D&M Civil, Inc.
30 Log Bridge Road
Building 100S, Suite 102
Middleton, MA 01949

T. 978.739.4414
F. 978.739.2332

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square, Suite 100 (OEP06-01)
Boston, MA 02109-3912

March 3, 2020

Re: Notice of Intent for the Remediation General Permit
Temporary Construction Dewatering for Site Redevelopment
144 Addison Street, East Boston, Massachusetts

Dear Sir/Madam:

On behalf of 144 Addison St, LLC, D&M Civil (D&M) is submitting this Notice of Intent (NOI) to the U.S. Environmental Protection Agency (U.S. EPA) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) MAG910000 for a portion of 144 Addison Street in East Boston, Massachusetts (the Site). This letter and supporting documentation were prepared in accordance with the U.S. EPA guidance for construction dewatering under the RGP program. D&M is the general contractor for the project and will have responsibility of the subcontractors performing the dewatering activities at the Site. Subcontractors working for D&M on the project will be required to meet the requirements of this NOI and the RGP. The location of the Site and the discharge location into the Chelsea River via a storm drain outfall are shown on Figure 1.

The Site is an approximately 3-acre eastern portion of the property identified by the City of Boston Assessing Department as 144 Addison Street, formerly referred to as 175 McClellan Highway, in East Boston, Massachusetts and is shown on Figure 1. The Site consists of a paved surface parking lot with a small guard house and is currently vacant. Most recently the Site was used as a rental car parking lot operated by Avis Rent-a-Car.

Redevelopment activities at the Site include excavation of urban fill and natural soils to support the construction of two (2) multi-story residential buildings, and the installation of new subgrade utility systems. The Site and proposed redevelopment plans are depicted on Figure 2. During soil pre-characterization activities performed by Sanborn Head in January 2020 to support the proposed redevelopment of the Site, several polycyclic aromatic hydrocarbons (PAHs), lead, arsenic, antimony, barium, zinc, and total petroleum hydrocarbons (TPH) were identified in fill soil samples in excess of the applicable Massachusetts Contingency Plan (MCP) Reportable Concentrations for S-1 soils (RCS-1s). On February 19, 2020 a Release Notification Form (RNF) was submitted to the Massachusetts Department of Environmental Protection (DEP) for the 120-day Reporting Condition, and DEP assigned Release Tracking Number (RTN) 3-36155 for the release to soil.

The Site redevelopment work will be performed under a Release Abatement Measure (RAM) Plan for management under the MCP of contaminated soil generated during construction activities. Groundwater sampling was performed in several wells across the Site as part of

assessment activities and contaminates in groundwater were not detected at concentrations above applicable MCP Reportable Concentrations.

The earthwork to prepare the Site for redevelopment will require excavation of soil to approximately 1 to 12 feet below ground surface (bgs) depending on the location. Groundwater is anticipated to be encountered between approximately 0.5 and 3 feet bgs. Excavations will be sloped to achieve the proposed depths and groundwater that flows into the excavations during construction activities that requires dewatering and cannot be discharged back into the ground will be treated prior to discharge to an existing storm drain such that the discharged effluent meets the effluent limitations established by NPDES Part 2.1 and Appendix V of the RGP Application. Figure 3 includes a schematic of the proposed dewatering treatment system. The completed NOI for the Remediation General Permit form is included as Appendix A.

On January 22 and 23, 2020, Sanborn Head & Associates (Sanborn), the project's environmental consultant, collected four samples to characterize the receiving and source waters in support of this NOI. The source water samples were collected from three existing groundwater monitoring wells, identified as SH-101W through SH-103W. The receiving water was collected from the Chelsea River adjacent to and downstream from the proposed outfall discharge location. The groundwater samples were collected from dedicated, disposable bailers and were submitted to Alpha Analytical Laboratory (Alpha) of Westborough, MA for analysis for the 2017 NPDES suite of parameters. Monitoring well SH-102W was resampled for volatile organic compounds (VOCs) due to headspace observed by the laboratory in the sample vials upon receipt.

The receiving surface water discharge point for the treatment system will be the Chelsea River. Information regarding the receiving water was collected from the Massachusetts Year 2016 Integrated List of Waters which is included in Appendix B. Dilution calculation information including correspondence with DEP is included in Appendix C. Analytical laboratory data for on-Site and surface water sampling is summarized in Tables 1 and 2, respectively, and analytical data reports are included in Appendix D. Municipal correspondence in the form of a Dewatering Discharge Permit application is provided in Appendix E, which will be submitted to the Boston Water and Sewer Commission concurrently with the submittal of this NOI. The Dewatering Discharge Permit indicates a discharge into the Chelsea River, via a municipal storm sewer system. Notification for this permit has been provided to the Owner of the discharge system, and a copy of the notification/application is included in Appendix E.

According to the Information for Planning and Conservation (IPaC), available through the U.S. Fish and Wildlife Service (FWS) website, the excavation activities will not impact Areas of Critical Environmental Concern (ACEC) or Habitats of Rare Wetland Wildlife. A letter from the FWS is included in Appendix F. An email requesting information regarding federally listed species in the project discharge area of the Chelsea River was sent to the National Oceanic and Atmospheric Administration (NOAA), and their response, included in Appendix F, states that no listed species are known to occur in the Chelsea River in the area of discharge.

A review of the National Register of Historic Places within East Boston was performed. Based on the review, the discharge and discharge-related activities do not have the potential to cause effects on historic properties. A list of the properties reviewed is included in Appendix G.

Thank you for your consideration of this NOI/Permit. Please feel free to contact us if you wish to discuss the information contained in this application, or if any additional information is needed.

Very truly yours,

Andrew Green
D&M Civil
(978) 766-5679

Encl. Table 1 – Summary of Groundwater Quality Data
Table 2 – Summary of Surface Water Quality Data
Figure 1 – Locus Plan
Figure 2 – Site Plan
Figure 3 – Proposed Groundwater Treatment Schematic
Appendix A – Notice of Intent Form
Appendix B – Selected Massachusetts Category 5 Waters
Appendix C – Chelsea River Dilution Calculations
Appendix D – Analytical Data Reports
Appendix E – Municipal Correspondence
Appendix F – Federal Correspondence
Appendix G – National Register of Historic Places – Boston and Chelsea, MA

cc: City of Boston Board of Health
DEP Bureau of Water Resources
Mr. Stan Sadkowski, P.E. ~ Sanborn, Head & Associates, Inc.

TABLES

Table 1
Summary of Groundwater Quality Data
144 Addison Street, East Boston, MA

LOCATION	MCP	NPDES TBEL	Units	SH-101W	SH-102W	SH-102WR	SH-103W	Maximum	Average
SAMPLING DATE	RCGW-2			1/22/2020	1/22/2020	1/23/2020	1/23/2020	Detection	Detection
Anions by Ion Chromatography									
Chloride	NS	Monitor Only	ug/L	**387,000**	**916,000**	-	**2,660,000**	**2,660,000**	**1,321,000**
General Chemistry									
Chromium, Trivalent	600	323	ug/L	<10	<10	-	<10	BDL	BDL
Solids, Total Suspended	NS	30	mg/L	**170**	**460**	-	**150**	**460**	**260**
Cyanide, Total	30	178,000	ug/L	<5.0	<5.0	-	<5.0	BDL	BDL
Chlorine, Total Residual	NS	200	ug/L	<20	<20	-	<20	BDL	BDL
Nitrogen, Ammonia	NS	Monitor Only	ug/L	**1,800**	**14,500**	-	**25,200**	**25,200**	**13,833.33**
TPH, SGT-HEM	5,000	5,000	ug/L	<4,000	<4,000	-	<4,000	BDL	BDL
Phenolics, Total	NS	1,080	ug/L	<30	<30	-	<30	BDL	BDL
Chromium, Hexavalent	300	323	ug/L	<10	<10	-	**27**	**27**	**27**
pH			SU	7	7	-	**9**	**9**	**8**
Microextractables by GC									
1,2-Dibromoethane	2	0.05	ug/L	<0.01	-	<0.01	<0.01	BDL	BDL
Polychlorinated Biphenyls by GC									
Total PCBs	5	0.000064	ug/L	BDL	BDL	-	BDL	BDL	BDL
Semivolatile Organics by GC/MS									
Total Phthalates	NS	190	ug/L	BDL	BDL	-	BDL	BDL	BDL
Semivolatile Organics by GC/MS-SIM									
Acenaphthene	10,000	See "Total Group 2 PAHs"	ug/L	<0.1	**0.82**	-	<0.1	**0.82**	**0.82**
Fluoranthene	200	See "Total Group 2 PAHs"	ug/L	**0.22**	**0.23**	-	<0.1	**0.23**	**0.23**
Naphthalene	700	20	ug/L	<0.1	<0.1	-	**0.62**	**0.62**	**0.62**
Benzo(a)anthracene	1,000	See "Total Group 1 PAHs"	ug/L	**0.12**	<0.1	-	<0.1	**0.12**	**0.12**
Benzo(a)pyrene	500	See "Total Group 1 PAHs"	ug/L	**0.11**	<0.1	-	<0.1	**0.11**	**0.11**
Benzo(b)fluoranthene	400	See "Total Group 1 PAHs"	ug/L	**0.16**	<0.1	-	<0.1	**0.16**	**0.16**
Chrysene	70	See "Total Group 1 PAHs"	ug/L	<0.1	<0.1	-	<0.1	**BDL**	**BDL**
Anthracene	30	See "Total Group 2 PAHs"	ug/L	<0.1	**0.14**	-	**0.28**	**0.28**	**0.21**
Fluorene	40	See "Total Group 2 PAHs"	ug/L	<0.1	**0.44**	-	<0.1	**0.44**	**0.44**
Phenanthrene	10,000	See "Total Group 2 PAHs"	ug/L	**0.12**	**0.85**	-	**0.90**	**0.90**	**0.62**
Pyrene	20	See "Total Group 2 PAHs"	ug/L	**0.2**	**0.19**	-	<0.1	**0.20**	**0.20**
Total Group 1 PAHs	NS	1.0	ug/L	**0.39**	BDL (0.1)	-	BDL (0.1)	**0.39**	**0.39**
Total Group 2 PAHs	NS	100	ug/L	**0.54**	**2.67**	-	**1.18**	**2.67**	**1.46**
Total SVOCs	NS	NS	ug/L	**0.93**	**2.67**	-	**1.8**	**2.67**	**1.80**
Total Metals									
Antimony, Total	8,000	206	ug/L	<4.0	<4.0	-	<40	BDL	BDL
Arsenic, Total	900	104	ug/L	**4.04**	**6.4**	-	<10	**6.40**	**5.22**
Cadmium, Total	4	10.2	ug/L	**0.26**	**0.33**	-	<2.0	**0.33**	**0.30**
Chromium, Total	300	323	ug/L	**1.95**	**6.21**	-	**10.75**	**10.75**	**6.30**
Copper, Total	100,000	242	ug/L	**1.45**	**17.46**	-	<10	**17.46**	**9.46**
Iron, Total	NS	5,000	ug/L	**44,900**	**93,400**	-	**5,230**	**93400.00**	**47843.33**
Lead, Total	10	160	ug/L	**118.1**	**189.7**	-	**18.48**	**189.70**	**108.76**
Mercury, Total	20	0.739	ug/L	<0.2	<0.2	-	<0.2	BDL	BDL
Nickel, Total	200	1450	ug/L	**3.29**	**3.89**	-	<20	**3.89**	**3.59**
Selenium, Total	100	235.8	ug/L	<5.0	<5.0	-	<50	BDL	BDL
Silver, Total	7	35.1	ug/L	<0.4	<0.4	-	<4.0	BDL	BDL
Zinc, Total	900	420	ug/L	**414**	**421**	-	**150.8**	**421.00**	**328.60**
Dissolved Metals									
Antimony, Dissolved	8,000	206	ug/L	<4.0	<4.0	-	<40	BDL	BDL
Arsenic, Dissolved	900	104	ug/L	**3.7**	**3.5**	-	<10	**3.70**	**3.60**
Cadmium, Dissolved	4	10.2	ug/L	<0.2	<0.2	-	<2.0	BDL	BDL
Chromium, Dissolved	300	323	ug/L	<1.0	**2.3**	-	<10	**2.30**	**2.30**
Copper, Dissolved	100,000	242	ug/L	**3.0**	**3.1**	-	<10	**3.10**	**3.05**
Iron, Dissolved	NS	5,000	ug/L	**42,000**	**88,400**	-	**494**	**88400**	**43631.33**
Lead, Dissolved	10	160	ug/L	**22.7**	**10.2**	-	<10	**22.70**	**16.45**
Mercury, Dissolved	20	0.739	ug/L	<0.2	<0.2	-	<0.2	BDL	BDL
Nickel, Dissolved	200	1,450	ug/L	**2.2**	<2.0	-	<20	**2.20**	**2.20**
Selenium, Dissolved	100	235.8	ug/L	<5.0	<5.0	-	<50	BDL	BDL
Silver, Dissolved	7	35.1	ug/L	<0.4	<0.4	-	<4.0	BDL	BDL
Zinc, Dissolved	900	420	ug/L	**52.8**	**21.4**	-	<100	**52.80**	**37.10**
Volatile Organics by GC/MS									
Total BTEX	NS	100	ug/L	BDL (2.0)	-	BDL (1.0)	BDL (1.0)	BDL	BDL
Volatile Organics by GC/MS-SIM									
1,4-Dioxane	6,000	200	ug/L	<100	-	<50	<50	BDL	BDL
Ethanol by EPA 1671									
Ethanol	NS	Report	ug/L	<20,000	<20,000	-	<20,000	BDL	BDL

Notes:
1. Samples were collected by Sanborn, Head & Associates, Inc. (Sanborn Head) on the indicated dates and were analyzed by Alpha Analytical Laboratories, Inc. of Westborough, MA and Teklab, Inc. of Collinsville, IL.
2. Average concentrations for each analyte were calculated as an arithmetic average of detected concentrations and half of the detection limits where analytes were not detected.
3. Bolded values indicate detections above the laboratory reporting limits.
4. Abbreviations:
NPDES = National Pollutant Discharge Elimination System
TBEL = Technology based effluent limitation
WQBEL = Water quality based effluent limitation
MCP = Massachusetts Continentcy Plan
RCGW-2 = MCP Reportable Concentration for groundwater category GW-2.
ug/L = micrograms per liter
mg/L = milligrams per liter
"<" indicates the analyte was not detected above the laboratory reporting limit shown
BDL = below detection limit
BDL (X.X) = total value below detection limit of X.X
NS = No Standard
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

Table 2
Summary of Surface Water Quality Data
144 Addison Street, East Boston, MA

