr 20 to Sep 10

Lesser Yellowlegs *Tringa flavipes*

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

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Long-eared Owl *asio otus*

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

<https://ecos.fws.gov/ecp/species/3631>

Breeds elsewhere

Nelson's Sparrow *Ammodramus nelsoni*

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

Breeds May 15 to Sep 5

Prairie Warbler *Dendroica discolor*

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

Breeds May 1 to Jul 31

Purple Sandpiper *Calidris maritima*

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

Breeds elsewhere

Red-throated Loon *Gavia stellata*

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

Breeds elsewhere

Ruddy Turnstone *Arenaria interpres morinella*

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

Breeds elsewhere

Rusty Blackbird *Euphagus carolinus*

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

Breeds elsewhere

Saltmarsh Sparrow *Ammodramus caudacutus*

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

Breeds May 15 to Sep 5

Seaside Sparrow *Ammodramus maritimus*

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

Breeds May 10 to Aug 20

Semipalmated Sandpiper *Calidris pusilla*

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

Breeds elsewhere

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.

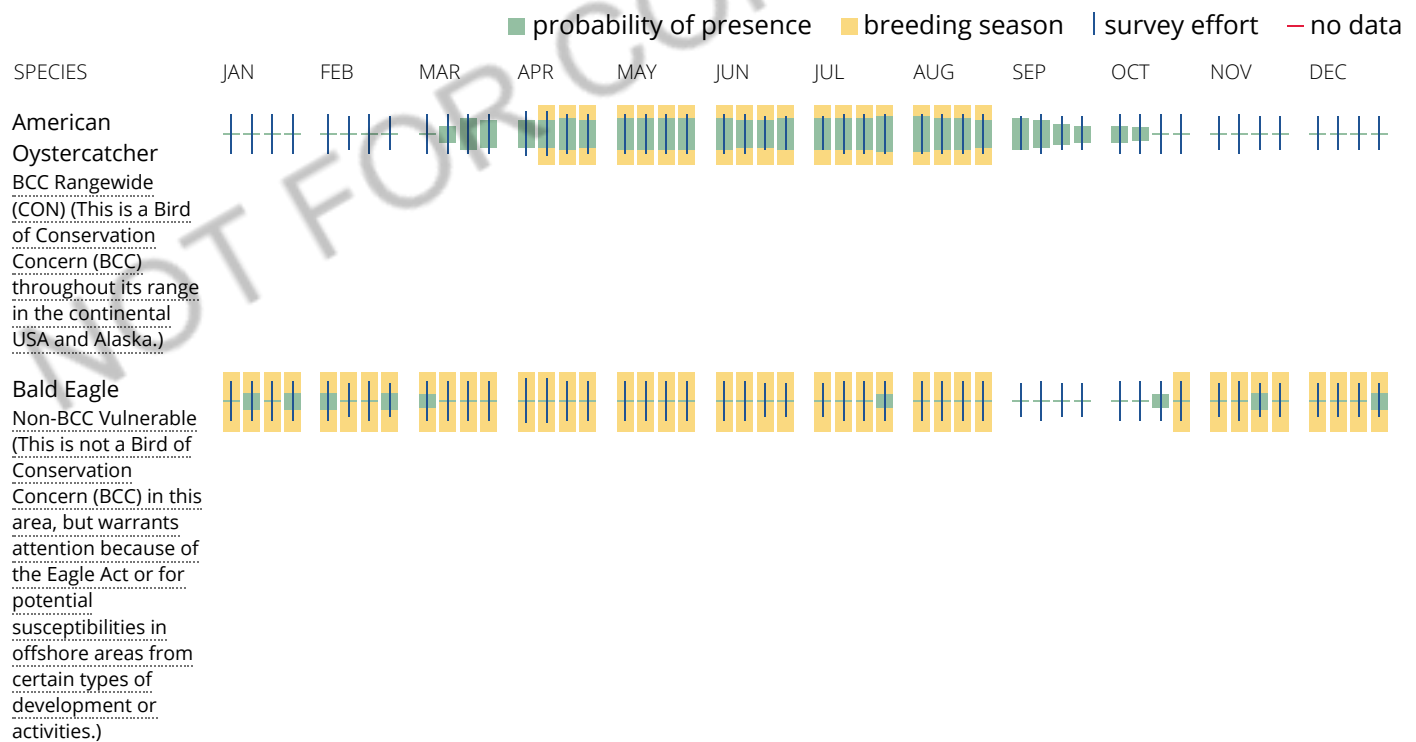
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

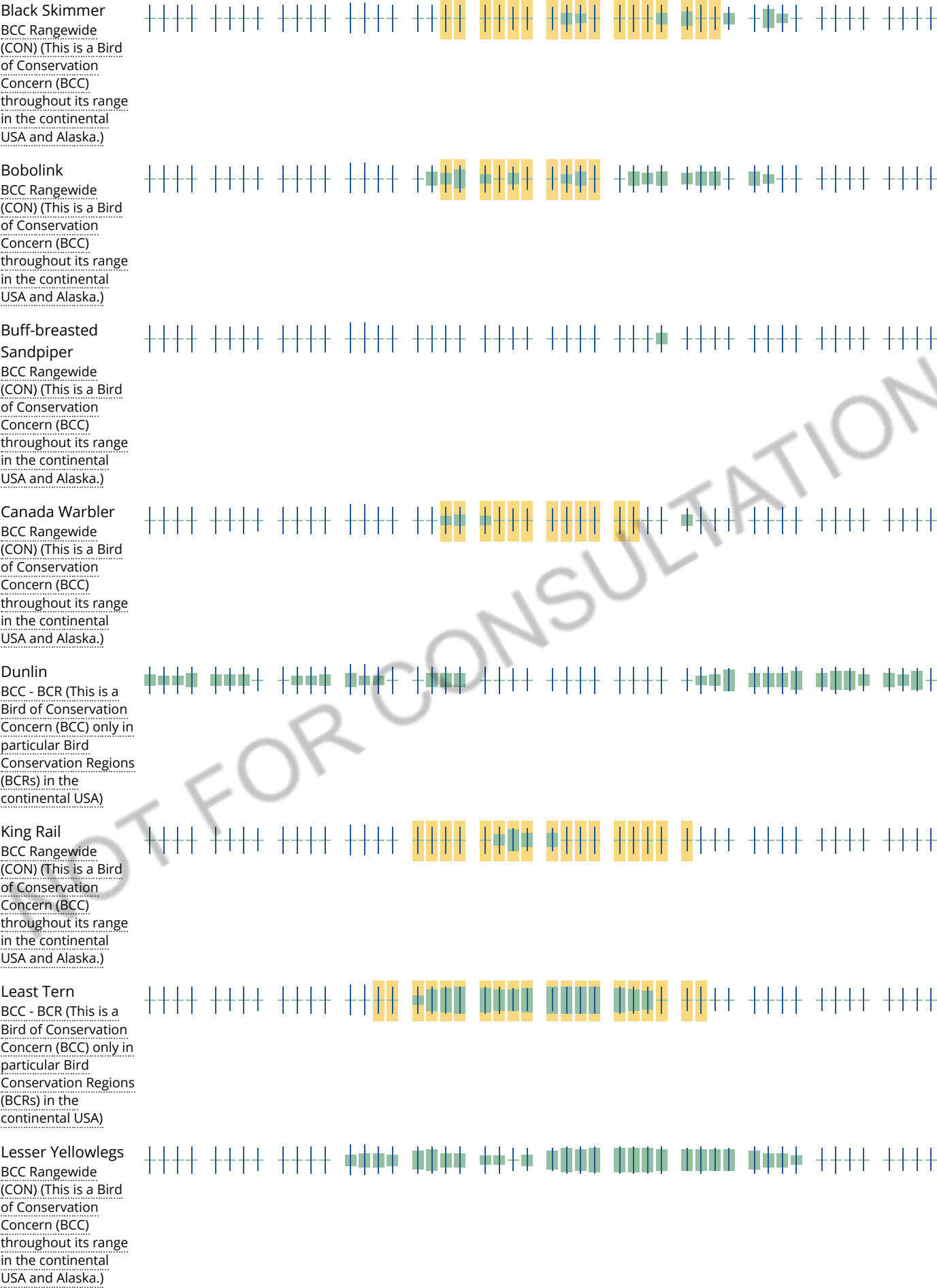
No Data (—)