LOCATION	MCP	NPDES	NPDES	Units	SW-1	Maximum	Average
SAMPLING DATE	RCGW-2	TBEL	WQBEL		1/23/2020	Detection	Detection
WATER BODY					Chelsea River		
Anions by Ion Chromatography							
Chloride	NS	Monitor Only	Monitor Only	ug/L	**17,400,000**	**17,400,000**	**17,400,000**
General Chemistry							
Hardness				mg/L	4040	4,040	4,040
pH				SU	7.8	8	8
Chromium, Trivalent	600	323	1782.5	ug/L	<20	BDL	BDL
Solids, Total Suspended	NS	30		mg/L	**7,400**	**7,400**	**7,400**
Cyanide, Total	30	178,000	5.2	ug/L	<5.0	BDL	BDL
Chlorine, Total Residual	NS	200	**11**	ug/L	<20	BDL	BDL
Nitrogen, Ammonia	NS	Monitor Only	Monitor Only	ug/L	<75	BDL	BDL
TPH, SGT-HEM	5,000	5,000		ug/L	<4,400	BDL	BDL
Phenolics, Total	NS	1,080	300	ug/L	<30	BDL	BDL
Chromium, Hexavalent	300	323	**11.4**	ug/L	<10	BDL	BDL
Microextractables by GC							
1,2-Dibromoethane	2	0.05		ug/L	<0.01	BDL	BDL
Polychlorinated Biphenyls by GC							
Total PCBs	5	0.000064	0.5	ug/L	BDL	BDL	BDL
Semivolatile Organics by GC/MS							
Total Phthalates	NS	190		ug/L	BDL	BDL	BDL
Semivolatile Organics by GC/MS-SIM							
Fluoranthene	200	See "Total Group 2 PAHs"		ug/L	**0.22**	**0.22**	**0.22**
Benzo(a)anthracene	1,000	See "Total Group 1 PAHs"	**0.0038**	ug/L	**0.18**	**0.18**	**0.18**
Benzo(b)fluoranthene	400	See "Total Group 1 PAHs"	**0.0038**	ug/L	**0.12**	**0.12**	**0.12**
Chrysene	70	See "Total Group 1 PAHs"	**0.0038**	ug/L	**0.10**	**0.10**	**0.10**
Phenanthrene	10,000	See "Total Group 2 PAHs"		ug/L	**0.16**	**0.16**	**0.16**
Pyrene	20	See "Total Group 2 PAHs"		ug/L	**0.19**	**0.19**	**0.19**
Total Group 1 PAHs	NS	1.0		ug/L	**0.4**	**0.40**	**0.40**
Total Group 2 PAHs	NS	100		ug/L	**0.57**	**0.57**	**0.57**
Total SVOCs	NS	NS		ug/L	**0.97**	**0.97**	**0.97**
Total Metals							
Antimony, Total	8,000	206	640	ug/L	<80	BDL	BDL
Arsenic, Total	900	104	10	ug/L	<20	BDL	BDL
Cadmium, Total	4	10.2	4.1931	ug/L	<4.0	BDL	BDL
Chromium, Total	300	323	896.95	ug/L	<20	BDL	BDL
Copper, Total	100,000	242	220	ug/L	<20	BDL	BDL
Iron, Total	NS	5,000	**1000**	ug/L	**89**	**89.00**	**89.00**
Lead, Total	10	160	352.83	ug/L	<20	BDL	BDL
Mercury, Total	20	0.739	0.91	ug/L	<0.2	BDL	BDL
Nickel, Total	200	1450	1192.2	ug/L	<40	BDL	BDL
Selenium, Total	100	235.8	5	ug/L	<100	BDL	BDL
Silver, Total	7	35.1	2192.7	ug/L	<8	BDL	BDL
Zinc, Total	900	420	2751.7	ug/L	<200	BDL	BDL
Dissolved Metals							
Antimony, Dissolved	8,000	206		ug/L	<80	BDL	BDL
Arsenic, Dissolved	900	104		ug/L	<20	BDL	BDL
Cadmium, Dissolved	4	10.2		ug/L	<4.0	BDL	BDL
Chromium, Dissolved	300	323		ug/L	<20	BDL	BDL
Copper, Dissolved	100,000	242		ug/L	<20	BDL	BDL
Iron, Dissolved	NS	5,000		ug/L	<50	BDL	BDL
Lead, Dissolved	10	160		ug/L	<20	BDL	BDL
Mercury, Dissolved	20	0.739		ug/L	<0.2	BDL	BDL
Nickel, Dissolved	200	1,450		ug/L	<40	BDL	BDL
Selenium, Dissolved	100	235.8		ug/L	<100	BDL	BDL
Silver, Dissolved	7	35.1		ug/L	<8.0	BDL	BDL
Zinc, Dissolved	900	420		ug/L	<200	BDL	BDL
Volatile Organics by GC/MS							
Total BTEX	NS	100		ug/L	BDL (1.0)	BDL	BDL
Volatile Organics by GC/MS-SIM							
1,4-Dioxane	6,000	200		ug/L	<50	BDL	BDL
Ethanol by EPA 1671							
Ethanol	NS	Report		ug/L	<20.000	BDL	BDL

Notes:
1. Samples were collected by Sanborn, Head & Associates, Inc. (Sanborn Head) on the indicated dates and were analyzed by Alpha Analytical Laboratories, Inc. of Westborough, MA and Teklab, Inc. of Collinsville, IL.
2. Average concentrations for each analyte were calculated as an arithmetic average of detected concentrations and half of the detection limits where analytes were not detected.
3. Bolded values indicate detections above the laboratory reporting limits.
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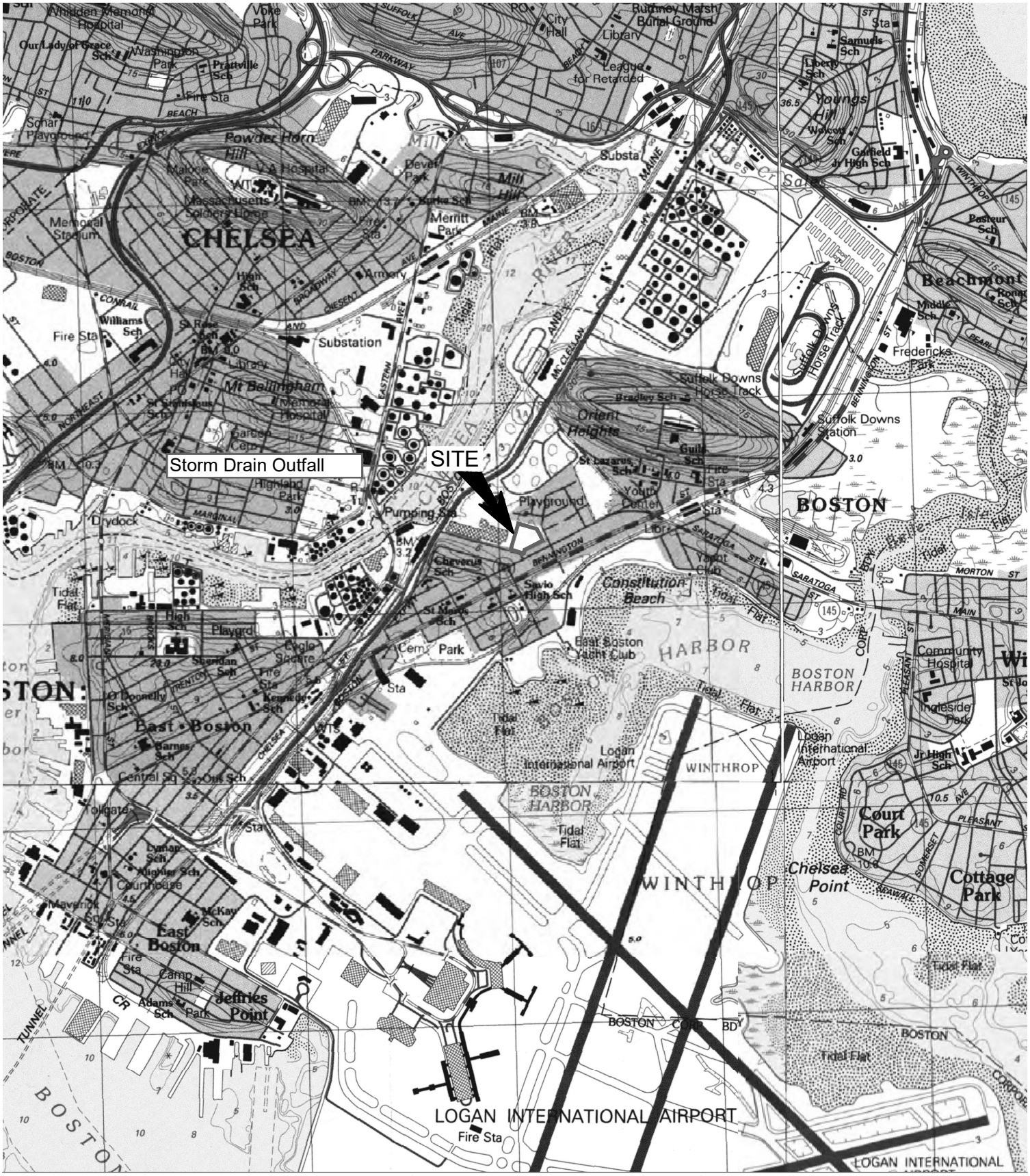
ug/L = micrograms per liter
mg/L = milligrams per liter
"<" indicates the analyte was not detected above the laboratory reporting limit shown
BDL = below detection limit
BDL (X.X) = total value below detection limit of X.X
NS = No Standard
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

FIGURES



NOTES:
Base map was taken from the "Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"
7.5 minute USGS Quadrangle Maps: Chelsea, Massachusetts, REV: 1985

DRAFT

Drawn By: C.Green
Designed By: P.Malone
Reviewed By: S.Sadkowski
Project No: 4232.00
Date: February 2020

SCALE: 1:25,000

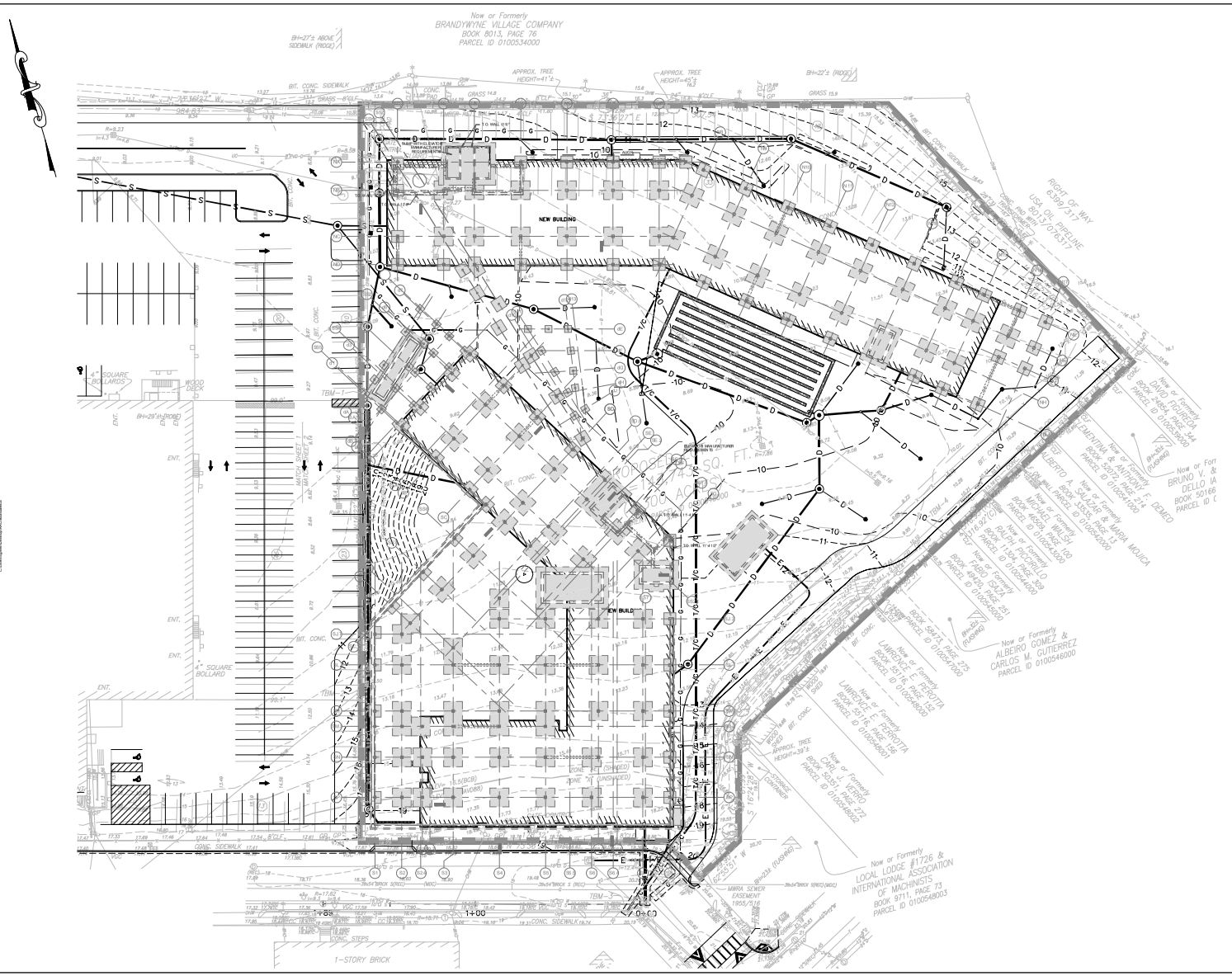
SANBORN HEAD

Figure 1

Locus Plan

NPDES Remediation General Permit

144 Addison Street
East Boston, Massachusetts



NOTES:

1. THE BASE MAP WAS DRAWN FROM A PLAN ENTITLED, "PARTIAL TOPOGRAPHIC PLAN OF LAND", PREPARED BY FELDMAN LAND SURVEYORS OF BOSTON, MA, DATED APRIL 10, 2017 WITH AN ORIGINAL SCALE OF 1" = 30'.
2. THE PROPOSED SITE FEATURES WERE DRAWN FROM A PLAN ENTITLED, "SITE UTILITY PLAN" AND "SITE GRADING PLAN", PREPARED BY NITSCH ENGINEERING (NISTCH) OF BOSTON, MA, DATED OCTOBER 4, 2019.

LEGEND:

- APPROXIMATE SITE/DISPOSAL SITE BOUNDARY RTN 3-36155
- APPROXIMATE LOCATION OF PROPOSED BUILDING FOOTPRINT
- APPROXIMATE RAM AREA BOUNDARY

SANBORN HEAD

GRAPHICAL SCALE
30' 15' 0' 30' 60'

NO.	DATE	DESCRIPTION	BY

DRAWN BY: C.DIAS
DESIGNED BY: L.MUELLER
REVIEWED BY: P.MALONE
PROJECT MGR: P.MALONE
PIC: S.SADKOWSKI
DATE: FEBRUARY 2020

NPDES REMEDIATION GENERAL PERMIT
144 ADDISON STREET
EAST BOSTON, MASSACHUSETTS

SITE PLAN

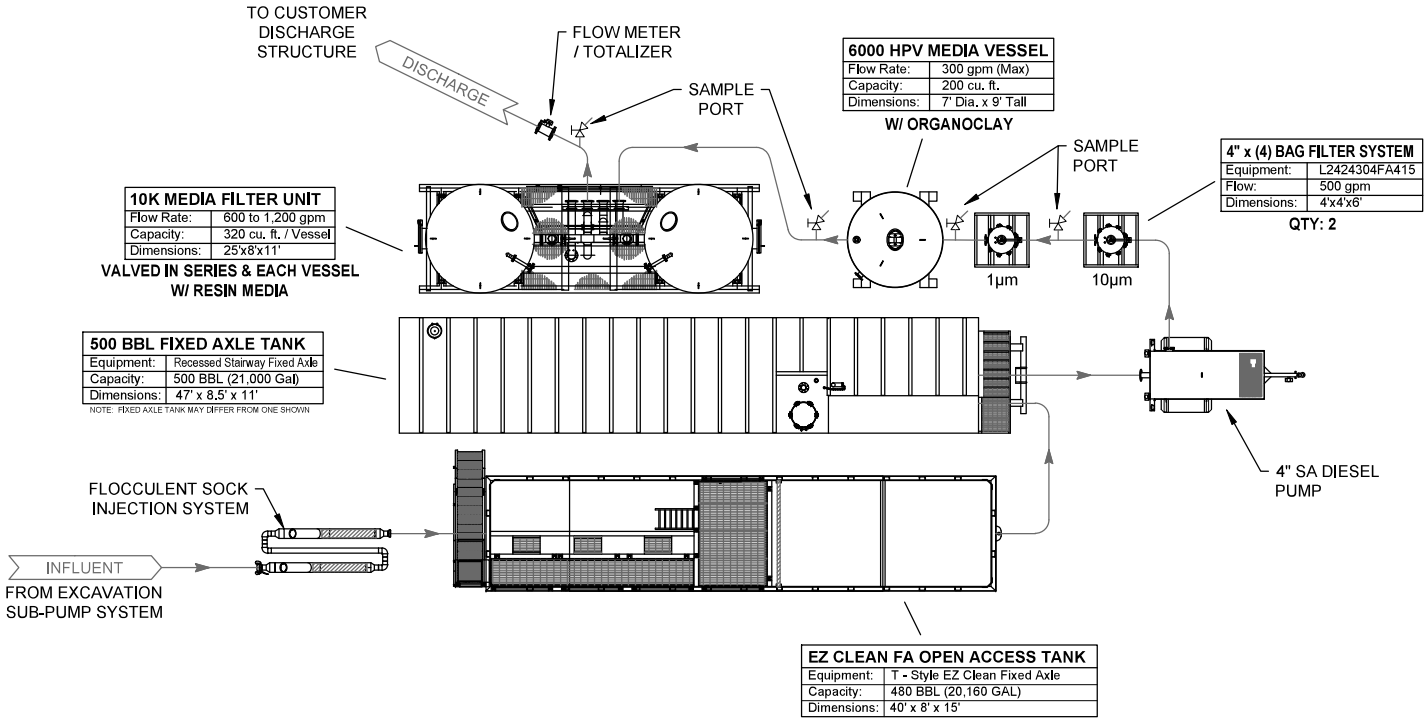
PROJECT NUMBER: 4232.00

SHEET NUMBER: 2

CONFIDENTIAL

PROPRIETARY

144 ADDISON ST - EAST BOSTON, MA
300 GPM (MAX) GROUNDWATER TREATMENT SYSTEM



NOTE:
ACTUAL EQUIPMENT LAYOUT MAY DIFFER IN THE FIELD AND DEPENDENT ON AVAILABLE FOOTPRINT.