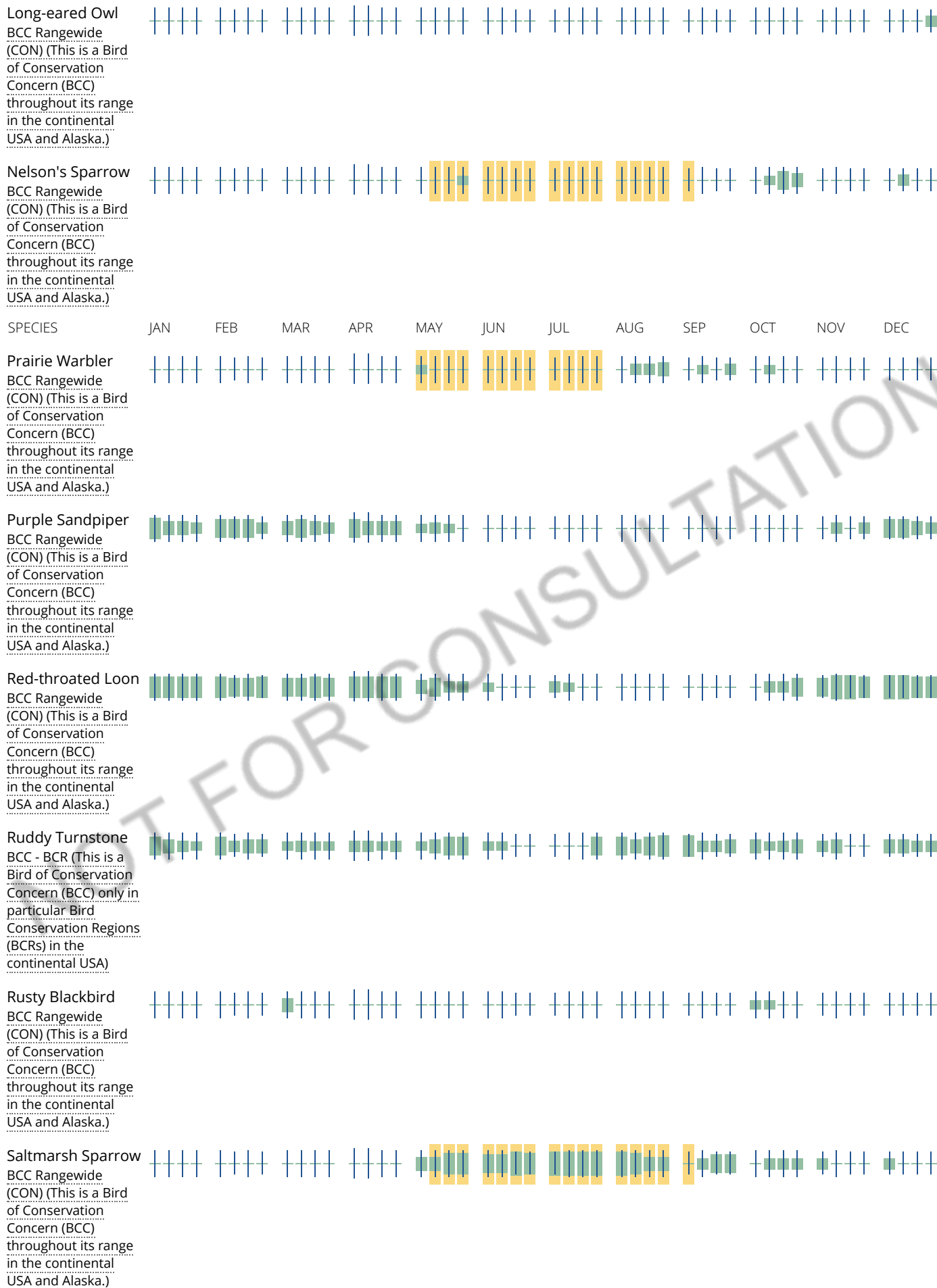
A week is marked as having no data if there were no survey events for that week.

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.









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 [E-bird Explore Data 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](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

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 tubercid 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.

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

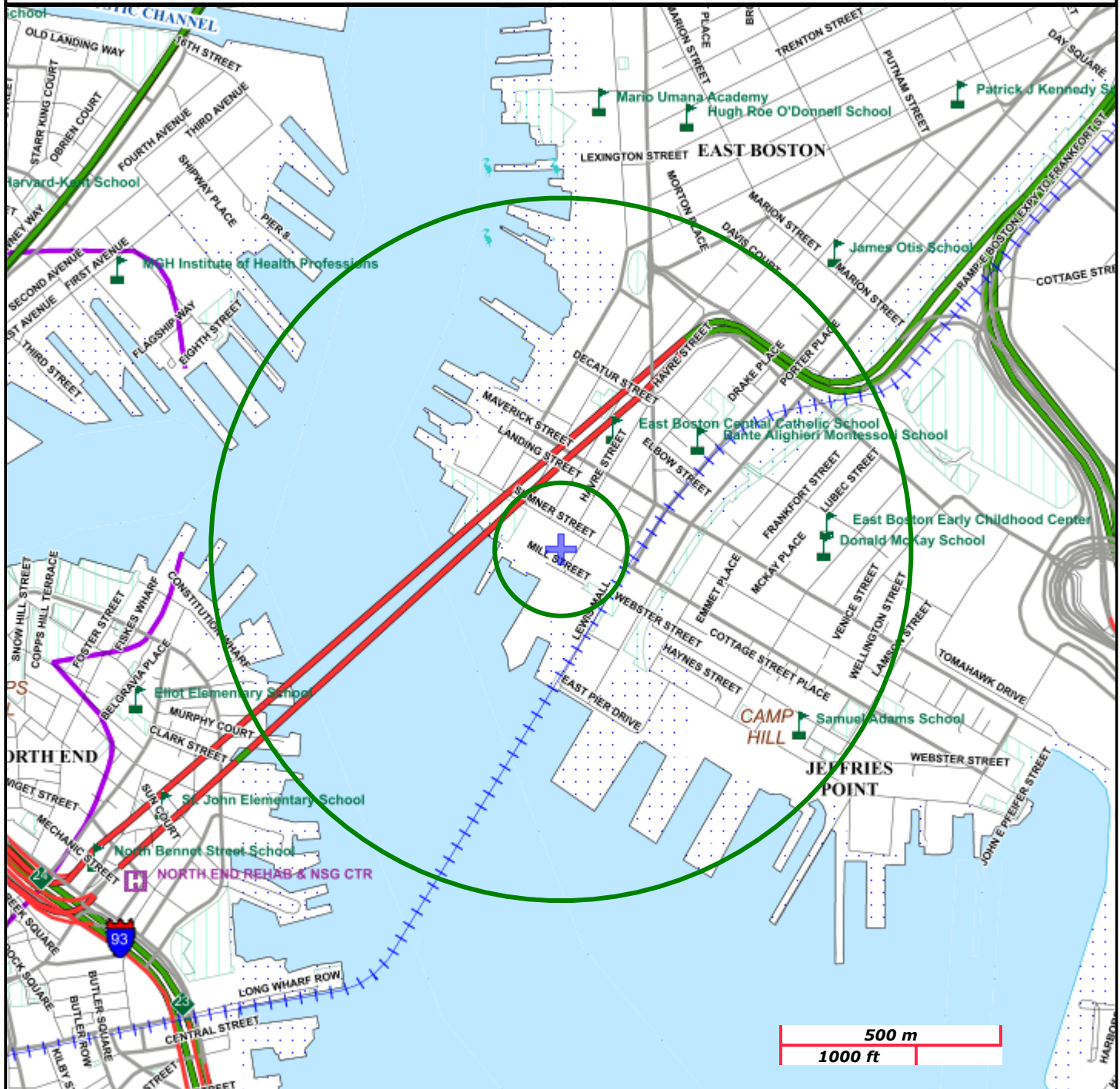
125-131 SUMNER STREET BOSTON, MA
2-000003981
NAD83 UTM Meters:
4692787mN, 331898mE (Zone: 19)
January 30, 2019

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



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

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Body of Water (State)	Distribution/Range in Watershed	Life Stages Present	Use of the Watershed	References
Narraguagus River (ME)	Up to Cherryfield Dam (RKM 10.6)	adults	Foraging - May be used for foraging; tag detections indicate that usage of the river is for short periods during coastal migrations[1]	[1] Dionne et al. 2013
Penobscot River (ME)	Up to Milford Dam (RKM 62)	adults documented; other life stages assumed but unknown	Spawning - Not documented to date; suitable spawning habitat is accessible[3] Foraging - Foraging concentrations from RKM 10-24.5 during the summer months as well as throughout the lower and middle estuary; RKM 21-45 by mid-July and August[1] Overwintering - Aggregations located from RKM 36.5-42 from mid-August to mid-April[2]	[1] Fernandes et al. 2010; [2] Lachapelle 2013; [3] Johnston 2016
St. George River (ME)	Up to RKM 39 in lower estuary	adults	Foraging - May be used for foraging; tag detections indicate that usage of the river is for short periods during coastal migrations[1][2]	[1] Zydlewski et al. 2011; [2] Dionne et al. 2013
Medomak River (ME)	Up to RKM 17.5	adults	Foraging - May be used for foraging; tag detections indicate that usage of the river is for short periods during coastal migrations[1][2][3]	[1] Zydlewski et al. 2011; [2] Dionne et al. 2013; [3] Johnston 2016
Damariscotta River (ME)	Up to Damariscotta Lake Dam (RKM 30.3)	adults	Foraging - May be used for foraging; tag detections indicate that usage of the river is for short periods during coastal migrations[1][2]	[1] Zydlewski et al. 2011; [2] Dionne et al. 2013
Sheepscot River (ME)	Up to Head Tide Dam (RKM 35)	adults	Foraging - Montsweag Bay during the summer [1] Overwintering - Suspected to occur in the estuary[2]	[1] Fried and McCleave 1973; [2] SSSRT 2010

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Kennebec River (ME)	Up to Lockwood Dam (RKM 103), also includes Merrymeeting Bay, Sagadahoc Bay, and the entirety of the Back, Sasanoa, Eastern, and Cathance Rivers	eggs, larvae, YOY, juveniles, and adults	Spawning - Occurs at two sites: below the former Edwards Dam[7] (RKM 58-74) and downstream of the Lockwood Dam[8] (RKM 87-103) Rearing - Eggs and larvae occur in freshwater reaches below the spawning sites[8] Foraging - Throughout the lower estuary to the mouth of the river[4][5][8] (below RKM 70) with concentration areas near Bath[3][5][8] (RKM 16-29) including Sagadahoc Bay[6] and the Back and Sasanoa Rivers[1][5][8] Overwintering - Majority in Merrymeeting Bay [5][7] (RKM 37-40 and 40-42), also Bluff Head [2][5] (RKM 15), and in the lower portions of the Eastern and Cathance Rivers (tributaries to Merrymeeting Bay)[2]	[1] McCleave et al. 1977; [2] Squiers and Robillard 1997; [3] Squiers 2003; [4] Fernandes et al. 2010; [5] SSSRT 2010; [6] Fire et al. 2012; [7] Wippelhauser and Squiers 2015; [8] Wippelhauser et al. 2015
Androscoggin River (ME)	Up to Brunswick Dam (RKM 8.4)	eggs, larvae, YOY, juveniles, and adults	Spawning - Below Brunswick Dam to the Rt. 201 Bridge(RKM 7.7-8.4)[2] Rearing - Eggs and larvae occur in freshwater reaches below the spawning sites[3] Foraging - Montsweag Bay during the summer [1]	[1] McCleave et al. 1977; [2] Wippelhauser and Squiers 2015; [3] Wippelhauser et al. 2015
Presumpscot River (ME)	Up to Presumpscot Falls (RKM 4)	adults	Foraging - May be used for foraging[1]	[1] Yoder et al. 2009
Saco River (ME)	Up to Cataract Dam (RKM 10)	adults	Foraging - Used seasonally May-November[1]	[1] Little et al. 2013; [2] Hodgdon et al. 2018
Piscataqua River (NH)	Entirety of Piscataqua River including Cocheco River from its confluence with Piscataqua River upstream to Cocheco Falls Dam and waters of Salmon Falls River from its confluence with Piscataqua River upstream to the Route 4 Dam	adults	Foraging - Used seasonally for foraging and resting during spring and fall migrations; tracking data indicates that use by individual sturgeon is limited to days or weeks[1]	[1] Kieffer and Trefry, pers. comm., April 18, 2017

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Merrimack River (MA)	Up to Essex Dam (RKM 46)	eggs, larvae, YOY, juveniles, and adults	Spawning - Near Haverhill[2] (RKM 30-32) Rearing - Eggs and larvae present in spawning grounds four weeks after spawning occurs, following which they would begin to move downstream continuing their development in the freshwater reach of the river[1] (RKM 16-32) Foraging - Lower river with concentrations near Amesbury and the lower islands[1][3] (RKM 6-24) Overwintering - Late fall to early spring[1]; multiple overwintering sites from RKM 15-29 in freshwater reaches beyond the maximum salt penetration[4]	[1] Kieffer and Kynard 1993; [2] Kieffer and Kynard 1996; [3] Kynard et al. 2000; [4] Wippelhauser et al. 2015
Narragansett Bay (RI)	Throughout the bay	adults	Foraging - Potentially occurs where suitable forage is present[1]	[1] NMFS 1998
Thames River (CT)	Up to the Greenville Dam (RKM 28)	adults undocumented, but assumed based on documented occurrences of Atlantic sturgeon in the river	Foraging - Assumed to occur where suitable forage is present[1]	[1] The Day June 17, 2016 (http://www.theday.com/article/20160617/NWS01/160619212)

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Connecticut River (CT/MA)	Up to Turners Falls Dam, MA (RKM 198)	eggs, larvae, YOY, juveniles, and adults	<p>Spawning - Below Turners Falls Dam/Cabot Station at two locations depending on river conditions[3] (RKM 193-194); limited spawning may occasionally occur below Holyoke Dam[3] (RKM 139-140)</p> <p>Rearing - Eggs and larvae spawned upstream documented up to 20 km downstream of the spawning site[3]; if spawning is successful downstream of Holyoke, early life stages would be present in downstream freshwater reaches [1][3] (RKM 13-194)</p> <p>Foraging - Concentrations above the Holyoke Dam in the Deerfield Concentration Area[3] (RKM 144-192), Agawam Concentration Area [1] (RKM 114-119), and the lower Connecticut Concentration Area[3] (RKM 0-110)</p> <p>Overwintering - Concentrations above the Holyoke Dam in the Deerfield Concentration Area[3] (RKM 144-192); below the Holyoke Dam concentrations near Holyoke[2] (RKM 137-140), Agawam[3] (RKM 114-119), Hartford [2] (RKM 82-86), Portland, CT[3] (RKM 46), and the lower river[2] (RKM 0-25)</p>	[1] Buckley and Kynard 1983; [2] Buckley and Kynard 1985; [3] Kynard et al. 2012
Deerfield River (MA), tributary of the Connecticut River	Up to Deerfield No. 2 at Shelburne Falls (RKM 22.5)	adults documented in lower 3 km; larvae spawned in Connecticut River may be present during certain flow conditions	<p>Rearing - Water flow could potentially draw migrating larvae into unfavorable habitat in the Deerfield River[1]; potential refuge area during high flows[2]</p> <p>Foraging - Spring through fall in lower river[2] (RKM 0-3.5)</p> <p>Overwintering - May be used as an overwintering area potential pre-spawning staging area for adults[1]</p>	[1] Kieffer and Kynard 1992; [2] Kynard et al. 2012

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Westfield River (MA), tributary of the Connecticut River	Up to DSI Dam (RKM 9.5)	adults	Foraging - Assumed to occur where suitable forage is present[1]	[1] USFWS 2007 in SSSRT 2010
Quinnipiac River (CT)	Up to Wallace Dam (RKM 27)	adults undocumented, but assumed based on documented occurrences of Atlantic sturgeon in the river	Foraging - Assumed to occur where suitable forage is present[1]	[1] Hartford Courant September 30, 1994 (http://articles.courant.com/1994-09-30/news/9409300111_1_sturgeon-fish-story-giant-fish)
Housatonic River (CT)	Up to Derby Dam (RKM 23.5)	adults	Spawning - Historical spawning occurred above the Derby Dam, none known to occur currently[1] Foraging - Potentially occurs where suitable forage is present[1]	[1] Savoy and Benway 2006 in SSSRT 2010
Long Island Sound (CT/NY)	Full length of Long Island Sound in nearshore coastal waters	adults	Foraging - Potentially occurs where suitable forage is present[1]	[1] Savoy 2004 in SSSRT 2010
East River (NY)	Full length of the East River	transient adults undocumented, but assumed based on detections of Atlantic sturgeon and occasional movements of shortnose sturgeon from Hudson River to Connecticut River	Foraging - Potentially occurs where suitable forage is present[1]	[1] Savoy 2004 in SSSRT 2010

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Hudson River (NY/NJ)	Up to Troy Dam, NY (approximately RKM 246)	eggs, larvae, YOY, juveniles, and adults	<p>Spawning - Documented from late March to early May when water temperatures reach 10°-18°C[1] from Cocksackie to below the Federal Dam at Troy[1][3] (RKM 190-246)</p> <p>Rearing - Eggs on the spawning grounds; larvae downstream to at least RKM 104; YOY downstream to at least RKM 64[1]</p> <p>Foraging - Throughout the Hudson River (RKM 38-175) [3][4] with concentrations in Haverstraw Bay[1] (RKM 56-64)</p> <p>Overwintering - Late fall to early spring[3]; largest area (mainly spawning adults) near Kingston[2] (RKM 137-149); smaller overwintering areas are located from Saugerties to Hyde Park[2] (RKM 123-170) and in the Croton-Haverstraw Bay area[2] (RKM 54-61); many juveniles overwinter in the lower river[1] (RKM 0-64)</p>	[1] Dovel et al. 1992; [2] Geoghegan et al. 1992; [3] Bain 1997; [4] Pendleton et al. 2018