SHEET SIZE:	B (11" x 17")
MATERIAL:	
FINISH:	

United Rentals Fluid Solutions
6136 FRISCO SQUARE BLVD, SUITE 400
FRISCO, TX 75034

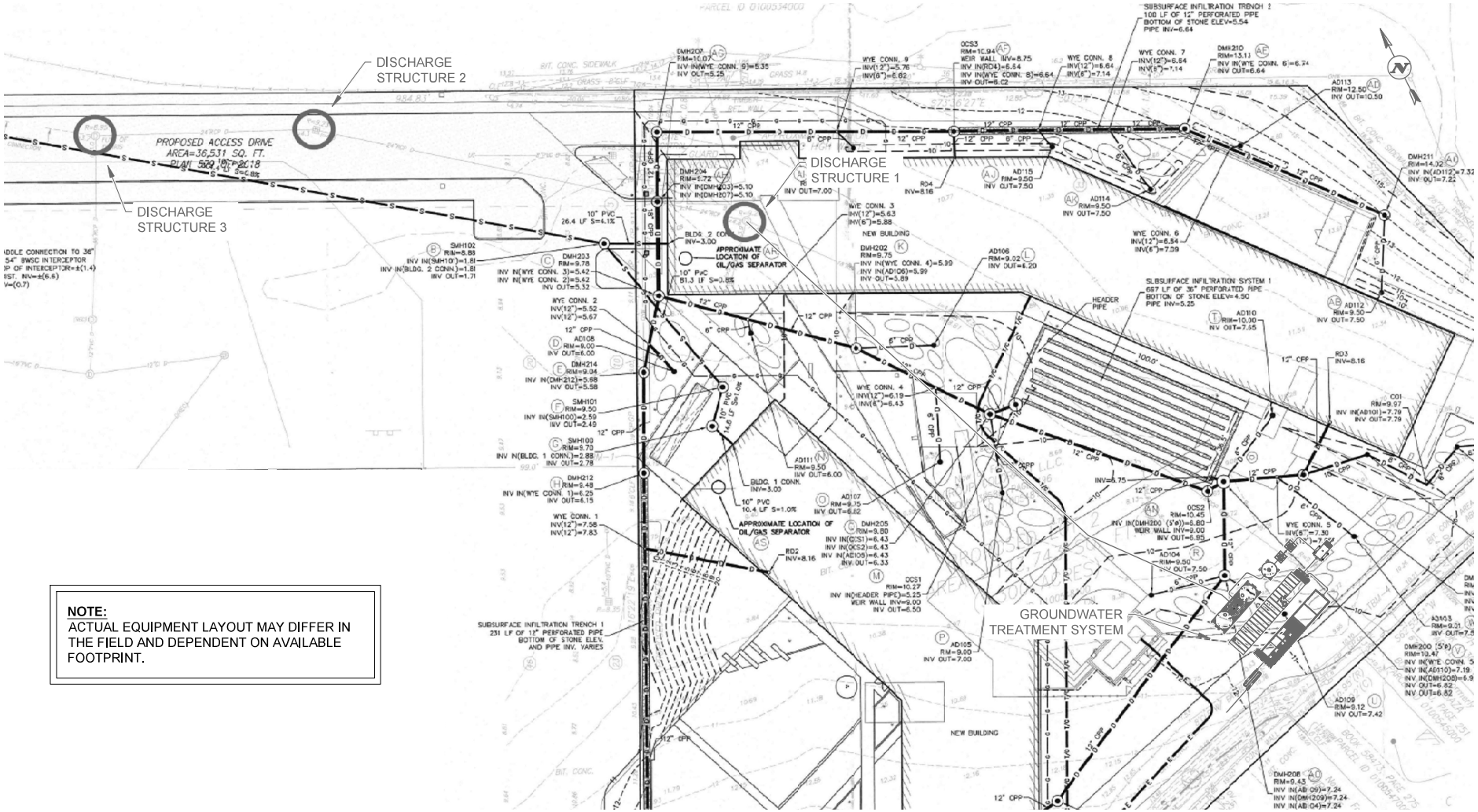
TITLE: **144 ADDISON ST - EAST BOSTON, MA**
PROCESS FLOW DIAGRAM

CUSTOMER: D & M CIVIC INC - MIDDLETON, MA				BRANCH: BOS	
DWG BY: M. BROOKS	DATE: 02-28-20	SCALE: -	SHEET: 1	OF: 2	
CKD BY: M. SCOPELLETI	DATE: 02-28-20	DWG No: SKF5795	REV: -		

CONFIDENTIAL

PROPRIETARY

144 ADDISON ST - EAST BOSTON, MA
300 GPM (MAX) GROUNDWATER TREATMENT SYSTEM



NOTE:
ACTUAL EQUIPMENT LAYOUT MAY DIFFER IN THE FIELD AND DEPENDENT ON AVAILABLE FOOTPRINT.

SHEET SIZE:	B (11" x 17")
MATERIAL:	
FINISH:	

United Rentals Fluid Solutions
6136 FRISCO SQUARE BLVD, SUITE 400
FRISCO, TX 75034

TITLE: **144 ADDISON ST - EAST BOSTON, MA**
PROCESS FLOW DIAGRAM

CUSTOMER: D & M CIVIC INC - MIDDLETON, MA				BRANCH: BOS	
DWG BY: M. BROOKS	DATE: 02-28-20	SCALE: -	SHEET: 2	OF: 2	
CKD BY: M. SCOPELLETI	DATE: 02-28-20	DWG No: SKF5795	REV: -		

APPENDIX A

NOTICE OF INTENT FORM

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
144 Addison Street</td><td colspan="3">Site address: 144
Street: Addison St</td></tr>
<tr><td>City: East Boston</td><td>State: MA</td><td>Zip: 02128</td></tr>
<tr><td rowspan="4">2. Site owner
144 Addison Street, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Steve Perdue</td></tr>
<tr><td colspan="2">Telephone: 617-904-7016</td><td>Email: steve.perdue@redgate-re.com</td></tr>
<tr><td colspan="3">Mailing address: 265 Franklin St, 6th Floor
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
D&M Civil</td><td colspan="3">Contact Person: Andrew Green</td></tr>
<tr><td colspan="2">Telephone: 978-766-5679</td><td>Email: agreen@dm-civil.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 30 Log Bridge Road, Suite 102</td></tr>
<tr><td>City: Middleton</td><td>State: MA</td><td>Zip: 01949</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
NA (Separate CGP issued Permit No. MAR1002FA)

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
3-36155
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Chelsea River	MA71-06	SB/CSO

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

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

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

If yes, specify: Tidal flats & protected open spaces are within 0.5 miles of the site to the north and southeast. Two schools (to the southwest of the site) are within 0.5 mi

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Yes, listed in 303(d). Impairments include debris, ammonia, dissolved oxygen, fecal coliform, PCBs in fish tissue, petroleum hydrocarbons, odor & turbidity. No TMDL. Impaired designated uses: fish/shellfish fishing.

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.	0.00391 MGD - See Appendix C
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.	1.0091 - See Appendix C

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No

If yes, indicate date confirmation received: 2/18/2020

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

C. Source water information:

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

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

2. Source water contaminants: TSS, Nitrogen (Ammonia), Hexavalent Chromium, Acenaphthene, Fluoranthene, Naphtalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Chrysene, Anthracene, Fluorene, Phenanthrene, Pyrene, Arsenic (Total & Dissolved), Total Cadmium, Chromium (Total & Dissolved), Copper (Total & Dissolved), Iron (Total & Dissolved), Lead (Total & Dissolved), Nickel (Total & Dissolved), Zinc (Total & 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): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ■ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Chelsea Creek, just upstream of the Chelsea Street Bridge: 29N135 (29NSDO135).	Outfall location(s): (Latitude, Longitude) 42.387453, -71.018718
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Effluent will enter an existing storm water drainage system that discharges into Chelsea Creek, just upstream of the Chelsea Street Bridge. ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: A Dewatering Discharge Permit has been submitted to the BWSC concurrently with the submittal of this NOI - See Appendix E. Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): 03/02/2020 - 02/28/2021 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	3	4500NH3-121,BH	75	25200	13833.33	Report mg/L	---
Chloride		✓	3	44,300.0	25000	2,660,000	1,321,000	Report µg/l	---
Total Residual Chlorine	✓		3	121,4500CL-D	20	ND	ND	0.2 mg/L	11 ug/L
Total Suspended Solids		✓	3	121,2540D	16000	460	260	30 mg/L	---
Antimony	✓		3	3,200.8	4	ND	ND	206 µg/L	640 ug/L
Arsenic		✓	3	3,200.8	1	6.40	5.22	104 µg/L	10 ug/L
Cadmium		✓	3	3,200.8	0.2	0.33	0.30	10.2 µg/L	4.1931 ug/L
Chromium III	✓		3	107	10	ND	ND	323 µg/L	1782.5 ug/L
Chromium VI		✓	3	1,7196A	10	27	27	323 µg/L	11.4 ug/L
Copper		✓	3	3,200.8	1	17.46	9.46	242 µg/L	220.0 ug/L
Iron		✓	3	19,200.7	50	93400	47843.33	5,000 µg/L	1000 ug/L
Lead		✓	3	3,200.8	1	189.7	108.76	160 µg/L	352.83 ug/L
Mercury	✓		3	3,245.1	0.2	ND	ND	0.739 µg/L	0.91 ug/L
Nickel		✓	3	3,200.8	2	3.89	3.59	1,450 µg/L	1192.2 ug/L
Selenium	✓		3	3,200.8	5	ND	ND	235.8 µg/L	5.0 ug/L
Silver	✓		3	3,200.8	0.4	ND	ND	35.1 µg/L	2192.7 ug/L
Zinc		✓	3	3,200.8	10	421	328.60	420 µg/L	2751.7 ug/L
Cyanide	✓		3	121,4500CN-CE	5	ND	ND	178 mg/L	5.2 ug/L
B. Non-Halogenated VOCs									
Total BTEX	✓		3	128,624.1	2.0	ND	ND	100 µg/L	---
Benzene	✓		3	128,624.1	2.0	ND	ND	5.0 µg/L	---
1,4 Dioxane	✓		3	128,624.1	100	ND	ND	200 µg/L	---
Acetone	✓		3	128,624.1	20	ND	ND	7.97 mg/L	---
Phenol	✓		3	128,624.1	30	ND	ND	1,080 µg/L	300 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		3	128,624.1	2.0	ND	ND	4.4 µg/L	1.6
1,2 Dichlorobenzene	✓		3	128,624.1	10	ND	ND	600 µg/L	---
1,3 Dichlorobenzene	✓		3	128,624.1	10	ND	ND	320 µg/L	---
1,4 Dichlorobenzene	✓		3	128,624.1	10	ND	ND	5.0 µg/L	---
Total dichlorobenzene	✓		3	128,624.1	10	ND	ND	763 µg/L in NH	---
1,1 Dichloroethane	✓		3	128,624.1	3.0	ND	ND	70 µg/L	---
1,2 Dichloroethane	✓		3	128,624.1	3.0	ND	ND	5.0 µg/L	---
1,1 Dichloroethylene	✓		3	128,624.1	2.0	ND	ND	3.2 µg/L	---
Ethylene Dibromide	✓		3	504.1	0.010	ND	ND	0.05 µg/L	---
Methylene Chloride	✓		3	128,624.1	2.0	ND	ND	4.6 µg/L	---
1,1,1 Trichloroethane	✓		3	128,624.1	4.0	ND	ND	200 µg/L	---
1,1,2 Trichloroethane	✓		3	128,624.1	3.0	ND	ND	5.0 µg/L	---
Trichloroethylene	✓		3	128,624.1	2.0	ND	ND	5.0 µg/L	---
Tetrachloroethylene	✓		3	128,624.1	2.0	ND	ND	5.0 µg/L	3.3
cis-1,2 Dichloroethylene	✓		3	128,624.1	2.0	ND	ND	70 µg/L	---
Vinyl Chloride	✓		3	128,624.1	2.0	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		3	129, 625.1	5.0	ND	ND	190 µg/L	--
Diethylhexyl phthalate	✓		3	129, 625.1	5.0	ND	ND	101 µg/L	ND
Total Group I PAHs		✓	3	129, 625.1	0.10	0.39	0.39	1.0 µg/L	---
Benzo(a)anthracene		✓	3	129, 625.1	0.10	0.12	0.12	As Total PAHs	0.0038 ug/L
Benzo(a)pyrene		✓	3	129, 625.1	0.10	0.11	0.11		0.0038 ug/L
Benzo(b)fluoranthene		✓	3	129, 625.1	0.10	0.16	0.16		0.0038 ug/L
Benzo(k)fluoranthene	✓		3	129, 625.1	0.10	ND	ND		0.0038ug/L
Chrysene	✓		3	129, 625.1	0.10	ND	ND		0.0038 ug/L
Dibenzo(a,h)anthracene	✓		3	129, 625.1	0.10	ND	ND		0.0038ug/L
Indeno(1,2,3-cd)pyrene	✓		3	129, 625.1	0.10	ND	ND		0.0038ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✓	3	129, 625.1	0.10	2.67	1.46	100 µg/L	---
Naphthalene		✓	3	129, 625.1	0.10	0.62	0.62	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		3	127, 608.3	0.250	ND	ND	0.000064 µg/L	---
Pentachlorophenol	✓		3	129, 625.1	1.0	ND	ND	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		3	74,1664A	4000	ND	ND	5.0 mg/L	---
Ethanol	✓		3	1671A	20000	ND	ND	Report mg/L	---
Methyl-tert-Butyl Ether	✓		3	128,624.1	20	ND	ND	70 µg/L	20 ug/L
tert-Butyl Alcohol	✓		3	128,624.1	200	ND	ND	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		3	128,624.1	40	ND	ND	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Phenolics	✓		3	4,420.1	30	ND	ND		
pH		✓	3	4500H+-B		9 SU	8 SU		

E. Treatment system information

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

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

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.

Groundwater encountered during construction activities will be pumped into a treatment system prior to discharge into an existing stormwater catch basin. The first element of the treatment system will be a fractionalization tank where solids will settle out. The effluent will then pass through the following as necessary: a bag filter, a granular activated carbon vessel, and two cation resin vessels plumbed in series. The effluent will be discharged to the existing storm drain system.

Identify each major treatment component (check any that apply):

■ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ■ Media filter
☐ Chemical feed tank ☐ Air stripping unit ■ Bag filter ■ Other; if so, specify: Cation resin vessel if needed

Indicate if either of the following will occur (check any that apply):

☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Frac tank Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	300
Provide the proposed maximum effluent flow in gpm.	300
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ■ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ■ Other; if so, specify:
dual biopolymer and dry flocculant compounds to aid settling

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

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

See Appendix G

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.

Appendix B includes the Massachusetts Category 5 Waters listing for the Chelsea River.
Appendix C includes calculations for the dilution factor.
Appendix D includes the analytical laboratory data collected for the influent and effluent water.
Appendix E includes municipal correspondence.
Appendix F includes correspondence from the National Oceanic and Atmospheric Administration and the US Fish and Wildlife Service.
Appendix G includes a list of Historic Places in Boston and Chelsea, Massachusetts.

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ■ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ■ No ☐ NA ☐
Signature:	Date: 3/4/20
Print Name and Title: ANDREW GREEN – PROJECT MANAGER	

APPENDIX B

MASSACHUSETTS CATEGORY 5 WATERS AND SITE ASSESSMENT MAP

Revised Dilution Factor Calcs

Based on 300 GPM Flow Rate

PURPOSE:
To re-calculate the dilution factor (DF) for metal concentrations in a potential discharge from on-site construction dewatering activities at the new design flow rate of 300 gpm.

METHOD:

$$DF = (Qd + Qs)/Qd$$

Where: DF = Dilution Factor
Qd = Design flow rate of the discharge in million gallons per day (MGD)
Qs = Receiving water 7Q10 flow (MGD) where 7Q10 is the minimum flow for 7 consecutive days with a recurrence interval of 10 years

GIVEN:
1.0 gpm = 0.00144 MGD
1.0 cfs = 0.64632 MGD
Qd = 300 gpm = 0.00144 MGD * 300 = 0.432 MGD
Qs = 0.00605 cfs = 0.00391 MGD of flow into the Chelsea River [Reference 1]

CALCULATION:

$$DF = (0.432 \text{ MGD} + 0.00391 \text{ MGD}) / 0.432 \text{ MGD}$$

DF = 1.0091

RESULTS:
The resulting dilution factor to be used when discharging to the Chelsea River is 1.0091.