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Delaware River and Bay (NJ/DE/PA)	Up to Lambertville, PA (RKM 240)	eggs, larvae, YOY, juveniles, and adults	<p>Spawning - Documented from late March through late May; water temperatures 6-18°C; between Trenton and Lambertville[6] (RKM 214-238)</p> <p>Rearing - Eggs and larvae between Trenton and Lambertville[6] (RKM 214-238); juveniles located upstream of the salt wedge from Wilmington to Philadelphia[3] (RKM 114-148)</p> <p>Foraging - Throughout the river, between the vicinity of Trenton south to Artificial Island[7] (RKM 79)</p> <p>Overwintering - November to March[1]; overwinter when waters reach 10°C (typically mid-November)[2]; many adults concentrate from RKM 190-212[1][4], but occur downstream below Wilmington[4] (RKM 116); juveniles overwinter from Philadelphia to below Artificial Island[5] (RKM 70-154); variety of behaviors from sedentary to active[6]</p>	[1] O'Herron et al. 1993; [2] USGS gauge at Philadelphia (01467200) during the 2003-2008 time period; [3] Burton et al. 2005; [4] ERC 2006; [5] Brundage and O'Herron 2009; [6] ERC 2009; [7] SSSRT 2010
Schuylkill River (PA), tributary of the Delaware River	Up to Fairmount Dam (RKM 13.6)	juveniles and adults	Foraging - Potentially occurs where suitable forage is present[1]	[1] Philadelphia Water Department November 7, 2014 (http://www.phillywatersheds.org/endangered-shortnose-sturgeon-returns-schuylkill)
C&D Canal (DE/MD)	Used at least occasionally to move from Chesapeake Bay to the Delaware River	adults	Foraging - Assumed to occur in areas with suitable forage[1]	[1] Welsh et al. 2002
Chesapeake Bay (MD/VA)	Maryland and Virginia waters of mainstem bay and tidal tributaries including those specifically listed below.	adults documented; other life stage presence unknown	Foraging, Resting, and Overwintering - Assumed to occur in areas with suitable forage [1][2]	[1] SSSRT 2010; [2] Balazik 2017

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Susquehanna River (MD)	Up to Conowingo Dam (RKM 16)	adults documented; other life stages assumed but unknown	Spawning - Historically occurred; currently unknown as suitability of habitat is likely impacted by dam operations[1] Foraging - Assumed to occur in areas with suitable forage[2] Overwintering - Not documented but assumed based on anecdotal reports of aggregations of sturgeon in deep holes near Lapidum and Perrysville[2]	[1] Litwiler 2001; [2] SSSRT 2010
Potomac River (MD/VA)	Up to Little Falls Dam (RKM 189)	adults documented; other life stages assumed but unknown	Spawning - Historically occurred; current spawning not documented but assumed based on presence of pre-spawning females and suitable habitat at RKM 185-187[1] Rearing - Eggs expected at RKM 185-187, larvae would be present downstream in freshwater[1] Foraging - Mainly in the deepwater channel from RKM 63-141[1][2] Overwintering - Near Mattawoman Creek; saltwater/freshwater reach near Craney Island [1][2] (RKM 63-141)	[1] Kynard et al. 2007; [2] Kynard et al. 2009
Rappahannock River (VA)	Range not confirmed, but they have been documented in this river (likely throughout the entire river)	adults	Foraging - Potentially occurs where suitable forage is present; one was captured in May 1998[1]	[1] Spells 1998
York River (VA)	Range unknown (potentially throughout the river and tributaries)	adults	Foraging - Potentially occurs where suitable forage is present [1]	[1] Balazik, pers. comm., June 7, 2018

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James River (VA)	Range not confirmed, but likely up to Boshers Dam (RKM 182.3)	adults	Foraging/Spawning - Foraging potentially occurs where suitable forage is present; a sturgeon, possibly from the Potomac or Delaware River, was captured on March 13, 2016, at RKM 48[1]; on February 2018, a second sturgeon (a confirmed gravid female) was captured near RKM 48[2] (genetics results not yet available); spawning area unknown; the salinity at RKM 48 is usually low (brackish).	[1] Balazik 2017; [2] Balazik, pers. comm., February 10, 2018

Listing rule: 32 FR 4001, March 11, 1967; **Recovery plan:** NMFS 1998. Available online: http://www.nmfs.noaa.gov/pr/pdfs/recovery/sturgeon_shortnose.pdf

GARFO Master ESA Species Table - Sea Turtles

General distribution: Four species (loggerhead, green, Kemp's ridley, and leatherback) found throughout continental shelf and slope waters of the Northwest Atlantic Ocean; tropical to boreal waters, preferred temperatures greater than 10°C; northward and inshore movement into waters of the Greater Atlantic Region begins in the spring, with turtles arriving into Mid-Atlantic waters in mid-April/May and into Gulf of Maine waters in June; in the fall, this trend is reversed with most turtles leaving the region's waters by the end of November; outside of these times, sea turtle presence in the region's waters is considered unlikely aside from cold-stunned individuals that fail to migrate south (see below); a fifth species (hawksbill) is considered extremely rare in the region based on only a few documented occurrences and its affinity for tropical waters and coral reef type habitats

Disclaimer: the best available information on the presence of sea turtles in the Greater Atlantic Region is presented below; coastal/inshore areas of regular occurrence highlighted below are ones where we have information specific to sea turtle use of the area that would be helpful for action agencies reviewing proposed actions and their potential effects on turtles; however, they may occur in other coastal/inshore areas within this region for which we do not currently have specific information; for nesting individuals, the U.S. Fish and Wildlife Service has jurisdiction over sea turtles when they are on land

State	Coastal / Inshore Areas of Regular Occurrence	Likely Presence	Life Stages Present	Behaviors Anticipated to Occur
ME/NH and MA (north of Cape Cod)	Cape Cod Bay	June to October/November (note: cold stunning of hard-shelled sea turtles occurs annually from October to January)		Foraging Loggerhead (Northwest Atlantic DPS) - Pelagic and benthic juveniles - omnivorous on bottom and surface - Sub-adults and adults - benthic invertebrates along the coast
MA (south of Cape Cod)	Buzzards Bay, Nantucket and Vineyard Sounds		Loggerhead (Northwest Atlantic DPS) - Pelagic and benthic juveniles, subadults, and adults	Green (North Atlantic DPS) - Juveniles - Omnivorous along coasts and in protected bays and lagoons - Adults - Herbivorous in nearshore areas
RI	Narragansett Bay and Block Island Sound		Green (North Atlantic DPS) - Juveniles and adults	Kemp's ridley - Juveniles - Benthic invertebrates in protected coastal areas
CT/NY	Long Island Sound and associated bays/estuaries (e.g., Peconic Bay)		Kemp's ridley - Juveniles only	Leatherback - Juveniles and adults - Primarily prey on jellyfish in offshore oceanic or coastal neritic areas
NY/NJ	Coastal waters off the New York Harbor Complex (e.g., Raritan and Sandy Hook Bays)	May to November (note: cold stunning of hard-shelled sea turtles occurs annually from October to January)	Leatherback - Juveniles and adults	
NJ/DE	Delaware Bay and other back bays (e.g., Barnegat Bay)			
DE/MD/VA	Coastal waters off Virginia Beach, coastal waters and back bays of the DelMarVa Peninsula, Chesapeake Bay, Tangier Sound, and lower portions of southern Chesapeake Bay tributaries (e.g., James, York, Rappahannock, and Potomac Rivers)			Nesting North of North Carolina, sea turtle nesting is rare (there is occasional loggerhead nesting in Virginia, but no established nesting beaches further north)

GARFO Master ESA Species Table - Sea Turtles

Loggerhead (Northwest Atlantic DPS)	Listing rule: 76 FR 58868, September 22, 2011; Recovery plan: NMFS and USFWS 2008; Additional references: Shoop and Kenney 1992; Epperly et al. 1995a, 1995b, 1995c; Braun-McNeill and Epperly 2004; Morreale and Standora 2005; Braun-McNeill et al. 2008; Conant et al. 2009; Mansfield et al. 2009; NMFS NEFSC 2011; Griffin et al. 2013
Green (North Atlantic DPS)	Listing rule: 81 FR 20057, April 6, 2016; Recovery plan: NMFS and USFWS 1991; Additional references: Lahanas et al. 1994; Wynne and Schwartz 1999; Ruiz-Urquiola et al. 2010; Seminoff et al. 2015
Kemp's ridley	Listing rule: 35 FR 18319, December 2, 1970; Recovery plan: NMFS et al. 2011; Additional references: TEWG 2000; Morreale et al. 2007; NMFS and USFWS 2015
Leatherback	Listing rule: 35 FR 8491, June 2, 1970; Recovery plan: NMFS and USFWS 1992; Additional references: Bjorndal 1997; TEWG 2007; Fossette et al. 2008; Dodge et al. 2011; NMFS and USFWS 2013
Hawksbill	Listing rule: 35 FR 18319, December 2, 1970; Recovery plan: NMFS and USFWS 1992; Additional references: NMFS and USFWS 2013

GARFO Master ESA Species Table - Marine Mammals

Species	Region	Offshore distribution	Nearshore areas of importance	Likely Presence	Life Stages Present	Behaviors Anticipated to Occur
North Atlantic right whale	Northeast (ME to Cape Cod, MA)	throughout continental shelf and slope waters	Cape Cod Bay, Massachusetts Bay, Great South Channel, western Gulf of Maine, Georges Bank, Jordan Basin, Wilkinson Basin, Jeffreys Ledge, Cashes Ledge	Year round	Adults and juveniles	Foraging - Cape Cod Bay (January-April), Massachusetts Bay (January-April), Great South Channel (April-June), the western Gulf of Maine (April-May and July-October), the northern edge of Georges Bank (May-July), Jordan Basin (August-October), and Wilkinson Basin (April-July) Wintering - Increasing evidence of wintering areas (approximately November-January) in Cape Cod Bay, Jeffreys and Cashes Ledge, Jordan Basin, and Massachusetts Bay (e.g., Stellwagen Bank)
	Mid-Atlantic (Cape Cod, MA to VA)	throughout continental shelf and slope waters	possibly waters off New Jersey and Virginia	Year round	Adults and juveniles	Migration - Migratory pathway to/from northern (high latitude) foraging and southern calving grounds (primarily November-April)
Fin whale	Northeast (ME to Cape Cod, MA)	throughout continental shelf and slope waters	Massachusetts Bay, Stellwagen Bank, Great South Channel, east of Cape Cod, western Gulf of Maine, eastern perimeter of Georges Bank	Year round	Adults and juveniles	Foraging - Greatest densities from March-August; lower densities from September-November; important foraging grounds include Massachusetts Bay (especially Stellwagen Bank), Great South Channel, waters off Cape Cod (~40-50 meter contour), the western Gulf of Maine (especially Jeffreys Ledge), and the eastern perimeter of Georges Bank Wintering - Evidence of wintering areas in Stellwagen Bank and eastern perimeter of Georges Bank
	Mid-Atlantic (Cape Cod, MA to VA)	throughout continental shelf and slope waters	east end of Long Island, mid-shelf east of New Jersey	Year round	Adults and juveniles	Foraging - Year round in the mid-shelf area off the east end of Long Island Migration - Migratory pathway to/from northern (high latitude) foraging and southern (low latitude) calving grounds Wintering - Evidence of wintering areas in mid-shelf areas east of New Jersey Calving - Possible offshore calving area (October-January)

GARFO Master ESA Species Table - Marine Mammals

Sei whale	Northeast (ME to Cape Cod, MA)	continental shelf edge/slope waters with depths greater than 200 meters	none	Year round	Adults and juveniles	<p>Foraging - Spring through summer, found in greatest densities in offshore waters of the Gulf of Maine and Georges Bank (eastern margin into the Northeast Channel area; along the southwestern edge in the area of Hydrographer Canyon); prefer continental shelf edge/slope waters (i.e., >200 meters), although incursions into continental shelf waters do occur seasonally or sporadically during periods of high prey abundance; generally feed on copepods and can often be found in areas where right whales are also found foraging, typically a bit further offshore than Cape Cod Bay</p> <p>Migration - The population is believed to migrate from south of Cape Cod and along the coast of eastern Canada in June-July, and return on a southward migration again in September-October</p>
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Sperm whale	Northeast and Mid-Atlantic (ME to VA)	areas with depths greater than 600 meters, and are relatively uncommon in waters less than 300 meters deep	none	Year round	Adults and juveniles	<p>Foraging - In winter, concentrated east and northeast of Cape Hatteras; in spring, the center of distribution shifts northward to east of Delaware and Virginia, and is widespread throughout the central portion of the Mid-Atlantic Bight and the southern portion of Georges Bank; in summer, the distribution is similar but also includes the area east and north of Georges Bank and into the Northeast Channel region, as well as the continental shelf (inshore of the 100 meter isobath) south of New England; in fall, occurrence south of New England on the continental shelf is at its highest level, and there remains a continental shelf edge occurrence in the Mid-Atlantic Bight</p> <p>Migration - In some mid-latitudes, there seems to be a general trend to migrate north and south depending on the seasons (they move poleward in the summer); in temperate areas, there appears to be no obvious seasonal migration</p>
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GARFO Master ESA Species Table - Marine Mammals

Blue whale	Northeast and Mid-Atlantic (ME to VA)	continental shelf edge/slope waters with depths greater than 200 meters	none	Year round	Adults and juveniles	<p>Foraging - Off the U.S. Northeast and Mid-Atlantic coasts, they are most common during the summer and fall feeding seasons and typically leave by early winter; although they are rare in continental shelf waters, blue whales are occasionally seen off Cape Cod; best considered an occasional visitor in U.S. Atlantic waters, which may represent the southern limit of its feeding range</p> <p>Migration - Migrate seasonally between summer and winter, but some evidence suggests that individuals remain in certain areas year round; information about movements varies with location, and migratory routes are not well known</p>
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<u>Species</u>	<u>Listing Rule</u>	<u>Recovery Plan</u>
North Atlantic right whale	73 FR 12024; March 6, 2008	NMFS 2005
Fin whale	35 FR 18319; December 2, 1970	NMFS 2010a
Sei whale	35 FR 18319; December 2, 1970	NMFS 2011
Sperm whale	35 FR 18319; December 2, 1970	NMFS 2010b
Blue whale	35 FR 18319; December 2, 1970	NMFS 1998

References: CETAP 1982; Watkins and Schevill 1982; Payne 1984; Kenney et al. 1986, 1995; Schevill et al. 1986; Winn et al. 1986; Wenzel et al. 1988; Hamilton and Mayo 1990; Payne et al. 1990; Hain et al. 1992; Brown et al. 2002; McClellan et al. 2004; Good 2008; NOAA 2008; Baumgartner et al. 2011; Cole et al. 2013; Khan et al. 2013, 2014, 2016; Waring et al. 2016; 81 FR 4837, January 27, 2016; 50 CFR 224.105.

General distribution: Atlantic Ocean waters and associated bays, estuaries, and coastal river systems from Hamilton Inlet, Labrador, Canada, to Cape Canaveral, Florida; only subadult and adult life stages occur in marine waters, where they are typically found in waters 5-50 meters in depth (Stein et al. 2004; ASMFC TC 2007); subadults and adults may travel long distances in marine waters, aggregate in both ocean and estuarine areas at certain times of the year, and exhibit seasonal coastal movements in the spring and fall; distribution in rivers and inshore bays typically occurs from the estuary or river mouth generally up to the first impassible barrier (e.g., a dam or falls); Atlantic sturgeon generally use the deepest habitats available to them in rivers, but they have also been collected over shallow (2.5 meters), tidally influenced flats and substrates ranging from mud to sand and mixed rubble and cobble (Savoy and Pacileo 2003)

Disclaimer: the best available information on Atlantic sturgeon presence within coastal rivers, estuaries, and bays of the Greater Atlantic Region is presented below; waterbodies highlighted below are ones where we have information specific to Atlantic sturgeon use of the area that would be helpful for action agencies reviewing proposed actions and their potential effects on Atlantic sturgeon; however, they may occur in other watersheds within this range for which we do not currently have specific information; note: individuals from any of the five listed DPSs (Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic) may occur in any of the areas identified throughout the species' range; a description of Atlantic sturgeon life history stages are included at the end of the table below

Body of Water (State)	Distribution/Range in Watershed	Life Stages Present	Use of the Watershed	References
Cobscook Bay/St. Croix River (ME)	Up to the Milltown Dam at Calais, ME (RKM 16)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Zydlewski (UMaine) pers. comm., September 21, 2015
Penobscot River (ME)	Up to the Milford Dam (RKM 62)	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Spawning - undocumented, but 12 km of suitable spawning habitat is accessible[2] Foraging - wherever suitable forage is present, documented in the lower river (RKM 21-24.5)[1]	[1] Fernandes et al. 2010; [2] Wippelhauser et al. 2017
Damariscotta River (ME)	Up to Damariscotta Lake Dam (RKM 30.3)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present; tag detections indicate that usage of the river is for short periods during coastal migrations[1]	[1] Picard and Zydlewski 2014
Sheepscot River (ME)	Up to the head-of-tide dam (RKM 35)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present; may occur in Montsweag Bay as shortnose sturgeon foraging has been documented there[1]; subadults have been captured in the river[2]	[1] Fried and McCleave 1973; [2] ASSRT 2007
Kennebec River (ME)	Up to the Lockwood Dam (RKM 102), also includes the entirety of the Back and Sasanoa Rivers	eggs, larvae, YOY, juveniles, subadults, and adults	Spawning - May-August[4]; documented via captures of spawning condition adults and larvae (RKM 52.8-76)[1][4]; potentially occurs as far upstream as the Lockwood Dam in the restored spawning habitat (RKM 87-102)[4] Rearing - ELS have been documented near the spawning grounds[4]; juveniles have also been documented in the river[3] Foraging - assumed to occur wherever suitable forage is present (documented from RKM 0-42)[4]; also documented in the Sasanoa and Back Rivers[2][3]	[1] Wippelhauser 2011; [2] Wippelhauser 2012; [3] Wippelhauser and Squiers 2015; [4] Wippelhauser et al. 2017