REFERENCES:
[1] StreamStats Report. Accessed online: http://streamstatsags.usgs.gov/ss/ (Refer to Reference 1)

Appendix B

Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"

Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Chelsea River	MA71-06	From confluence with Mill Creek, Chelsea/Revere to confluence with Boston Inner Harbor, Chelsea/East Boston.	0.37	Square Miles	(Debris*)	
					(Trash*)	
					Ammonia, Un-ionized	
					Cause Unknown (Contaminants in Fish and/or Shellfish; Sediment Screening Value (Exceedence))	
					Dissolved Oxygen	
					Fecal Coliform	
					Odor	
					PCBs in Fish Tissue	
					Petroleum Hydrocarbons	
					Turbidity	
Clay Pit Pond	MA71011	Belmont	12.00	Acres	Chlordane in Fish Tissue	
Cummings Brook	MA71-10	Headwaters east of Wright Street, Woburn to confluence with Fowle Brook, Woburn.	2.10	Miles	Escherichia Coli (E. Coli)	
Ell Pond	MA71014	Melrose	23.00	Acres	Chlorophyll-a	
					Fecal Coliform	
					Harmful Algal Blooms	
					Phosphorus, Total	
					Total Suspended Solids (TSS)	
					Transparency / Clarity	
Fellsmere Pond	MA71016	Malden.	5.00	Acres	Harmful Algal Blooms	
Horn Pond	MA71019	Woburn.	108.00	Acres	(Non-Native Aquatic Plants*)	
					DDT in Fish Tissue	
					Dissolved Oxygen	
					Harmful Algal Blooms	
					Phosphorus, Total	
Little Pond	MA71024	Belmont.	18.00	Acres	Harmful Algal Blooms	
Lower Mystic Lake	MA71027	Arlington/Medford.	93.00	Acres	DDT in Fish Tissue	
					Dissolved Oxygen	
					Hydrogen Sulfide	
					PCBs in Fish Tissue	
					Salinity	
					Sediment Bioassay (Chronic Toxicity Freshwater)	

MassDEP - Bureau of Waste Site Cleanup

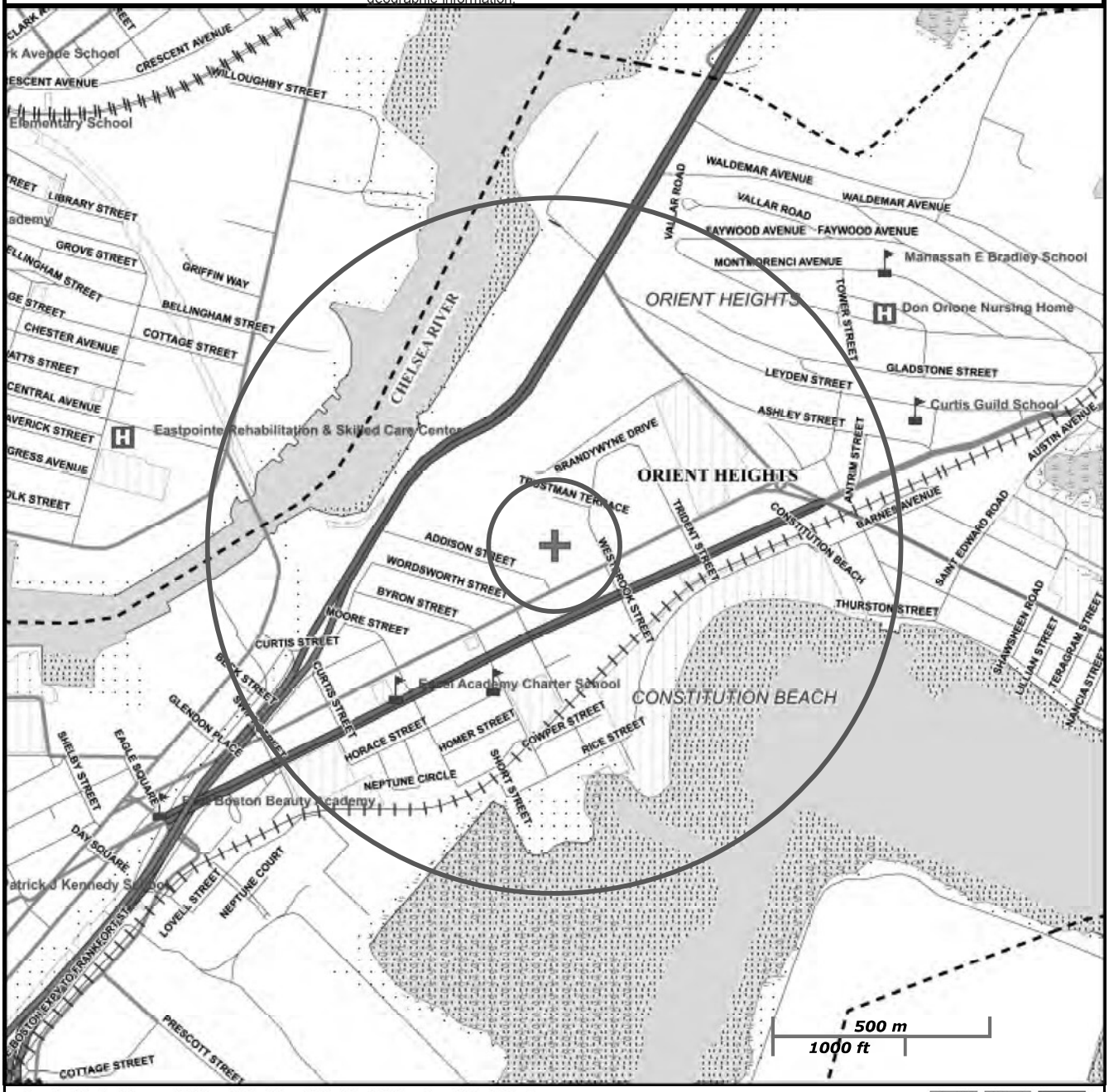
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
144 ADDISON ST
144 ADDISON ST BOSTON, MA

NAD83 UTM Meters:
4694570mN , 334181mE (Zone: 19)
February 14, 2020

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

APPENDIX C

DILUTION CALCULATIONS

PURPOSE:
To calculate the dilution factor (DF) for metal concentrations in a potential discharge from on-site construction dewatering activities.

METHOD:

$$DF = (Qd + Qs)/Qd$$

Where: DF = Dilution Factor
Qd = Design flow rate of the discharge in million gallons per day (MGD)
Qs = Receiving water 7Q10 flow (MGD) where 7Q10 is the minimum flow for 7 consecutive days with a recurrence interval of 10 years

GIVEN:
1.0 gpm = 0.00144 MGD
1.0 cfs = 0.64632 MGD
Qd = 100 gpm = 0.144 MGD
Qs = 0.00605 cfs = 0.00391 MGD of flow into the Chelsea River [Reference 1]

CALCULATION:

$$DF = (0.144 \text{ MGD} + 0.00391 \text{ MGD}) / 0.144 \text{ MGD}$$

DF = 1.0272

RESULTS:

The resulting dilution factor to be used when discharging to the Chelsea River is 1.0272.

REFERENCES:

[1] StreamStats Report.

Accessed online: http://streamstatsags.usgs.gov/ss/ (Refer to Reference 1)

Appendix C - Reference 1

Region ID: MA
Workspace ID: MA20200212193013985000
Clicked Point (Latitude, Longitude): 42.38541, -71.01296
Time: 2020-02-12 14:30:30 -0500 144 Addison St, East Boston, MA 02128

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.12	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	1.838	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

General Disclaimers

Parameter values have been edited, computed flows may not apply.

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.12	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	1.838	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00258	ft^3/s
7 Day 10 Year Low Flow	0.00605	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p.

Application Version: 4.3.11

Meghan Reisenauer

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Tuesday, February 18, 2020 6:28 PM
To: Meghan Reisenauer
Cc: Patrick Malone; Stan Sadkowski
Subject: RE: Confirm 7Q10 Value for NPDES RGP

Hi Meghan,
Thank you for all of the information that you provided confirming that you will be connecting to a storm drain that flows to Chelsea Creek and for noting that you already have coverage under the CGP.
Best of luck,
Cathy

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

From: Meghan Reisenauer [mailto:mreisenauer@sanbornhead.com]
Sent: Tuesday, February 18, 2020 1:19 PM
To: Vakalopoulos, Catherine (DEP)
Cc: Patrick Malone; Stan Sadkowski
Subject: RE: Confirm 7Q10 Value for NPDES RGP

Hi Cathy,

I haven't heard back from BWSC yet, but I wanted to also let you know that the Site has a NPDES CGP in effect, permit # MAR1002FA.

This permit also confirms the Chelsea River (Creek) as the discharge point, and that the discharge does not flow through a MS4 on its way there. I've attached a PDF for your reference.

Thanks,
Meghan

From: Meghan Reisenauer
Sent: Monday, February 17, 2020 11:06 AM
To: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Cc: Patrick Malone (pmalone@sanbornhead.com) <pmalone@sanbornhead.com>; Stan Sadkowski <ssadkowski@sanbornhead.com>
Subject: RE: Confirm 7Q10 Value for NPDES RGP

Hi Cathy,

I haven't corresponded with BWSC about the storm drain flow, but I understand that the storm drain does flow to Chelsea Creek due to the outfall listings from BWSC (attached), from https://www.bwsc.org/sites/default/files/2019-03/Stormwater_Management_Report_2018_0.pdf (Tables 1-1 and 2-1). The figure in the report (attached) also shows 29NSDO135 at the same location as the outfall into Chelsea Creek that we determined to be where the drain led.

We received the following emails from Nitsch Engineering, which show the outflow from the site.

"Virtually the entire site flows through a 24" RCP private drain on our site, which connects to a 48" drain which eventually discharges to the Chelsea Creek and then the Atlantic Ocean. The drain is a private drain that our site has permission to drain through. Does not connect to BWSC or MWRA or Deer Island.
GP

Gary F. Pease, PE, LEED AP | Vice President, Director of Client Services

Nitsch Engineering

2 Center Plaza, Suite 430, Boston, MA 02108 | www.nitscheng.com
Main: 617-338-0063 | Cell: 617-429-6351 | gpease@nitscheng.com

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Pat,
See the image below. I believe this is the outfall into the Chelsea Creek from our site.
Chris

Christopher D. Hodney, PE | Senior Project Engineer
Nitsch Engineering
Direct: 857-206-8673
chodney@nitscheng.com

However, you bring up a good point, so I'll confirm that this is the correct outfall with BWSC before we submit the NOI application. I'll let you know when I receive confirmation of the correct location.

In regards to the transmittal form - we have an application with MassDEP in the works for a Dewatering Discharge Permit. The application hasn't been signed yet, but I've attached it here so you can see what we'll be submitting. I've also attached a copy of our transmittal form, although we haven't submitted that either.

Best,
Meghan

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@state.ma.us>
Sent: Friday, February 14, 2020 5:44 PM
To: Meghan Reisenauer <mreisenauer@sanbornhead.com>
Subject: RE: Confirm 7Q10 Value for NPDES RGP

Hi Meghan,
Have you confirmed with BWSC that the storm drain does indeed flow to Chelsea Creek? Because it would seem to me that storm drains near that address would flow to Winthrop Bay, but I don't have a storm drain map to look at. Regardless, even though you were able to get StreamStats to calculate a tiny 7Q10, MassDEP does not grant dilution factors for discharges to marine waters unless the applicant can show dilution using the results of a dilution study or model.

Here is some information that will help you fill out the NOI:

Chelsea Creek is identified as segment MA71-06, is classified as Class SB(CSO), is not an Outstanding Resource Water, and is on the State's Integrated List of Waters: https://www.mass.gov/doc/final-massachusetts-year-2016-integrated-list-of-waters/download. Go to this link and search for "MA71-06" to see the causes of impairments. There is one approved TMDL for pathogens: https://www.mass.gov/files/documents/2018/12/06/bharbor1.pdf.

Winthrop Bay is identified as segment MA70-10, is classified as SB, is not an Outstanding Resource Water, and is on the State's Integrated List of Waters where you can see the causes of impairments. Winthrop Bay also has one approved TMDL (the same one as linked above).

Also, if the site is not *currently* being regulated by the MCP then in addition to submitting the NOI, you also need to apply with MassDEP by submitting a transmittal form and a $500 fee (unless fee exempt). The instructions are located here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent. Please make sure to also send me a copy of the transmittal form (I'm mentioning this here because it's not in the online instructions yet).

Let me know if you have any questions. I will be out on Monday but back in the office on Tuesday.

Cathy

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

From: Meghan Reisenauer [mailto:mreisenauer@sanbornhead.com]
Sent: Friday, February 14, 2020 5:02 PM
To: Vakalopoulos, Catherine (DEP)
Cc: Patrick Malone; Stan Sadkowski
Subject: FW: Confirm 7Q10 Value for NPDES RGP

Good morning,

I would like to confirm the following 7Q10 value for a RGP project located in East Boston, MA.

Using StreamStats, I selected the site, which drains to the outlet within the Chelsea River.

Site Address: 144 Addison St, East Boston, MA 02128
Site CG Permit Number: MAR1002FA
Type of Discharge: Via drain outlet in the Chelsea River with the approximate latitude and longitude indicated below.

Approximate Lat/Long:
Lat: 42.38541 Long: -71.01296

Design Discharge Flow: 100 gpm = 0.144 MGD
Upstream StreamStats Generated, 7Q10: 0.00605 cfs = 0.00391 MGD

Dilution Factor: DF = 1.0272

I have attached a draft calculation sheet which was used to arrive at the above dilution factor.

Please let me know if you require any further information.

Thank you,
Meghan Reisenauer

From: Meghan Reisenauer
Sent: Thursday, February 13, 2020 11:32 AM
To: susannah.king@mass.gov
Cc: Patrick Malone (pmalone@sanbornhead.com) <pmalone@sanbornhead.com>; Stan Sadkowski <ssadkowski@sanbornhead.com>
Subject: Confirm 7Q10 Value for NPDES RGP

Good morning,

I would like to confirm the following 7Q10 value for a RGP project located in East Boston, MA.

Using StreamStats, I selected the site, which drains to the outlet within the Chelsea River.

Site Address: 144 Addison St, East Boston, MA 02128
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Type of Discharge: Via drain outlet in the Chelsea River with the approximate latitude and longitude indicated below.

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Lat: 42.38541 Long: -71.01296

Design Discharge Flow: 100 gpm = 0.144 MGD
Upstream StreamStats Generated, 7Q10: 0.00605 cfs = 0.00391 MGD

Dilution Factor: DF = 1.0272

I have attached a draft calculation sheet which was used to arrive at the above dilution factor.

Please let me know if you require any further information.

Thank you,

Meghan Reisenauer
Engineer

SANBORN | HEAD & ASSOCIATES, INC.
D 857.327.9743 | M 208.596.1279 | 98 N. Washington Street, Suite 101, Boston, MA 02114

Click here to follow us on LinkedIn | Twitter | Facebook | sanbornhead.com

From: Bagley, Thomas
To: Meghan Reisenauer
Subject: Addison Street East Boston
Date: Tuesday, February 18, 2020 1:50:44 PM

Good afternoon Mr. Reisenauer,
The storm drain on Addison street that drains to 29NSDO135 is owned by the Commission and empties to the Chelsea creek/river according to our Engineering Department.
Hopefully this helps.
Regards,
Tom Bagley Communications Boston Water and Sewer Commission.

Submitted on Mon, 02/17/2020 - 11:20 AM
Submitted by: Anonymous
Submitted values are:
*Feedback Type: Other
*Your Name: Meghan Reisenauer
Address:
98 N Washington St #101
Boston, Massachusetts. 02114

*Phone Number: (857) 327-9743
*Phone Type: Landline
*Your Email: mreisenauer@sanbornhead.com
Comments:
Hello, I am contacting you to check which outfall a storm drain leads to.

I'm a consultant with Sanborn Head & Associates, and we have a client with a project at 144 Addison St in East Boston 02128. On the east side of the site, there is a storm drain, which we believe leads to the Chelsea Creek, specifically Outfall 29N135.

However, in correspondence with Cathy Vakalopoulos of MADEP, the question was raised that this drain might flow to Winthrop Bay. We have permission to use the drain, and found that it may also be a private drain which discharges in to the Chelsea Creek.

Please feel free to email me for any further information to help determine which outfall is correct.

APPENDIX D

ANALYTICAL DATA REPORTS

ANALYTICAL REPORT

Lab Number:	L2003068
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	144 ADDISON ST
Project Number:	4232.00
Report Date:	01/30/20

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

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

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2003068-01	SH-101W	WATER	EAST BOSTON, MA	01/22/20 14:00	01/22/20
L2003068-02	SH-102W	WATER	EAST BOSTON, MA	01/22/20 15:00	01/22/20

Project Name:	144 ADDISON ST	**Lab Number:**	L2003068
Project Number:	4232.00	**Report Date:**	01/30/20

Case Narrative

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

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

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

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

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

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

Project Name: 144 ADDISON ST **Lab Number:** L2003068
Project Number: 4232.00 **Report Date:** 01/30/20

Case Narrative (continued)

Report Submission
January 30, 2020: This final report includes the results of all requested analyses.
January 29, 2020: This is a preliminary report.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.
Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt
L2003068-02: Headspace was noted in the sample containers submitted for VOC 624 analysis. The analysis was cancelled at the client's request.

Volatile Organics by Method 624
L2003068-01: The sample has elevated detection limits due to the dilution required by the sample matrix (cloudy).

Volatile Organics by SIM
L2003068-01: The sample has elevated detection limits due to the dilution required by the sample matrix (cloudy).