Androscoggin River (ME)	Up to the Brunswick Dam (RKM 8.4)	eggs, larvae, YOY, juveniles, subadults, and adults	Spawning - May-August[2]; capture of a ripe male[2] in the summer below the Brunswick Dam (RKM 7.7-8.4)[1] indicates that spawning is likely occurring Rearing - Juveniles likely present throughout the river year-round Foraging - assumed to occur wherever suitable forage is present	[1] Wippelhauser and Squiers 2015; [2] Wippelhauser et al. 2017
Presumpscot River (ME)	Up to Presumpscot Falls (RKM 3)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present; an Atlantic sturgeon was caught below Presumpscot Falls[1]	[1] Yoder et al. 2009
Scarborough River (ME)	Throughout the entire river	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Wippelhauser et al. 2017
Saco River (ME)	Up to Cataract Dam (RKM 10)	juveniles, subadults, and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Novak et al. 2017
Piscataqua River Watershed including Salmon Falls and Cocheco tributaries (NH)	Up to the confluence with the Salmon Falls and Cocheco Rivers (RKM 15) and including Great Bay; Salmon Falls River – up to the Route 4/South Berswick Dam (RKM 7); Cocheco River – up to the Cocheco Falls Dam (RKM 6)	subadults and adults (eggs, larvae, YOY, and juveniles possible)	Spawning - potentially occurs in the Salmon Falls and Cocheco rivers based on the presence of features necessary to support reproduction and recruitment as well as the capture of an adult female Atlantic sturgeon in spawning condition in 1990[1][3] Rearing - Juveniles potentially present throughout the river year-round Foraging - used seasonally for foraging and resting during spring and fall migrations; tagging data indicates that use by individual sturgeon is limited to days or weeks[2]	[1] ASSRT 2007; [2] Kieffer and Trefry 2017 pers. comm.; [3] NMFS 2017
Merrimack River (MA)	Up to the Essex Dam (RKM 46); often found around the lower islands reach (RKM 3-12) and the mouth of the river	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Spawning - potentially occurs due to the presence of features necessary to support reproduction and recruitment[4] Rearing - data suggests it is used as a nursery area for juveniles[3] Foraging - mouth of the river and the lower islands area (RKM 0-12); subadults use RKM 7-12[1][2]	[1] Kieffer and Kynard 1993; [2] Kynard et al. 2000; [3] ASSRT 2007; [4] NMFS 2017
Charles River (MA)	Up to Charles River Locks (RKM 5.5)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Boston.com February 20, 2012 (http://archive.boston.com/news/science/articles/2012/02/20/from_depths_of_the_charles_an_ancient_species/)
North River (MA)	Up to Dam #1 on the Indian Head Reservoir at Luddam's Ford (RKM 21)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present; an adult was found in the North River, 4 miles from the mouth in 2012[1]	[1] The Patriot Ledger June 1, 2012 (http://www.patriotledger.com/article/20120601/NEWS/306019786)
Taunton River (MA)	Up to the convergence of the Town River and Matfield River	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1][2]	[1] Buerkett and Kynard 1993; [2] ASSRT 2007

Narragansett Bay (RI)	Throughout the bay	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] ASSRT 2007
Thames River (CT)	Up to the Yantic Dam in the Yantic River and up to the Greenville Dam in the Shetucket River	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1][2][3]	[1] Whitworth 1996; [2] ASSRT 2007; [3] The Day June 17, 2016 (http://www.theday.com/article/20160617/NWS01/160619212)
Connecticut River (CT/MA)	Up to the Holyoke Dam (RKM 140); mainly stay in the summer range of the salt wedge (RKM 0-26)	eggs, larvae, YOY, juveniles, subadults, and adults	Spawning/Rearing - captures of pre-migratory juvenile sturgeon in the river strongly suggests that spawning is occurring in this river[3] Foraging - assumed to occur wherever suitable forage is present[1][2]	[1] Savoy and Shake 1993; [2] Savoy and Pacileo 2003; [3] Savoy et al. 2017
Quinnipiac River (CT)	Up to bridge at Quinnipiac Street and River Road in Wallingford (RKM 27)	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Hartford Courant September 30, 1994 (http://articles.courant.com/1994-09-30/news/9409300111_1_sturgeon-on-fish-story-giant-fish)
Housatonic River (CT)	Up to the Derby Dam (RKM 23.5)	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Spawning - not documented; potentially occurs due to the presence of features necessary to support reproduction and recruitment[3] Foraging - assumed to occur wherever suitable forage is present[1][2]	[1] Whitworth 1996; [2] ASSRT 2007; [3] NMFS 2017
Long Island Sound (NY/CT)	All of Long Island Sound	subadults and adults	Foraging - where suitable forage is present; 85% of Atlantic sturgeon caught in Long Island Sound are over mud/transitional bottoms of 27-37 meters deep in the central basin[1]	[1] Savoy and Pacileo 2003
East River (NY)	full length of the East River	subadults and adults	Migration - subadults and adults have been documented using this waterbody to move between the Hudson River and western Long Island Sound[1][2] Foraging - assumed to occur wherever suitable forage is present, but forage is limited[1][2]	[1] Savoy and Pacileo 2003; [2] Tomich et al. 2014

Hudson River (NY/NJ)	up to the Troy Dam (approximately RKM 246)	eggs, larvae, YOY, juveniles, subadults, and adults	<p>Spawning - late April through August[1][6], notably around Hyde Park (RKM 129-135) [4] and Catskill (RKM 182)[2], as well as throughout RKM 113-184[4]; evidence strongly suggests that there is also spawning further upstream of RKM 193[6]</p> <p>Rearing - larvae and YOY - RKM 60-148[1][3]; remain upstream of the salt wedge[2]; juveniles - RKM 63-140[1][3]; utilize the estuary up through Kingston (RKM 148)[1]; Newburgh and Haverstraw Bays (RKM 55-61) are areas of known juvenile concentrations[5]</p> <p>Foraging - assumed to occur wherever suitable forage is present</p> <p>Overwintering - juveniles - RKM 19-74 from fall through winter[1]; some juveniles were recorded in Esopus Meadows (RKM 134)[3]</p>	[1] Dovel and Berggren 1983; [2] Van Eenennaam et al. 1996; [3] Bain 1997; [4] Bain et al. 1998; [5] Sweka et al. 2006; [6] Dewayne Fox, DSU, and Kathy Hattala, NYDEC, personal communication April 2014
Delaware River (NJ/DE/PA)	Up to the fall line near Trenton, NJ (RKM 211)	eggs, larvae, YOY, juveniles, subadults, and adults	<p>Spawning - documented and/or potential spawning habitat in April through July from the Marcus Hook Bar to the fall line at Trenton, NJ (RKM 125-211)[2][3][5]</p> <p>Rearing - YOY/juveniles - Deepwater to Roebing, NJ (RKM 105-199)[4] with most of the detections in the Marcus Hook Area (RKM 127-129)[7]</p> <p>Foraging - where suitable forage and appropriate habitat conditions are present</p> <p>Overwintering - juveniles - move between lower (RKM 100-150) and upper (RKM 185-199) tidal areas[6]; may overwinter in tidal fresh water[1]</p>	[1] Lazzari et al. 1986; [2] Simpson and Fox 2006; [3] Simpson 2008; [4] Calvo et al. 2010; [5] Breece et al. 2013; [6] Stetzar et al. 2015; [7] Hale et al. 2016
C&D Canal (DE/MD)	Used at least occasionally to move from Chesapeake Bay to the Delaware River	juveniles, subadults, and adults	Foraging - Assumed to occur in areas with suitable forage [1][2]	[1] Simpson 2008; [2] Brundage and O'Herron 2009
Chesapeake Bay (MD/VA)	Throughout the bay typically in spring through fall	juveniles, subadults, and adults	<p>Migration - April-November for adults[5] and subadults[1]; year round for juveniles[2][3]; these lifestages wander among coastal and estuarine habitats[5]</p> <p>Foraging - typically in areas where suitable forage and appropriate habitat conditions are present; typically tidally influenced flats and mud, sand and mixed cobble substrates[4]</p>	[1] Dovel and Berggren 1983; [2] Secor et al. 2000; [3] Welsh et al. 2002; [4] Stein et al. 2004; [5] Horne and Stence 2016
Susquehanna River (MD)	Up to the Conowingo Dam (RKM 16)	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Foraging - where suitable forage and appropriate habitat conditions are present [1]	[1] ASSRT 2007

Choptank River (MD)	Range not confirmed, but they have been documented in this river (likely up to the dam at RKM 102)	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Foraging - where suitable forage and appropriate habitat conditions are present [2] Spawning - not documented, but a gravid female was caught at the mouth of the river near Tilghman Island[1]	[1] The Baltimore Sun June 13, 2007 (http://articles.baltimoresun.com/2007-06-13/news/0706130110_1_sturgeon-chesapeake-bay-university-of-maryland); [2] ASSRT 2007
Nanticoke River, including Marshyhope Creek and Broad Creek tributaries (MD)	Range not confirmed, but they have been documented in the Nanticoke River up to the mouth of Broad Creek; they have also been found up to Federalsburg, MD in Marshyhope Creek and up to Laurel, DE in Broad Creek[2]	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Spawning - potential for spawning due to the presence of features necessary to support reproduction and recruitment in one of its tributaries (in Marshyhope Creek, spawn ready adults have been captured)[2] Rearing - may be used as a nursery for juveniles[1] Foraging - assumed to occur wherever suitable forage is present[1]	[1] ASSRT 2007; [2] Horne and Stence 2016
Pocomoke River (MD)	To the limit of tidal influence where Whiton Crossing Road crosses the river	subadults and adults	Foraging - assumed to occur wherever suitable forage is present[1]	[1] Horne and Stence 2016
Potomac River (MD/VA)	Up to Little Falls Dam (RKM 189)	juveniles, subadults, and adults (potentially eggs, larvae, and YOY)	Spawning - potentially occurs as three small juveniles[3] and a large mature female[2] have been captured and due to the presence of features necessary to support reproduction and recruitment[1][2] Rearing - three juveniles have been captured[3] Foraging - where suitable forage and appropriate habitat conditions are present [2]	[1] Niklitschek and Secor 2005; [2] ASSRT 2007; [3] Kynard et al. 2007
Rappahannock River (VA)	Range not confirmed, but they have been documented in this river (likely throughout the entire river)	subadults and adults (potentially eggs, larvae, YOY, and juveniles)	Spawning - potentially occurs due to the capture of a male sturgeon in spawning condition in September 2015 and the presence of features necessary to support reproduction and recruitment[1][3] Rearing - may be used as a nursery for juveniles[2] Foraging - where suitable forage and appropriate habitat conditions are present [2]	[1] Bushnoe et al. 2005; [2] ASSRT 2007; [3] NMFS 2016

York River, including Mattaponi and Pamunkey River tributaries (VA)	York River - up to confluence with the Mattaponi and Pamunkey Rivers (RKM 55); Pamunkey River - up to RKM 150; Mattaponi River - up to RKM 120	eggs, larvae, YOY, juveniles, subadults, and adults	<p>Spawning - potential for fall spawning due to the presence of features necessary to support reproduction in its tributaries (Mattaponi and Pamunkey Rivers) and recruitment in both the York River and its tributaries[1]; documented in the Pamunkey River through the capture of an adult female sturgeon in post-spawning condition in the fall and the presence of features necessary to support reproduction and recruitment[3]; may occur in the Pamunkey River as far upstream as RKM 150[4]</p> <p>Rearing - in freshwater reaches downstream of spawning sites; four age-0 Atlantic sturgeon were captured in the York River[2]; Juveniles likely present throughout the river year-round</p> <p>Foraging - where suitable forage and appropriate habitat conditions are present [1]</p>	[1] Bushnoe et al. 2005; [2] Balazik et al. 2012; [3] Hager et al. 2014; [4] Kahn et al. 2014
James River (VA)	Up to Boshers Dam (RKM 182.3)	eggs, larvae, YOY, juveniles, subadults, and adults	<p>Staging - likely done by fall spawners, during summer and fall in brackish water before and after the fall spawn (RKM 22-107)[4]</p> <p>Spawning - both a spring (likely at RKM 90-95)[4] and fall spawning event (likely between RKM 105 and the fall line near Richmond, VA at RKM 155)[3]</p> <p>Rearing - freshwater reaches downstream of spawning locations[1][2]; Juveniles likely present throughout the river year-round</p> <p>Foraging - where suitable forage and appropriate habitat conditions are present [2]</p>	[1] Florida Museum of Natural History 2004; [2] ASSRT 2007; [3] Balazik et al. 2012; [4] Balazik and Musick 2015
Appomattox River (VA), tributary of the James River	Range not confirmed, but they have been documented in this river (likely up to Battersea Dam, RKM 21)	subadults and adults	<p>Foraging - where suitable forage and appropriate habitat conditions are present [1]</p>	[1] The Hopewell News 2013

Listing rules: 77 FR 5880 and 77 FR 5914, February 6, 2012; **Recovery plan:** none published

APPENDIX G

Copy of City of Boston Dewatering Permit Application



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

19 April 2019
File No. 129204-009

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
125-131 Sumner Street
East Boston, Massachusetts
RTN 3-33981 and 3-34165

Dear Mr. Tuttle:

On behalf of our client, WinnDevelopment, this letter submits the Dewatering Discharge Permit Application in support of the building construction activities at the subject site located at the 125-131 Sumner Street property (hereafter referred to as the "Site") in East Boston, Massachusetts (Figure 1).

Dewatering is necessary to enable construction excavations in-the-dry and is anticipated to begin in May 2019 and continue for up to 18 months. Prior to discharge, collected water will be routed through a sedimentation tank and 5-micron bag filter at minimum to remove suspended solids and un-dissolved chemical constituents. The proposed dewatering discharge route and BWSC outfall locations are shown on Figure 2.

A submittal was provided to USEPA 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.

A handwritten signature in blue ink, reading "M Cronan", is placed over a light blue rectangular background.

Michael J Cronan, LSP (MA)
Senior Project Manager | Associate

Attachments:

- Dewatering Discharge Permit Application
- Figure 1 – Project Locus
- Figure 2 – Proposed Discharge Route and Outfall Location Plan
- Copy of NPDES RGP Permit Application



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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Cranshaw Construction Address: 2310 Washington Street, Newton Lower Falls, MA 02462

Phone Number: 617-559-5216 Fax number: _____

Contact person name: Travis Smith Title: _____

Cell number: 617-559-5216 Email address: tsmith@cranshaw.com

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

Owner's Information (if different from above):

Owner of property being dewatered: _____

Owner's mailing address: _____ Phone number: _____

Location of Discharge & Proposed Treatment System(s):

Street number and name: 125-131 Summer Street Neighborhood East Boston

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

Sedimentation Tank, Bag Filter, and any other components as necessary

Describe Proposed Pre-Treatment System(s): (refer to attached RGP Application)

BWSC Outfall No. "Clippership Lane Outfall" Receiving Waters Boston Inner Harbor

Refer to attached email

Temporary Discharges (Provide Anticipated Dates of Discharge): From May 2019 To November 2020

<input type="checkbox"/> Groundwater Remediation	<input type="checkbox"/> Tank Removal/Installation	<input checked="" type="checkbox"/> Foundation Excavation
<input type="checkbox"/> Utility/Manhole Pumping	<input type="checkbox"/> Test Pipe	<input checked="" type="checkbox"/> Trench Excavation
<input checked="" type="checkbox"/> Accumulated Surface Water	<input type="checkbox"/> Hydrogeologic Testing	<input type="checkbox"/> Other _____

Permanent Discharges

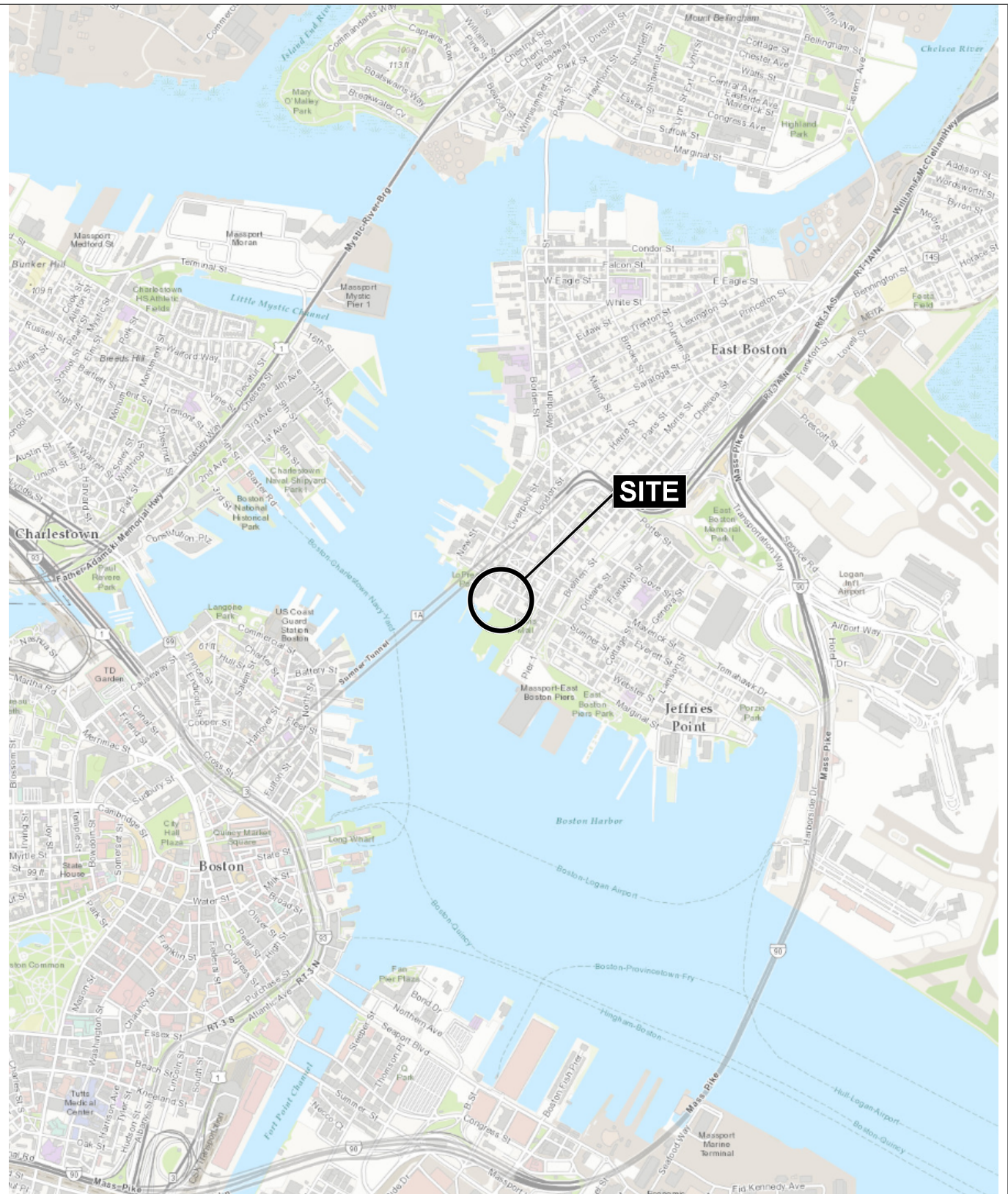
<input type="checkbox"/> Foundation Drainage	<input type="checkbox"/> Crawl Space/Footing Drain
<input type="checkbox"/> Accumulated Surface Water	<input type="checkbox"/> Non-contact/Uncontaminated Cooling
<input type="checkbox"/> Non-contact/Uncontaminated Process	<input type="checkbox"/> Other; _____