Microextractables
The WG1333064-2 LCS recovery for 1,2-dibromoethane (75%), associated with L2003068-01, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Total Metals
The WG1332857-3 MS recovery for iron (30%), performed on L2003068-01, does not apply because the sample concentration is greater than four times the spike amount added.
The WG1332861-4 Laboratory Duplicate RPDs for chromium (42%), copper (62%) and nickel (23%),

Project Name: 144 ADDISON ST **Lab Number:** L2003068
Project Number: 4232.00 **Report Date:** 01/30/20

Case Narrative (continued)

performed on L2003068-01, are above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

Dissolved Metals

The WG1333154-3 MS recovery for iron (30%), performed on L2003068-01, does not apply because the sample concentration is greater than four times the spike amount added.

Chlorine, Total Residual

The WG1332824-4 MS recovery (0%), performed on L2003068-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

Nitrogen, Ammonia

The WG1333336-4 MS recovery (76%), performed on L2003068-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 01/30/20

ORGANICS

VOLATILES

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 01/23/20 13:58
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/23/20 11:04

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: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01 D
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 01/23/20 13:48
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	2
1,1-Dichloroethane	ND		ug/l	3.0	--	2
Carbon tetrachloride	ND		ug/l	2.0	--	2
1,1,2-Trichloroethane	ND		ug/l	3.0	--	2
Tetrachloroethene	ND		ug/l	2.0	--	2
1,2-Dichloroethane	ND		ug/l	3.0	--	2
1,1,1-Trichloroethane	ND		ug/l	4.0	--	2
Benzene	ND		ug/l	2.0	--	2
Toluene	ND		ug/l	2.0	--	2
Ethylbenzene	ND		ug/l	2.0	--	2
Vinyl chloride	ND		ug/l	2.0	--	2
1,1-Dichloroethene	ND		ug/l	2.0	--	2
cis-1,2-Dichloroethene	ND		ug/l	2.0	--	2
Trichloroethene	ND		ug/l	2.0	--	2
1,2-Dichlorobenzene	ND		ug/l	10	--	2
1,3-Dichlorobenzene	ND		ug/l	10	--	2
1,4-Dichlorobenzene	ND		ug/l	10	--	2
p/m-Xylene	ND		ug/l	4.0	--	2
o-xylene	ND		ug/l	2.0	--	2
Xylenes, Total	ND		ug/l	2.0	--	2
Acetone	ND		ug/l	20	--	2
Methyl tert butyl ether	ND		ug/l	20	--	2
Tert-Butyl Alcohol	ND		ug/l	200	--	2
Tertiary-Amyl Methyl Ether	ND		ug/l	40	--	2

Project Name: 144 ADDISON ST
Lab Number: L2003068
Project Number: 4232.00
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01 D
Client ID: SH-101W
Sample Location: EAST BOSTON, MA
Date Collected: 01/22/20 14:00
Date Received: 01/22/20
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	103		60-140
Fluorobenzene	100		60-140
4-Bromofluorobenzene	100		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01 D
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 01/23/20 13:48
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	100	--	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	85		60-140
4-Bromofluorobenzene	87		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 01/23/20 11:19
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1332770-8					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 01/23/20 11:19
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1332770-8					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	102		60-140
Fluorobenzene	98		60-140
4-Bromofluorobenzene	97		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 01/23/20 12:36
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/23/20 11:04

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1333064-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 01/23/20 11:19
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1333656-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	84		60-140
4-Bromofluorobenzene	88		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1332770-7								
Methylene chloride	85		-		60-140	-		28
1,1-Dichloroethane	85		-		50-150	-		49
Carbon tetrachloride	105		-		70-130	-		41
1,1,2-Trichloroethane	95		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	90		-		70-130	-		49
1,1,1-Trichloroethane	110		-		70-130	-		36
Benzene	105		-		65-135	-		61
Toluene	105		-		70-130	-		41
Ethylbenzene	105		-		60-140	-		63
Vinyl chloride	55		-		5-195	-		66
1,1-Dichloroethene	90		-		50-150	-		32
cis-1,2-Dichloroethene	95		-		60-140	-		30
Trichloroethene	95		-		65-135	-		48
1,2-Dichlorobenzene	110		-		65-135	-		57
1,3-Dichlorobenzene	100		-		70-130	-		43
1,4-Dichlorobenzene	105		-		65-135	-		57
p/m-Xylene	100		-		60-140	-		30
o-xylene	95		-		60-140	-		30
Acetone	80		-		40-160	-		30
Methyl tert butyl ether	85		-		60-140	-		30
Tert-Butyl Alcohol	92		-		60-140	-		30
Tertiary-Amyl Methyl Ether	110		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1332770-7								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	104				60-140
Fluorobenzene	101				60-140
4-Bromofluorobenzene	97				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1333064-2						
1,2-Dibromoethane	**75**	Q	-		80-120	-			A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1333656-3								
1,4-Dioxane	78		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	85				60-140
4-Bromofluorobenzene	88				60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: 144 ADDISON ST

Project Number: 4232.00

Lab Number: L2003068

Report Date: 01/30/20

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1333064-3 QC Sample: L2002888-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.25	0.195	**78**	Q	-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.25	0.210	84		-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.25	0.236	94		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 01/24/20 13:21
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:06

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	76		46-121
4-Terphenyl-d14	88		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 01/24/20 12:17
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	0.22		ug/l	0.10	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	0.12		ug/l	0.10	--	1
Benzo(a)pyrene	0.11		ug/l	0.10	--	1
Benzo(b)fluoranthene	0.16		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	0.12		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	0.20		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		25-87
Phenol-d6	37		16-65
Nitrobenzene-d5	87		42-122
2-Fluorobiphenyl	89		46-121
2,4,6-Tribromophenol	106		45-128
4-Terphenyl-d14	102		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-02
Client ID: SH-102W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 15:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 01/24/20 13:44
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:06

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	87		42-122
2-Fluorobiphenyl	84		46-121
4-Terphenyl-d14	92		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-02
Client ID: SH-102W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 15:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 01/24/20 12:34
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.82		ug/l	0.10	--	1
Fluoranthene	0.23		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	0.14		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	0.44		ug/l	0.10	--	1
Phenanthrene	0.85		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	0.19		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		25-87
Phenol-d6	42		16-65
Nitrobenzene-d5	94		42-122
2-Fluorobiphenyl	79		46-121
2,4,6-Tribromophenol	107		45-128
4-Terphenyl-d14	96		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 01/24/20 10:15
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1332964-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		42-122
2-Fluorobiphenyl	72		46-121
4-Terphenyl-d14	81		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 01/24/20 11:43
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG1332965-1					
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	47		25-87
Phenol-d6	34		16-65
Nitrobenzene-d5	80		42-122
2-Fluorobiphenyl	71		46-121
2,4,6-Tribromophenol	87		45-128
4-Terphenyl-d14	88		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1332964-3								
Bis(2-ethylhexyl)phthalate	87		-		29-137	-		82
Butyl benzyl phthalate	85		-		1-140	-		60
Di-n-butylphthalate	85		-		8-120	-		47
Di-n-octylphthalate	83		-		19-132	-		69
Diethyl phthalate	90		-		1-120	-		100
Dimethyl phthalate	98		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	99				42-122
2-Fluorobiphenyl	93				46-121
4-Terphenyl-d14	100				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1332965-2								
Acenaphthene	89		-		60-132	-		30
Fluoranthene	95		-		43-121	-		30
Naphthalene	89		-		36-120	-		30
Benzo(a)anthracene	95		-		42-133	-		30
Benzo(a)pyrene	96		-		32-148	-		30
Benzo(b)fluoranthene	103		-		42-140	-		30
Benzo(k)fluoranthene	84		-		25-146	-		30
Chrysene	88		-		44-140	-		30
Acenaphthylene	86		-		54-126	-		30
Anthracene	89		-		43-120	-		30
Benzo(ghi)perylene	97		-		1-195	-		30
Fluorene	91		-		70-120	-		30
Phenanthrene	94		-		65-120	-		30
Dibenzo(a,h)anthracene	96		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	105		-		1-151	-		30
Pyrene	93		-		70-120	-		30
Pentachlorophenol	77		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG1332965-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	56				25-87
Phenol-d6	42				16-65
Nitrobenzene-d5	93				42-122
2-Fluorobiphenyl	80				46-121
2,4,6-Tribromophenol	98				45-128
4-Terphenyl-d14	96				47-138

PCBS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 01/28/20 12:23
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 01/23/20 04:43
Cleanup Method: EPA 3665A
Cleanup Date: 01/23/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/23/20

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		37-123	B
Decachlorobiphenyl	42		38-114	B
2,4,5,6-Tetrachloro-m-xylene	74		37-123	A
Decachlorobiphenyl	**37**	Q	38-114	A

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-02
Client ID: SH-102W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 15:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 01/28/20 12:35
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 01/23/20 04:43
Cleanup Method: EPA 3665A
Cleanup Date: 01/23/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/23/20

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		37-123	B
Decachlorobiphenyl	40		38-114	B
2,4,5,6-Tetrachloro-m-xylene	74		37-123	A
Decachlorobiphenyl	**36**	Q	38-114	A

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 01/24/20 06:14
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 01/22/20 18:28
Cleanup Method: EPA 3665A
Cleanup Date: 01/22/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/23/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-02 Batch: WG1332808-1						
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	87		38-114	B
2,4,5,6-Tetrachloro-m-xylene	78		37-123	A
Decachlorobiphenyl	69		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1332808-2									
Aroclor 1016	77		-		50-140	-		36	A
Aroclor 1260	70		-		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	88				38-114	B
2,4,5,6-Tetrachloro-m-xylene	80				37-123	A
Decachlorobiphenyl	72				38-114	A

METALS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA
Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00404		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00026		mg/l	0.00020	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Chromium, Total	0.00195		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Copper, Total	0.00145		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Iron, Total	44.9		mg/l	0.050	--	1	01/23/20 01:06	01/23/20 15:38	EPA 3005A	19,200.7	LC
Lead, Total	0.1181		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	01/23/20 11:02	01/23/20 15:27	EPA 245.1	3,245.1	AL
Nickel, Total	0.00329		mg/l	0.00200	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
Zinc, Total	0.4140		mg/l	0.01000	--	1	01/23/20 01:06	01/23/20 12:23	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		01/23/20 12:23	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	0.0037		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0030		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Iron, Dissolved	42.0		mg/l	0.050	--	1	01/23/20 12:49	01/23/20 19:16	EPA 3005A	19,200.7	LC
Lead, Dissolved	0.0227		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/23/20 12:12	01/23/20 15:40	EPA 245.1	3,245.1	AL
Nickel, Dissolved	0.0022		mg/l	0.0020	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM
Zinc, Dissolved	0.0528		mg/l	0.0100	--	1	01/23/20 12:49	01/23/20 22:42	EPA 3005A	3,200.8	AM

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-02
Client ID: SH-102W
Sample Location: EAST BOSTON, MA
Date Collected: 01/22/20 15:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00640		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00033		mg/l	0.00020	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Chromium, Total	0.00621		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Copper, Total	0.01746		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Iron, Total	93.4		mg/l	0.050	--	1	01/23/20 01:06	01/23/20 16:23	EPA 3005A	19,200.7	LC
Lead, Total	0.1897		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	01/24/20 10:27	01/24/20 17:09	EPA 245.1	3,245.1	AL
Nickel, Total	0.00389		mg/l	0.00200	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
Zinc, Total	0.4210		mg/l	0.01000	--	1	01/23/20 01:06	01/23/20 12:27	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		01/23/20 12:27	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	0.0035		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Chromium, Dissolved	0.0023		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0031		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Iron, Dissolved	88.4		mg/l	0.050	--	1	01/23/20 12:49	01/23/20 19:21	EPA 3005A	19,200.7	LC
Lead, Dissolved	0.0102		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/23/20 12:12	01/23/20 15:53	EPA 245.1	3,245.1	AL
Nickel, Dissolved	ND		mg/l	0.0020	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM
Zinc, Dissolved	0.0214		mg/l	0.0100	--	1	01/23/20 12:49	01/23/20 22:47	EPA 3005A	3,200.8	AM

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1332857-1										
Iron, Total	ND		mg/l	0.050	--	1	01/23/20 01:06	01/23/20 15:20	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1332861-1										
Antimony, Total	ND		mg/l	0.00400	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	01/23/20 01:06	01/23/20 10:58	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	01/23/20 01:06	01/23/20 10:58	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
Dissolved Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1333091-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/23/20 12:12	01/23/20 15:36	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1333126-1										
Mercury, Total	ND		mg/l	0.00020	--	1	01/23/20 11:02	01/23/20 15:18	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1333154-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	01/23/20 12:49	01/23/20 19:07	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1333155-1										
Antimony, Dissolved	ND		mg/l	0.0040	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Nickel, Dissolved	ND		mg/l	0.0020	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	01/23/20 12:49	01/23/20 22:11	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1333641-1										
Mercury, Total	ND		mg/l	0.00020	--	1	01/24/20 10:27	01/24/20 17:42	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1332857-2								
Iron, Total	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1332861-2								
Antimony, Total	102		-		85-115	-		
Arsenic, Total	97		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	93		-		85-115	-		
Lead, Total	99		-		85-115	-		
Nickel, Total	95		-		85-115	-		
Selenium, Total	91		-		85-115	-		
Silver, Total	96		-		85-115	-		
Zinc, Total	103		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1333091-2								
Mercury, Dissolved	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1333126-2								
Mercury, Total	103		-		85-115	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1333154-2					
Iron, Dissolved	102	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1333155-2					
Antimony, Dissolved	102	-	85-115	-	
Arsenic, Dissolved	102	-	85-115	-	
Cadmium, Dissolved	107	-	85-115	-	
Chromium, Dissolved	103	-	85-115	-	
Copper, Dissolved	99	-	85-115	-	
Lead, Dissolved	105	-	85-115	-	
Nickel, Dissolved	100	-	85-115	-	
Selenium, Dissolved	105	-	85-115	-	
Silver, Dissolved	101	-	85-115	-	
Zinc, Dissolved	110	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1333641-2					
Mercury, Total	103	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1332857-3 QC Sample: L2003068-01 Client ID: SH-101W												
Iron, Total	44.9	1	45.2	**30**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1332861-3 QC Sample: L2003068-01 Client ID: SH-101W												
Antimony, Total	ND	0.5	0.4958	99		-	-		70-130	-		20
Arsenic, Total	0.00404	0.12	0.1318	106		-	-		70-130	-		20
Cadmium, Total	0.00026	0.051	0.05182	101		-	-		70-130	-		20
Chromium, Total	0.00195	0.2	0.2014	100		-	-		70-130	-		20
Copper, Total	0.00145	0.25	0.2449	97		-	-		70-130	-		20
Lead, Total	0.1181	0.51	0.6223	99		-	-		70-130	-		20
Nickel, Total	0.00329	0.5	0.4811	96		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.09915	83		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04784	96		-	-		70-130	-		20
Zinc, Total	0.4140	0.5	1.001	117		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333091-3 QC Sample: L2003068-01 Client ID: SH-101W												
Mercury, Dissolved	ND	0.005	0.00523	105		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1333126-3 QC Sample: L2003068-01 Client ID: SH-101W												
Mercury, Total	ND	0.005	0.00488	98		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1333126-5 QC Sample: L2000001-180 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00399	80		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333154-3 QC Sample: L2003068-01 Client ID: SH-101W												
Iron, Dissolved	42.0	1	42.3	**30**	Q	-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333155-3 QC Sample: L2003068-01 Client ID: SH-101W									
Antimony, Dissolved	ND	0.5	0.5140	103	-	-	70-130	-	20
Arsenic, Dissolved	0.0037	0.12	0.1264	102	-	-	70-130	-	20
Cadmium, Dissolved	ND	0.051	0.0510	100	-	-	70-130	-	20
Chromium, Dissolved	ND	0.2	0.2064	103	-	-	70-130	-	20
Copper, Dissolved	0.0030	0.25	0.2415	95	-	-	70-130	-	20
Lead, Dissolved	0.0227	0.51	0.5427	102	-	-	70-130	-	20
Nickel, Dissolved	0.0022	0.5	0.4898	98	-	-	70-130	-	20
Selenium, Dissolved	ND	0.12	0.1132	94	-	-	70-130	-	20
Silver, Dissolved	ND	0.05	0.0476	95	-	-	70-130	-	20
Zinc, Dissolved	0.0528	0.5	0.6011	110	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1333641-3 QC Sample: L2003068-02 Client ID: SH-102W									
Mercury, Total	ND	0.005	0.00361	72	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1332857-4 QC Sample: L2003068-01 Client ID: SH-101W						
Iron, Total	44.9	44.2	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1332861-4 QC Sample: L2003068-01 Client ID: SH-101W						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00404	0.00433	mg/l	7		20
Cadmium, Total	0.00026	0.00025	mg/l	3		20
Chromium, Total	0.00195	0.00127	mg/l	**42**	Q	20
Copper, Total	0.00145	0.00275	mg/l	**62**	Q	20
Lead, Total	0.1181	0.1245	mg/l	5		20
Nickel, Total	0.00329	0.00261	mg/l	**23**	Q	20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.4140	0.3994	mg/l	4		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333091-4 QC Sample: L2003068-01 Client ID: SH-101W						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1333126-4 QC Sample: L2003068-01 Client ID: SH-101W						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1333126-6 QC Sample: L2000001-180 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333154-4 QC Sample: L2003068-01 Client ID: SH-101W					
Iron, Dissolved	42.0	42.1	mg/l	0	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1333155-4 QC Sample: L2003068-01 Client ID: SH-101W					
Antimony, Dissolved	ND	ND	mg/l	NC	20
Arsenic, Dissolved	0.0037	0.0041	mg/l	11	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Chromium, Dissolved	ND	ND	mg/l	NC	20
Copper, Dissolved	0.0030	0.0025	mg/l	18	20
Lead, Dissolved	0.0227	0.0231	mg/l	2	20
Nickel, Dissolved	0.0022	ND	mg/l	NC	20
Selenium, Dissolved	ND	ND	mg/l	NC	20
Silver, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	0.0528	0.0553	mg/l	5	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1333641-4 QC Sample: L2003068-02 Client ID: SH-102W					
Mercury, Total	ND	0.00024	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-01
Client ID: SH-101W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 14:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	170		mg/l	16	NA	3.3	-	01/23/20 10:35	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	01/23/20 12:30	01/23/20 14:46	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/22/20 19:15	121,4500CL-D	AS
Nitrogen, Ammonia	1.80		mg/l	0.075	--	1	01/24/20 03:41	01/27/20 21:36	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/23/20 16:30	01/23/20 20:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	01/23/20 05:40	01/23/20 12:01	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/22/20 21:30	01/22/20 22:05	1,7196A	AS
Anions by Ion Chromatography - Westborough Lab										
Chloride	387.		mg/l	25.0	--	50	-	01/23/20 06:01	44,300.0	DS