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

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

Signature of Authorized Representative for Property Owner: Travis Smith

Date: 4/5/19



MAP SOURCE: ESRI

SITE COORDINATES: 42°22'9"N, 71°2'29"W

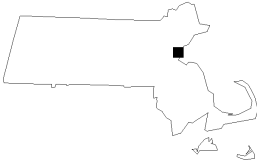
**HALEY
ALDRICH**


CLIPPERSHIP APARTMENTS
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
APRIL 2019

FIGURE 1





Nitsch Engineering

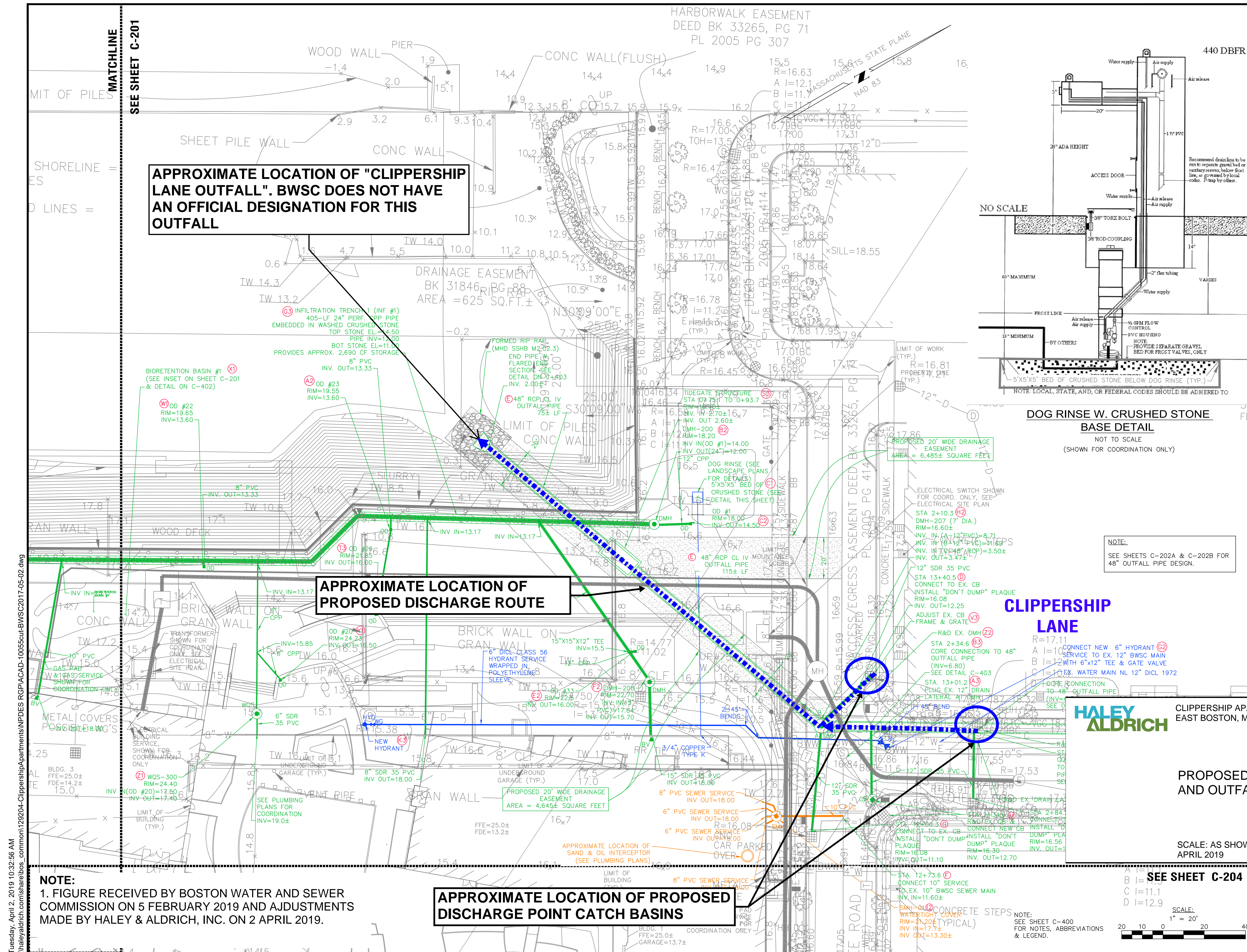
Architect of Record:

Key Plan:

CLIPPERSHIP
WHARF

PROPOSED DISCHARGE ROUTE AND OUTFALL LOCATION PLAN

C-202



Howard, Lindsey

From: Howard, Lindsey
Sent: Wednesday, April 3, 2019 11:20 AM
To: Howard, Lindsey
Subject: FW: BWSC Map Request - Clippership Apts
Attachments: ACAD-10055cut-BWSC2017-05-02.dwg

From: Tuttle Matthew P. <tuttlemp@BWSC.ORG>
Sent: Tuesday, February 05, 2019 2:57 PM
To: Butwill, Samantha <SButwill@haleyaldrich.com>
Subject: RE: BWSC Map Request - Clippership Apts

Samantha,

All those drain inlets make their way to the new outfall just south of the map you sent. We don't have an as built or even a designation for that outfall yet but the work is completed. The CAD of the proposed work is attached.

From: Butwill, Samantha <SButwill@haleyaldrich.com>
Sent: Monday, February 4, 2019 10:00 AM
To: Tuttle Matthew P. <tuttlemp@BWSC.ORG>
Subject: RE: BWSC Map Request - Clippership Apts

Good morning Matt,

Any update on the existing drainage for this project?

Thanks,
Samantha

Samantha Butwill, E.I.T.
Engineer

Haley & Aldrich, Inc.
465 Medford Street, Suite 2200
Boston, MA 02129
T: 617.886.7332
C: 860.459.2676

From: Tuttle Matthew P. <tuttlemp@BWSC.ORG>
Sent: Thursday, January 31, 2019 3:19 PM
To: Butwill, Samantha <SButwill@haleyaldrich.com>
Subject: RE: BWSC Map Request - Clippership Apts

Samantha,

A lot of the drainage out there is changing or has changed recently. Our base maps won't be updated to show what is existing. I believe the only catch basin going to an outfall is the southernmost one highlighted on the map you sent. I will check with the engineer who reviewed the previous plans in that area to see what the updated situation is and let you know.

Thanks,
Matt

From: Butwill, Samantha <SButwill@haleyaldrich.com>
Sent: Tuesday, January 29, 2019 8:55 AM
To: Tuttle Matthew P. <tuttlemp@BWSC.ORG>
Subject: BWSC Map Request - Clippership Apts

Hi Matt –

I am working on a project in East Boston and preparing a construction dewatering permit. Would you mind helping find BWSC maps for this area and potential discharge routes?

Site is located near the Maverick Transit Stop at 125-131 Sumner Street, East Boston. I've attached a figure with potential catch basins for discharge.

Let me know if you have questions. Thank you for your help

Thanks,
Sam

Samantha Butwill, E.I.T.
Engineer

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465 Medford Street, Suite 2200
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C: 860.459.2676