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

SAMPLE RESULTS

Lab ID: L2003068-02
Client ID: SH-102W
Sample Location: EAST BOSTON, MA

Date Collected: 01/22/20 15:00
Date Received: 01/22/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	460		mg/l	25	NA	5	-	01/23/20 10:35	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	01/23/20 12:30	01/23/20 14:48	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/22/20 19:15	121,4500CL-D	AS
Nitrogen, Ammonia	14.5		mg/l	0.750	--	10	01/24/20 03:41	01/27/20 21:46	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/23/20 16:30	01/23/20 20:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	01/23/20 05:40	01/23/20 12:03	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/22/20 21:30	01/22/20 22:07	1,7196A	AS
Anions by Ion Chromatography - Westborough Lab										
Chloride	916.		mg/l	25.0	--	50	-	01/23/20 06:12	44,300.0	DS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1332824-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/22/20 19:15	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1332848-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/22/20 21:30	01/22/20 22:05	1,7196A	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1332946-1										
Phenolics, Total	ND		mg/l	0.030	--	1	01/23/20 05:40	01/23/20 11:51	4,420.1	MV
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1332967-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/23/20 10:35	121,2540D	EM
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1332978-1										
Chloride	ND		mg/l	0.500	--	1	-	01/23/20 04:22	44,300.0	DS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1333086-1										
Cyanide, Total	ND		mg/l	0.005	--	1	01/23/20 12:30	01/23/20 14:40	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1333235-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/23/20 16:30	01/23/20 20:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1333336-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/24/20 03:41	01/27/20 21:17	121,4500NH3-BH	AT

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1332824-2								
Chlorine, Total Residual	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1332848-2								
Chromium, Hexavalent	102		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1332946-2								
Phenolics, Total	96		-		70-130	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG1332978-2								
Chloride	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1333086-2								
Cyanide, Total	92		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1333235-2								
TPH	104		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1333336-2								
Nitrogen, Ammonia	90		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332824-4 QC Sample: L2003068-01 Client ID: SH-101W												
Chlorine, Total Residual	ND	0.25	ND	**0**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332848-4 QC Sample: L2003068-02 Client ID: SH-102W												
Chromium, Hexavalent	ND	0.1	0.099	99		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332946-4 QC Sample: L2003068-01 Client ID: SH-101W												
Phenolics, Total	ND	0.4	0.36	89		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332978-3 QC Sample: L2003087-01 Client ID: MS Sample												
Chloride	358	100	441	**83**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333086-4 QC Sample: L2003068-02 Client ID: SH-102W												
Cyanide, Total	ND	0.2	0.192	96		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333235-4 QC Sample: L2003112-02 Client ID: MS Sample												
TPH	ND	22.2	20.0	90		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333336-4 QC Sample: L2003068-01 Client ID: SH-101W												
Nitrogen, Ammonia	1.80	4	4.83	**76**	Q	-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332824-3 QC Sample: L2003068-01 Client ID: SH-101W						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332848-3 QC Sample: L2003068-01 Client ID: SH-101W						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332946-3 QC Sample: L2003068-01 Client ID: SH-101W						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332967-2 QC Sample: L2002951-03 Client ID: DUP Sample						
Solids, Total Suspended	370	360	mg/l	3		29
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1332978-4 QC Sample: L2003087-01 Client ID: DUP Sample						
Chloride	358	362	mg/l	1		18
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333086-3 QC Sample: L2003068-01 Client ID: SH-101W						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333235-3 QC Sample: L2003087-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1333336-3 QC Sample: L2003068-01 Client ID: SH-101W						
Nitrogen, Ammonia	1.80	1.76	mg/l	2		20

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003068-01A	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003068-01B	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003068-01C	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003068-01D	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003068-01E	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003068-01F	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003068-01G	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003068-01H	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003068-01I	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2003068-01J	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2003068-01K	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2003068-01L	Plastic 250ml HNO3 preserved Filtrates	A	<2	<2	2.2	Y	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),ZN-2008S(180),PB-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)
L2003068-01M	Plastic 250ml HNO3 preserved	A	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),SE-2008T(180),HG-U(28),PB-2008T(180),SB-2008T(180),CR-2008T(180)
L2003068-01N	Plastic 250ml NaOH preserved	A	>12	>12	2.2	Y	Absent		TCN-4500(14)
L2003068-01O	Plastic 500ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		NH3-4500(28)
L2003068-01P	Plastic 950ml unpreserved	A	7	7	2.2	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2003068-01Q	Plastic 950ml unpreserved	A	7	7	2.2	Y	Absent		TSS-2540(7)
L2003068-01R	Amber 950ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		TPHENOL-420(28)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003068-01S	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L2003068-01T	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L2003068-01U	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		625.1-SIM-RGP(7)
L2003068-01V	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		625.1-SIM-RGP(7)
L2003068-01W	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		625.1-RGP(7)
L2003068-01X	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		625.1-RGP(7)
L2003068-01Y	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		PCB-608.3(7)
L2003068-01Z	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		PCB-608.3(7)
L2003068-02A	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-624(7)
L2003068-02B	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-624(7)
L2003068-02C	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-624(7)
L2003068-02D	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-624(7)
L2003068-02E	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-504/8011(14)
L2003068-02F	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-504/8011(14)
L2003068-02G	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-504/8011(14)
L2003068-02H	Vial Na2S2O3 preserved	B	NA		2.8	Y	Absent		HOLD-504/8011(14)
L2003068-02I	Vial unpreserved	B	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2003068-02J	Vial unpreserved	B	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2003068-02K	Vial unpreserved	B	NA		2.8	Y	Absent		SUB-ETHANOL(14)
L2003068-02L	Plastic 250ml HNO3 preserved Filtrates	B	<2	<2	2.8	Y	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),ZN-2008S(180),PB-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)
L2003068-02M	Plastic 250ml HNO3 preserved	B	<2	<2	2.8	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),SE-2008T(180),HG-U(28),PB-2008T(180),SB-2008T(180),CR-2008T(180)
L2003068-02N	Plastic 250ml NaOH preserved	B	>12	>12	2.8	Y	Absent		TCN-4500(14)
L2003068-02O	Plastic 500ml H2SO4 preserved	B	<2	<2	2.8	Y	Absent		NH3-4500(28)
L2003068-02P	Plastic 950ml unpreserved	B	7	7	2.8	Y	Absent		HEXCR-7196(1),CL-300(28),TRC-4500(1)

*Values in parentheses indicate holding time in days

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003068
Report Date: 01/30/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003068-02Q	Plastic 950ml unpreserved	B	7	7	2.8	Y	Absent		TSS-2540(7)
L2003068-02R	Amber 950ml H2SO4 preserved	B	<2	<2	2.8	Y	Absent		TPHENOL-420(28)
L2003068-02S	Amber 1000ml HCl preserved	B	NA		2.8	Y	Absent		TPH-1664(28)
L2003068-02T	Amber 1000ml HCl preserved	B	NA		2.8	Y	Absent		TPH-1664(28)
L2003068-02U	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		625.1-SIM-RGP(7)
L2003068-02V	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		625.1-SIM-RGP(7)
L2003068-02W	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		625.1-RGP(7)
L2003068-02X	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		625.1-RGP(7)
L2003068-02Y	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		PCB-608.3(7)
L2003068-02Z	Amber 1000ml Na2S2O3	B	7	7	2.8	Y	Absent		PCB-608.3(7)

*Values in parentheses indicate holding time in days

Project Name:	144 ADDISON ST	**Lab Number:**	L2003068
Project Number:	4232.00	**Report Date:**	01/30/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	144 ADDISON ST	**Lab Number:**	L2003068
Project Number:	4232.00	**Report Date:**	01/30/20

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report

Project Name:	144 ADDISON ST	**Lab Number:**	L2003068
Project Number:	4232.00	**Report Date:**	01/30/20

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003068
Report Date: 01/30/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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

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

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

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

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

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

107 Alpha Analytical - In-house calculation method.

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

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

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

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

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd in Lab: 1-22-20

ALPHA Job #: L2003068

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

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

Client Information

Client: SANBORN HEAD

Address: 98 N WASHINGTON ST

Phone:

Email: PMALONE@SANBORNHEAD.com

Additional Project Information:

Project Information

Project Name: 144 ADDISON ST

Project Location: EAST BOSTON MA

Project #: 4232.00

Project Manager: PAT MALONE

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	NPDES	Dissolved Metals	SAMPLE INFO: Filtration ☒ Field ☐ Lab to do; Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
03068-01	SH-101W	1/22/20	12-14:00	GW	MRR									X	X			
02	SH-102W	1/22/20	14-15:00	GW	MRR									X	X			
Container Type														P/AG	P			
Preservative														0	C			

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] AAL	1/22/20 15:30	[signature] AAL	1/22/20 16:30
[signature]	1/22/20 1740	[signature]	1/22/20 1740

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

FORM NO: 01-01 (rev. 12-Mar-2012)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2003068

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508-439-5132 Email: akane@alphalab.com	Project Location: MA Project Manager: Ashaley Kane **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2003068

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	SH-101W	01-22-20 14:00	WATER	Ethanol by EPA 1671 Revision A	
	SH-102W	01-22-20 15:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	C Tebeau	1/23/20		
Form No: AL_subcoc				

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

January 29, 2020

Nichole Hunt
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (508) 898-9220
FAX:

RE: L2003068 **WorkOrder:** 20011394

Dear Nichole Hunt:

TEKLAB, INC received 2 samples on 1/24/2020 9:37:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,

Marvin L. Darling II

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

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2003068

Work Order: 20011394
Report Date: 29-Jan-2020

This reporting package includes the following:

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 20011394

Client Project: L2003068 **Report Date:** 29-Jan-2020

Abbr Definition

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

Qualifiers

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

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011394
Client Project: L2003068
Report Date: 29-Jan-2020

Cooler Receipt Temp: 1.4 °C

Locations

Collinsville

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

Springfield

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

Kansas City

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

Collinsville Air

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

Chicago

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

Teklab, Inc.
Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011394
Client Project: L2003068
Report Date: 29-Jan-2020

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

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011394
Client Project: L2003068
Report Date: 29-Jan-2020
Lab ID: 20011394-001
Client Sample ID: SH-101W
Matrix: AQUEOUS
Collection Date: 01/22/2020 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	01/27/2020 18:21	R272233

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011394
Client Project: L2003068
Report Date: 29-Jan-2020
Lab ID: 20011394-002
Client Sample ID: SH-102W
Matrix: AQUEOUS
Collection Date: 01/22/2020 15:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	01/27/2020 18:59	R272233

Teklab, Inc.
Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2003068

Work Order: 20011394
Report Date: 29-Jan-2020

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

Batch R272233 **SampType:** MBLK Units **mg/L**
SampID: MBLK-012720

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						01/27/2020

Batch R272233 **SampType:** LCS Units **mg/L**
SampID: LCS-012720

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**230**	250.0	0	91.9	70	132	01/27/2020

Batch R272233 **SampType:** MS Units **mg/L**
SampID: 20011318-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**230**	250.0	0	91.2	70	132	01/27/2020

Batch R272233 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 20011318-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**270**	250.0	0	108.6	228.0	17.38	01/27/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2003068

Work Order: 20011394
Report Date: 29-Jan-2020

Carrier: UPS

Received By: AH

Completed by: Amanda R. Ham
On: 27-Jan-2020

Reviewed by: Elizabeth A. Hurley
On: 27-Jan-2020

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.4
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☑	No VOA vials ☐	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

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

Headspace was present in the volatile vials. Per Ashley Kane, proceed with analysis. - aham - 1/27/2020 11:44:29 AM

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2003068

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508-439-5132 Email: akane@alphalab.com	Project Location: MA Project Manager: Ashaley Kane **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2003068

Report to include Method Blank, LCS/LCSD:

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

Per Ashaley, Proceed with analysis AH 1/27/20

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
L2003194 -001	SH-101W	01-22-20 14:00	WATER	Ethanol by EPA 1671 Revision A	
-002	SH-102W	01-22-20 15:00	WATER	Ethanol by EPA 1671 Revision A	

HS present.
1.4°C on LCS on ice

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	Celeben	1/23/20	UPS	1/24/20 0937

Form No: AL_subcoc

on ice 1/24/20

ANALYTICAL REPORT

Lab Number:	L2003286
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	144 ADDISON ST
Project Number:	4232.00
Report Date:	02/05/20

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

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

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2003286-01	SH-102WR	WATER	EAST BOSTON, MA	01/23/20 09:00	01/23/20
L2003286-02	SH-103W	WATER	EAST BOSTON, MA	01/23/20 10:00	01/23/20
L2003286-03	SW-1	WATER	EAST BOSTON, MA	01/23/20 11:10	01/23/20
L2003286-04	TRIP BLANKS	WATER	EAST BOSTON, MA	01/23/20 00:00	01/23/20

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

Case Narrative

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

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

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

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

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

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

Project Name: 144 ADDISON ST **Lab Number:** L2003286
Project Number: 4232.00 **Report Date:** 02/05/20

Case Narrative (continued)

Report Submission

February 05, 2020: This final report includes the results of all requested analyses.

January 29, 2020: This is a preliminary report.

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

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

Sample Receipt

The analyses performed were specified by the client.

L2003286-04: A sample identified as "TRIP BLANKS" was received, but not listed on the Chain of Custody. This sample was not analyzed.

Volatile Organics by Method 624

L2003286-02: Due to the matrix of the sample (foam generation during purging/analysis), the laboratory used Anti-Foam solution in the sample and associated QC.

Volatile Organics by SIM

L2003286-02: Due to the matrix of the sample (foam generation during purging/analysis), the laboratory used Anti-Foam solution in the sample and associated QC.

Microextractables

The WG1333569-2 LCS recovery for 1,2-dibromoethane (78%), associated with L2003286-01 through -03, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Total Metals

L2003286-02 and -03: The sample has elevated detection limits for all elements, with the exception of iron and mercury, due to the dilution required by the high concentrations of non-target elements.

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

Case Narrative (continued)

Dissolved Metals

L2003286-02 and -03: The sample has elevated detection limits for all elements, with the exception of iron and mercury, due to the dilution required by the high concentrations of non-target elements.

Nitrogen, Ammonia

The WG1333337-4 MS recovery, performed on L2003286-03, is outside the acceptance criteria for ammonia (66%); however, the associated LCS recovery is within criteria. No further action was taken.

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 02/05/20

ORGANICS

VOLATILES

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-01
Client ID: SH-102WR
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 09:00
Date Received: 01/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 01/26/20 17:53
Analyst: KJD

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

Project Name: 144 ADDISON ST
Lab Number: L2003286
Project Number: 4232.00
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-01
Client ID: SH-102WR
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 09:00
Date Received: 01/23/20
Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	106		60-140
Fluorobenzene	102		60-140
4-Bromofluorobenzene	102		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-01
Client ID: SH-102WR
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 09:00
Date Received: 01/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 01/26/20 17:53
Analyst: KJD

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	87		60-140
4-Bromofluorobenzene	88		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-01
Client ID: SH-102WR
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 09:00
Date Received: 01/23/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 01/24/20 20:07
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/24/20 15:31

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: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 01/26/20 19:07
Analyst: KJD

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

Project Name: 144 ADDISON ST
Lab Number: L2003286
Project Number: 4232.00
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 10:00
Date Received: 01/23/20
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	105		60-140
Fluorobenzene	102		60-140
4-Bromofluorobenzene	95		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 01/26/20 19:07
Analyst: KJD

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	88		60-140
4-Bromofluorobenzene	90		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 01/24/20 20:23
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/24/20 15:31

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: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 01/26/20 18:30
Analyst: KJD

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

Project Name: 144 ADDISON ST
Lab Number: L2003286
Project Number: 4232.00
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 11:10
Date Received: 01/23/20
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	105		60-140
Fluorobenzene	101		60-140
4-Bromofluorobenzene	95		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 01/26/20 18:30
Analyst: KJD

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	87		60-140
4-Bromofluorobenzene	88		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 01/24/20 20:39
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/24/20 15:31

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: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 01/24/20 19:19
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 01/24/20 15:31

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-03 Batch: WG1333569-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 01/26/20 16:02
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1334250-4					
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: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 01/26/20 16:02
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1334250-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	104		60-140
Fluorobenzene	100		60-140
4-Bromofluorobenzene	100		60-140

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 01/26/20 16:02
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03 Batch: WG1334251-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	87		60-140
4-Bromofluorobenzene	91		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-03 Batch: WG1333569-2								
1,2-Dibromoethane	**78**	Q	-		80-120	-			A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1334250-3								
Methylene chloride	90		-		60-140	-		28
1,1-Dichloroethane	85		-		50-150	-		49
Carbon tetrachloride	110		-		70-130	-		41
1,1,2-Trichloroethane	90		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	95		-		70-130	-		49
1,1,1-Trichloroethane	115		-		70-130	-		36
Benzene	105		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	105		-		60-140	-		63
Vinyl chloride	50		-		5-195	-		66
1,1-Dichloroethene	90		-		50-150	-		32
cis-1,2-Dichloroethene	95		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	105		-		65-135	-		57
1,3-Dichlorobenzene	100		-		70-130	-		43
1,4-Dichlorobenzene	100		-		65-135	-		57
p/m-Xylene	102		-		60-140	-		30
o-xylene	100		-		60-140	-		30
Acetone	72		-		40-160	-		30
Methyl tert butyl ether	80		-		60-140	-		30
Tert-Butyl Alcohol	82		-		60-140	-		30
Tertiary-Amyl Methyl Ether	110		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1334250-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	109				60-140
Fluorobenzene	103				60-140
4-Bromofluorobenzene	102				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG1334251-3								
1,4-Dioxane	98		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	88				60-140
4-Bromofluorobenzene	89				60-140

Matrix Spike Analysis

Batch Quality Control

Project Name: 144 ADDISON ST

Project Number: 4232.00

Lab Number: L2003286

Report Date: 02/05/20

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1333569-3 QC Sample: L2003286-01 Client ID: SH-102WR													
1,2-Dibromoethane	ND	0.246	0.198	81		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 01/28/20 14:44
Analyst: JG

Extraction Method: EPA 625.1
Extraction Date: 01/24/20 03:07

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	85		42-122
2-Fluorobiphenyl	85		46-121
4-Terphenyl-d14	77		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 01/25/20 21:55
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/24/20 03:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Naphthalene	0.62		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	0.28		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	0.90		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	48		25-87
Phenol-d6	42		16-65
Nitrobenzene-d5	93		42-122
2-Fluorobiphenyl	96		46-121
2,4,6-Tribromophenol	69		45-128
4-Terphenyl-d14	81		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 01/27/20 15:16
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 01/24/20 03:07

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	82		42-122
2-Fluorobiphenyl	78		46-121
4-Terphenyl-d14	88		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 01/25/20 22:12
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/24/20 03:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	0.22		ug/l	0.10	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	0.18		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	0.12		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	0.10		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	0.16		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	0.19		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		25-87
Phenol-d6	49		16-65
Nitrobenzene-d5	87		42-122
2-Fluorobiphenyl	91		46-121
2,4,6-Tribromophenol	93		45-128
4-Terphenyl-d14	93		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 01/24/20 10:15
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-03 Batch: WG1332964-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	73		42-122
2-Fluorobiphenyl	72		46-121
4-Terphenyl-d14	81		47-138

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 01/24/20 11:43
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 01/23/20 06:21

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02-03 Batch: WG1332965-1					
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	47		25-87
Phenol-d6	34		16-65
Nitrobenzene-d5	80		42-122
2-Fluorobiphenyl	71		46-121
2,4,6-Tribromophenol	87		45-128
4-Terphenyl-d14	88		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-03 Batch: WG1332964-3								
Bis(2-ethylhexyl)phthalate	87		-		29-137	-		82
Butyl benzyl phthalate	85		-		1-140	-		60
Di-n-butylphthalate	85		-		8-120	-		47
Di-n-octylphthalate	83		-		19-132	-		69
Diethyl phthalate	90		-		1-120	-		100
Dimethyl phthalate	98		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	99				42-122
2-Fluorobiphenyl	93				46-121
4-Terphenyl-d14	100				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-03 Batch: WG1332965-2								
Acenaphthene	89		-		60-132	-		30
Fluoranthene	95		-		43-121	-		30
Naphthalene	89		-		36-120	-		30
Benzo(a)anthracene	95		-		42-133	-		30
Benzo(a)pyrene	96		-		32-148	-		30
Benzo(b)fluoranthene	103		-		42-140	-		30
Benzo(k)fluoranthene	84		-		25-146	-		30
Chrysene	88		-		44-140	-		30
Acenaphthylene	86		-		54-126	-		30
Anthracene	89		-		43-120	-		30
Benzo(ghi)perylene	97		-		1-195	-		30
Fluorene	91		-		70-120	-		30
Phenanthrene	94		-		65-120	-		30
Dibenzo(a,h)anthracene	96		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	105		-		1-151	-		30
Pyrene	93		-		70-120	-		30
Pentachlorophenol	77		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-03 Batch: WG1332965-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	56				25-87
Phenol-d6	42				16-65
Nitrobenzene-d5	93				42-122
2-Fluorobiphenyl	80				46-121
2,4,6-Tribromophenol	98				45-128
4-Terphenyl-d14	96				47-138

PCBS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 01/28/20 21:29
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 01/24/20 10:06
Cleanup Method: EPA 3665A
Cleanup Date: 01/24/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/25/20

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		37-123	B
Decachlorobiphenyl	49		38-114	B
2,4,5,6-Tetrachloro-m-xylene	65		37-123	A
Decachlorobiphenyl	43		38-114	A

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 01/28/20 21:41
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 01/24/20 10:06
Cleanup Method: EPA 3665A
Cleanup Date: 01/24/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/25/20

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		37-123	B
Decachlorobiphenyl	84		38-114	B
2,4,5,6-Tetrachloro-m-xylene	75		37-123	A
Decachlorobiphenyl	69		38-114	A

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 01/28/20 22:42
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 01/24/20 10:06
Cleanup Method: EPA 3665A
Cleanup Date: 01/24/20
Cleanup Method: EPA 3660B
Cleanup Date: 01/25/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 02-03 Batch: WG1333512-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		37-123	B
Decachlorobiphenyl	77		38-114	B
2,4,5,6-Tetrachloro-m-xylene	80		37-123	A
Decachlorobiphenyl	68		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 02-03 Batch: WG1333512-2									
Aroclor 1016	77		-		50-140	-		36	A
Aroclor 1260	70		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81				37-123	B
Decachlorobiphenyl	81				38-114	B
2,4,5,6-Tetrachloro-m-xylene	83				37-123	A
Decachlorobiphenyl	72				38-114	A

METALS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.04000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.01000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00200	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Chromium, Total	0.01075		mg/l	0.01000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.01000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Iron, Total	5.23		mg/l	0.050	--	1	01/24/20 12:35	01/27/20 16:58	EPA 3005A	19,200.7	LC
Lead, Total	0.01848		mg/l	0.01000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	01/24/20 14:27	01/24/20 18:26	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.02000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.05000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00400	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
Zinc, Total	0.1508		mg/l	0.1000	--	10	01/24/20 12:35	01/25/20 00:00	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		01/25/20 00:00	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0400	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0100	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0020	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0100	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0100	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Iron, Dissolved	0.494		mg/l	0.050	--	1	01/24/20 15:24	01/27/20 19:42	EPA 3005A	19,200.7	LC
Lead, Dissolved	ND		mg/l	0.0100	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/24/20 12:47	01/24/20 17:44	EPA 245.1	3,245.1	AL
Nickel, Dissolved	ND		mg/l	0.0200	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0500	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0040	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.1000	--	10	01/24/20 15:24	01/25/20 01:21	EPA 3005A	3,200.8	AM

Project Name: 144 ADDISON ST
Lab Number: L2003286
Project Number: 4232.00
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.08000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.02000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00400	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.02000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.02000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Iron, Total	0.089		mg/l	0.050	--	1	01/24/20 12:35	01/27/20 17:03	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.02000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	01/24/20 14:27	01/24/20 18:28	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.04000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.1000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00800	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.2000	--	20	01/24/20 12:35	01/25/20 02:39	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.020	--	1		01/25/20 02:39	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0800	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0200	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0040	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0200	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0200	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Iron, Dissolved	ND		mg/l	0.050	--	1	01/24/20 15:24	01/27/20 20:23	EPA 3005A	19,200.7	LC
Lead, Dissolved	ND		mg/l	0.0200	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/24/20 12:47	01/24/20 17:55	EPA 245.1	3,245.1	AL
Nickel, Dissolved	ND		mg/l	0.0400	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.1000	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0080	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.2000	--	20	01/24/20 15:24	01/25/20 02:07	EPA 3005A	3,200.8	AM

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333553-1										
Iron, Total	ND		mg/l	0.050	--	1	01/24/20 12:35	01/27/20 13:20	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333557-1										
Antimony, Total	ND		mg/l	0.00400	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	01/24/20 12:35	01/25/20 00:18	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	01/24/20 12:35	01/25/20 00:18	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
Dissolved Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333565-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	01/24/20 12:47	01/24/20 17:15	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333595-1										
Mercury, Total	ND		mg/l	0.00020	--	1	01/24/20 14:27	01/24/20 17:57	3,245.1	AL

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333598-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	01/24/20 15:24	01/27/20 19:16	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02-03 Batch: WG1333601-1										
Antimony, Dissolved	ND		mg/l	0.0040	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0010	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Nickel, Dissolved	ND		mg/l	0.0020	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	01/24/20 15:24	01/25/20 00:22	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333553-2								
Iron, Total	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333557-2								
Antimony, Total	86		-		85-115	-		
Arsenic, Total	108		-		85-115	-		
Cadmium, Total	115		-		85-115	-		
Chromium, Total	101		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	103		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	113		-		85-115	-		
Silver, Total	101		-		85-115	-		
Zinc, Total	107		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333565-2								
Mercury, Dissolved	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333595-2								
Mercury, Total	102		-		85-115	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333598-2					
Iron, Dissolved	103	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 Batch: WG1333601-2					
Antimony, Dissolved	89	-	85-115	-	
Arsenic, Dissolved	108	-	85-115	-	
Cadmium, Dissolved	114	-	85-115	-	
Chromium, Dissolved	104	-	85-115	-	
Copper, Dissolved	103	-	85-115	-	
Lead, Dissolved	104	-	85-115	-	
Nickel, Dissolved	100	-	85-115	-	
Selenium, Dissolved	112	-	85-115	-	
Silver, Dissolved	103	-	85-115	-	
Zinc, Dissolved	110	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333553-3 QC Sample: L2003271-01 Client ID: MS Sample												
Iron, Total	0.084	1	1.11	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333553-7 QC Sample: L2003341-01 Client ID: MS Sample												
Iron, Total	3.10	1	4.18	108		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333557-3 QC Sample: L2003341-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4905	98		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1299	108		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05736	112		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1974	99		-	-		70-130	-		20
Copper, Total	0.00464	0.25	0.2424	95		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5296	104		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4643	93		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1472	123		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04959	99		-	-		70-130	-		20
Zinc, Total	0.06638	0.5	0.6056	108		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333565-3 QC Sample: L2003286-02 Client ID: SH-103W												
Mercury, Dissolved	ND	0.005	0.00384	77		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333595-3 QC Sample: L2003059-02 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00504	101		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333595-5 QC Sample: L2003193-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00527	106		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333598-3 QC Sample: L2003286-02 Client ID: SH-103W									
Iron, Dissolved	0.494	1	1.44	95	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333601-3 QC Sample: L2003286-02 Client ID: SH-103W									
Antimony, Dissolved	ND	0.5	0.4978	100	-	-	70-130	-	20
Arsenic, Dissolved	ND	0.12	0.1244	104	-	-	70-130	-	20
Cadmium, Dissolved	ND	0.051	0.0511	100	-	-	70-130	-	20
Chromium, Dissolved	ND	0.2	0.1975	99	-	-	70-130	-	20
Copper, Dissolved	ND	0.25	0.2369	95	-	-	70-130	-	20
Lead, Dissolved	ND	0.51	0.5228	102	-	-	70-130	-	20
Nickel, Dissolved	ND	0.5	0.4829	96	-	-	70-130	-	20
Selenium, Dissolved	ND	0.12	0.1117	93	-	-	70-130	-	20
Silver, Dissolved	ND	0.05	0.0487	97	-	-	70-130	-	20
Zinc, Dissolved	ND	0.5	0.4647	93	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333553-4 QC Sample: L2003271-01 Client ID: DUP Sample						
Iron, Total	0.084	0.081	mg/l	4		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333553-8 QC Sample: L2003341-01 Client ID: DUP Sample						
Iron, Total	3.10	3.12	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333557-4 QC Sample: L2003341-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	0.00100	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.00464	0.00401	mg/l	14		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.06638	0.06268	mg/l	6		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333565-4 QC Sample: L2003286-02 Client ID: SH-103W						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333595-4 QC Sample: L2003059-02 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333595-6 QC Sample: L2003193-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333598-4 QC Sample: L2003286-02 Client ID: SH-103W					
Iron, Dissolved	0.494	0.480	mg/l	3	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-03 QC Batch ID: WG1333601-4 QC Sample: L2003286-02 Client ID: SH-103W					
Antimony, Dissolved	ND	ND	mg/l	NC	20
Arsenic, Dissolved	ND	ND	mg/l	NC	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Chromium, Dissolved	ND	ND	mg/l	NC	20
Copper, Dissolved	ND	ND	mg/l	NC	20
Lead, Dissolved	ND	ND	mg/l	NC	20
Nickel, Dissolved	ND	ND	mg/l	NC	20
Selenium, Dissolved	ND	ND	mg/l	NC	20
Silver, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-02
Client ID: SH-103W
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 10:00
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	150		mg/l	12	NA	2.5	-	01/24/20 09:10	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	01/24/20 02:06	01/24/20 11:47	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/23/20 21:22	121,4500CL-D	AS
Nitrogen, Ammonia	25.2		mg/l	0.750	--	10	01/24/20 03:41	01/27/20 21:20	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/24/20 16:30	01/24/20 21:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	01/27/20 05:15	01/28/20 06:58	4,420.1	MV
Chromium, Hexavalent	0.027		mg/l	0.010	--	1	01/24/20 01:30	01/24/20 02:28	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	2660		mg/l	50.0	--	100	-	01/24/20 01:53	44,300.0	DS

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

SAMPLE RESULTS

Lab ID: L2003286-03
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	7.4		mg/l	5.0	NA	1	-	01/24/20 09:10	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	01/24/20 02:06	01/24/20 11:48	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/23/20 21:22	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/26/20 03:47	01/27/20 23:33	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.40	--	1.1	01/24/20 16:30	01/24/20 21:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	01/27/20 05:15	01/28/20 06:59	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/24/20 01:30	01/24/20 02:31	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	17400		mg/l	250	--	500	-	01/24/20 03:51	44,300.0	DS

Project Name: 144 ADDISON ST
Project Number: 4232.00
Lab Number: L2003286
Report Date: 02/05/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1333289-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	01/23/20 21:22	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1333336-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/24/20 03:41	01/27/20 21:17	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1333337-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/26/20 03:47	01/27/20 23:19	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1333347-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	01/24/20 01:30	01/24/20 02:16	1,7196A	CB
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1333359-1										
Cyanide, Total	ND		mg/l	0.005	--	1	01/24/20 02:06	01/24/20 11:37	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 02-03 Batch: WG1333389-1										
Chloride	ND		mg/l	0.500	--	1	-	01/24/20 00:42	44,300.0	DS
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1333416-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	01/24/20 09:10	121,2540D	EM
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1333658-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/24/20 16:30	01/24/20 21:00	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1334060-1										
Phenolics, Total	ND		mg/l	0.030	--	1	01/27/20 05:15	01/28/20 06:55	4,420.1	MV

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1333289-2								
Chlorine, Total Residual	108		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1333336-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1333337-2								
Nitrogen, Ammonia	96		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1333347-2								
Chromium, Hexavalent	105		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1333359-2								
Cyanide, Total	93		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-03 Batch: WG1333389-2								
Chloride	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1333658-2								
TPH	86		-		64-132	-		34

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1334060-2					
Phenolics, Total	98	-	70-130	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333289-4 QC Sample: L2003286-03 Client ID: SW-1												
Chlorine, Total Residual	ND	0.25	0.25	100		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1333336-4 QC Sample: L2003068-01 Client ID: MS Sample												
Nitrogen, Ammonia	1.80	4	4.83	**76**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1333337-4 QC Sample: L2003286-03 Client ID: SW-1												
Nitrogen, Ammonia	ND	4	2.62	**66**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333347-4 QC Sample: L2003286-03 Client ID: SW-1												
Chromium, Hexavalent	ND	0.1	0.107	107		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333359-4 QC Sample: L2003357-02 Client ID: MS Sample												
Cyanide, Total	0.020	0.2	0.188	**84**	Q	-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333389-3 QC Sample: L2003355-01 Client ID: MS Sample												
Chloride	5640	2000	6660	**51**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333658-4 QC Sample: L2003271-02 Client ID: MS Sample												
TPH	ND	20	18.9	94		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1334060-4 QC Sample: L2003493-02 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.28	70		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333289-3 QC Sample: L2003286-02 Client ID: SH-103W						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1333336-3 QC Sample: L2003068-01 Client ID: DUP Sample						
Nitrogen, Ammonia	1.80	1.76	mg/l	2		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1333337-3 QC Sample: L2003286-03 Client ID: SW-1						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333347-3 QC Sample: L2003286-02 Client ID: SH-103W						
Chromium, Hexavalent	0.027	0.028	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333359-3 QC Sample: L2003357-01 Client ID: DUP Sample						
Cyanide, Total	0.118	0.113	mg/l	4		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333389-4 QC Sample: L2003355-01 Client ID: DUP Sample						
Chloride	5640	5850	mg/l	4		18
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333416-2 QC Sample: L2003357-01 Client ID: DUP Sample						
Solids, Total Suspended	3200	3400	mg/l	6		29
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1333658-3 QC Sample: L2003271-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1334060-3 QC Sample: L2003493-02 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003286-01A	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-01A1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-01B	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-01B1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-01C	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-01C1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-01D	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-01D1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-02A	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-02A1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2003286-02B	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-02B1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2003286-02C	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-02C1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2003286-02D	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		504(14)
L2003286-02D1	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2003286-02E	Vial unpreserved	B	NA		3.1	Y	Absent		SUB-ETHANOL(14)
L2003286-02F	Vial unpreserved	B	NA		3.1	Y	Absent		SUB-ETHANOL(14)
L2003286-02G	Vial unpreserved	B	NA		3.1	Y	Absent		SUB-ETHANOL(14)
L2003286-02H	Plastic 250ml HNO3 preserved	B	<2	<2	3.1	Y	Absent		FE-RI(180),AG-2008S(180),CR-2008S(180),AS-2008S(180),PB-2008S(180),NI-2008S(180),CU-2008S(180),CD-2008S(180),HG-R(28)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003286-02I	Plastic 250ml HNO3 preserved	B	<2	<2	3.1	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),ZN-2008S(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),SE-2008S(180),SB-2008S(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2003286-02J	Plastic 250ml NaOH preserved	B	>12	>12	3.1	Y	Absent		TCN-4500(14)
L2003286-02K	Plastic 500ml H2SO4 preserved	B	<2	<2	3.1	Y	Absent		NH3-4500(28)
L2003286-02L	Plastic 950ml unpreserved	B	9	9	3.1	Y	Absent		HEXCR-7196(1),CL-300(28),TRC-4500(1)
L2003286-02M	Plastic 950ml unpreserved	B	9	9	3.1	Y	Absent		TSS-2540(7)
L2003286-02N	Amber 950ml H2SO4 preserved	B	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L2003286-02O	Amber 1000ml HCl preserved	B	NA		3.1	Y	Absent		TPH-1664(28)
L2003286-02P	Amber 1000ml HCl preserved	B	NA		3.1	Y	Absent		TPH-1664(28)
L2003286-02Q	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		PCB-608.3(7)
L2003286-02R	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		PCB-608.3(7)
L2003286-02S	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-02T	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-02U	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-02V	Amber 1000ml Na2S2O3	B	9	9	3.1	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-03A	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003286-03A1	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-03B	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003286-03B1	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-03C	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003286-03C1	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-03D	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L2003286-03D1	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2003286-03E	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2003286-03F	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)
L2003286-03G	Vial unpreserved	A	NA		2.2	Y	Absent		SUB-ETHANOL(14)

*Values in parentheses indicate holding time in days

Project Name: 144 ADDISON ST
Project Number: 4232.00

Lab Number: L2003286
Report Date: 02/05/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003286-03H	Plastic 250ml HNO3 preserved	A	<2	<2	2.2	Y	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),PB-2008S(180),NI-2008S(180),CD-2008S(180),CU-2008S(180),HG-R(28)
L2003286-03I	Plastic 250ml HNO3 preserved	A	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),ZN-2008S(180),CU-2008T(180),AG-2008T(180),SE-2008S(180),SE-2008T(180),HG-U(28),AS-2008T(180),SB-2008S(180),SB-2008T(180),PB-2008T(180),CR-2008T(180)
L2003286-03J	Plastic 250ml NaOH preserved	A	>12	>12	2.2	Y	Absent		TCN-4500(14)
L2003286-03K	Plastic 500ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		NH3-4500(28)
L2003286-03L	Plastic 950ml unpreserved	A	8	8	2.2	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2003286-03M	Plastic 950ml unpreserved	A	8	8	2.2	Y	Absent		TSS-2540(7)
L2003286-03N	Amber 950ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		TPHENOL-420(28)
L2003286-03O	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L2003286-03P	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L2003286-03Q	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		PCB-608.3(7)
L2003286-03R	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		PCB-608.3(7)
L2003286-03S	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-03T	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-03U	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-03V	Amber 1000ml Na2S2O3	A	8	8	2.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2003286-04A	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-504/8011(14)
L2003286-04B	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-504/8011(14)
L2003286-04C	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-624(7)
L2003286-04D	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-624(7)
L2003286-04E	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-624(7)
L2003286-04F	Vial Na2S2O3 preserved	B	NA		3.1	Y	Absent		HOLD-624(7)

*Values in parentheses indicate holding time in days

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	144 ADDISON ST	**Lab Number:**	L2003286
Project Number:	4232.00	**Report Date:**	02/05/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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

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

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

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

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

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

107 Alpha Analytical - In-house calculation method.

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

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

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
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, SM4500NO2-B
EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.
Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.
Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

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

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/23/20

ALPHA Job #: L2003286

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: SANBORN HEAD
Address: 98 N WASHINGTON ST #101, BOSTON MA 02114
Phone: (603) 279-1900
Email: PMALONE@SANBORNHEAD.COM

Additional Project Information:

Project Information

Project Name: 144 ADDISON ST
Project Location: EAST BOSTON MA
Project #: 4232.00
Project Manager: PAT MALONE
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☑ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	NPDES RGP	Dissolved Metals NPDES Mal - H					Sample Comments	TOTAL # BOTTLES
03286-01	SH-102WR	1/23/20	08:30-09:00	GW	MRR										X						
-02	SH-103W	1/23/20	09-10:00	GW	MRR									X	X						
-03	SW-1	1/23/20	10:10-15:10	GW	MRR									X	X						
Container Type														P/A	P	V					
Preservative														O	C	H					

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Maria R Mineano	1/23/20 1300		1/23/20 1430
	1/23/20 1800		1/23/20 1840

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

FORM NO: 01-01 (rev. 12-Mar-2012)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

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

Alpha Job Number
L2003286

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508-439-5132 Email: akane@alphalab.com	Project Location: MA Project Manager: Ashaley Kane **Turnaround & Deliverables Information** Due Date: 02/11/20 Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2003286

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	SH-103W	01-23-20 10:00	WATER	Ethanol by EPA 1671 Revision A	
	SW-1	01-23-20 11:10	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		1/27/20		
Form No: AL_subcoc				

February 04, 2020

Ashaley Kane
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (508) 439-5132
FAX:

RE: L2003286 **WorkOrder:** 20011529

Dear Ashaley Kane:

TEKLAB, INC received 2 samples on 1/28/2020 9:40:00 AM for the analysis presented in the following report.

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

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

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

Sincerely,

Marvin L. Darling II

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

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011529
Client Project: L2003286
Report Date: 04-Feb-2020

This reporting package includes the following:

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical | **Work Order:** 20011529

Client Project: L2003286 | **Report Date:** 04-Feb-2020

Abbr Definition

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

Qualifiers

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

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011529
Client Project: L2003286
Report Date: 04-Feb-2020

Cooler Receipt Temp: 1.6 °C

Locations

Collinsville

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

Springfield

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

Kansas City

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

Collinsville Air

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

Chicago

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

Teklab, Inc.
Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011529

Client Project: L2003286
Report Date: 04-Feb-2020

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

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011529
Client Project: L2003286
Report Date: 04-Feb-2020
Lab ID: 20011529-001
Client Sample ID: SH-103W
Matrix: AQUEOUS
Collection Date: 01/23/2020 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	01/29/2020 12:16	R272345

Teklab, Inc.
Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20011529
Client Project: L2003286
Report Date: 04-Feb-2020
Lab ID: 20011529-002
Client Sample ID: SW-1
Matrix: AQUEOUS
Collection Date: 01/23/2020 11:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	01/29/2020 12:54	R272345

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2003286

Work Order: 20011529
Report Date: 04-Feb-2020

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

Batch R272345 **SampType:** MBLK Units **mg/L**
SampID: MBLK-012920

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						01/29/2020

Batch R272345 **SampType:** LCS Units **mg/L**
SampID: LCS-012920

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**260**	250.0	0	103.3	70	132	01/29/2020

Batch R272345 **SampType:** MS Units **mg/L**
SampID: 20011529-002AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**270**	250.0	0	107.4	70	132	01/29/2020

Batch R272345 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 20011529-002AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**260**	250.0	0	103.7	268.5	3.53	01/29/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2003286

Work Order: 20011529
Report Date: 04-Feb-2020

Carrier: UPS

Received By: KMT

Completed by: Amber M. Dilallo
On: 28-Jan-2020

Reviewed by: Elizabeth A. Hurley
On: 28-Jan-2020

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

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.6
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

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

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

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

Serial_No:02052012:13
2001529

Subcontract Chain of Custody

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

Alpha Job Number
L2003286

Client Information

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

Phone: 508-439-5132
Email: akane@alphalab.com

Project Information

Project Location: MA
Project Manager: Ashaley Kane

Turnaround & Deliverables Information

Due Date: 02/11/20
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2003286

Report to include Method Blank, LCS/LCSD:

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

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
2001529-001	SH-103W	01-23-20 10:00	WATER	Ethanol by EPA 1671 Revision A	
002	SW-1	01-23-20 11:10	WATER	Ethanol by EPA 1671 Revision A	

4°C CLT63
iu
OK HS in 3 of 3 SH-103W vials,
Ø HS in remaining vial
1/28/20

	Relinquished By:	Date/Time:	Received By:	Date/Time:
		1/27/20	UPS	1/28/20 0940
Form No: AL_subcoc				

1/28/20

ANALYTICAL REPORT

Lab Number:	L2006214
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	144 ADDISON ST.
Project Number:	4232.00
Report Date:	02/17/20

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

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

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2006214-01	SW-1	WATER	EAST BOSTON, MA	01/23/20 11:10	01/23/20

Project Name:	144 ADDISON ST.	**Lab Number:**	L2006214
Project Number:	4232.00	**Report Date:**	02/17/20

Case Narrative

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

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

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

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

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

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

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

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

METALS

Project Name: 144 ADDISON ST.
Lab Number: L2006214
Project Number: 4232.00
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2006214-01
Client ID: SW-1
Sample Location: EAST BOSTON, MA
Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	4040		mg/l	0.660	NA	1	02/12/20 14:12	02/14/20 18:28	EPA 3005A	19,200.7	LC

Project Name: 144 ADDISON ST.
Project Number: 4232.00
Lab Number: L2006214
Report Date: 02/17/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1339926-1										
Hardness	ND		mg/l	0.660	NA	1	02/12/20 14:12	02/14/20 11:46	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab	Associated sample(s): 01		Batch: WG1339926-2					
Hardness	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1339926-3 QC Sample: L2005829-02 Client ID: MS Sample												
Hardness	10.6	66.2	74.9	97		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

SAMPLE RESULTS

Lab ID: L2006214-01
Client ID: SW-1
Sample Location: EAST BOSTON, MA

Sample Depth:
Matrix: Water

Date Collected: 01/23/20 11:10
Date Received: 01/23/20
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.8		SU	-	NA	1	-	02/12/20 06:42	121,4500H+-B	JA

Lab Control Sample Analysis
Batch Quality Control

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1339795-1								
pH	100		-		99-101	-		5

Lab Duplicate Analysis

Batch Quality Control

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1339795-2 QC Sample: L2006214-01 Client ID: SW-1						
pH (H)	7.8	7.7	SU	1		5

Project Name: 144 ADDISON ST.
Project Number: 4232.00

Lab Number: L2006214
Report Date: 02/17/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2006214-01A	Plastic 950ml unpreserved	A	8	8	2.2	Y	Absent		PH-4500(.01)
L2006214-01B	Plastic 250ml HNO3 preserved	A	<2	<2	2.2	Y	Absent		HARDU(180)

*Values in parentheses indicate holding time in days

Project Name:	144 ADDISON ST.	**Lab Number:**	L2006214
Project Number:	4232.00	**Report Date:**	02/17/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	144 ADDISON ST.	**Lab Number:**	L2006214
Project Number:	4232.00	**Report Date:**	02/17/20

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report

Project Name:	144 ADDISON ST.	**Lab Number:**	L2006214
Project Number:	4232.00	**Report Date:**	02/17/20

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name: 144 ADDISON ST. **Lab Number:** L2006214

Project Number: 4232.00 **Report Date:** 02/17/20

REFERENCES

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.

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B
EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.
Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.
Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.

Mansfield Facility:

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

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

2/11/20 AR L2006214

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 1/23/20

ALPHA Job #: L2003286

Client Information

Client: SANBORN HEAD
Address: C/8 (?) N WASHINGTON ST #101, BOSTON MA 02114
Phone: (603) 229-1900
Email: PMALONE@SANBORNHEAD.com

Additional Project Information:

Project Information

Project Name: 144 ADDISON ST
Project Location: EAST BOSTON MA
Project #: 4232.00
Project Manager: PAT MALONE
ALPHA Quote #:

Turn-Around Time

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

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; [illegible]; [illegible]; [illegible]; pH; Hardness

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	[illegible]	[illegible]	[illegible]	pH	Hardness	Sample Comments	TOTAL # BOTTLES
~~03286-01~~ (?)	SH-102W R	1/23/20	08:30-09:10 (?)	GW	MRR			X				
-02	SH-103W	1/23/20	09-10:00	GW	MRR	X	X					
06214-0103	SW-1	1/23/20	1040-1130	GW	MRR	X	X		X	X		

Container Type	A/P	P	V
Preservative	O	C	H

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

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	1/23/20 1300	[signature]	1/23/20 1430
[signature]	1/23/20 1800	[signature]	1/23/20 1800

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

FORM NO: 01-01 (rev. 12-Mar-2012)

APPENDIX E

MUNICIPAL CORRESPONDENCE AND DEWATERING PERMIT

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Dellbrook JKS Address: One Adams Place, 859 Willard Street

Phone Number: _____ Fax number: _____

Contact person name: _____ Title: Project Manager

Cell number: _____ Email address: _____

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

Owner's Information (if different from above):

Owner of property being dewatered: 144 Addison St, LLC

Owner's mailing address: 265 Franklin St, 6th Floor, Boston, MA 02110 Phone number: 617-904-7000

Location of Discharge & Proposed Treatment System(s):

Street number and name: 144 Addison Street Neighborhood East Boston

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

Describe Proposed Pre-Treatment System(s): Settling tank, bag filter, other treatment components

BWSC Outfall No. 29N135 Receiving Waters Chelsea River

Temporary Discharges (Provide Anticipated Dates of Discharge): From 03/01/2020 To 02/01/2021

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

Permanent Discharges

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

---

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: Jodi Dobay, Engineering Customer Service
E-mail: beginj@bwsc.org
Phone: 617-989-7259 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: _____ Date: _____

Table 1-1. BWSC Stormwater Outfalls

OUTFALL NUMBER		LOCATION	NEIGHBORHOOD	SIZE (INCHES)	RECEIVING WATER
23H042	MAJOR	DEERFIELD ST	BOSTON PROPER	116X120	CHARLES RIVER
23L015	NON MAJOR	NORTHERN AVE	SOUTH BOSTON	24	BOSTON INNER HARBOR
23L074	NON MAJOR	SUMMER ST BRIDGE	SOUTH BOSTON	15	FORT POINT CHANNEL
23L075	MAJOR	CONGRESS ST BRIDGE	SOUTH BOSTON	54	FORT POINT CHANNEL
23L164	MAJOR	CONGRESS ST BRIDGE	BOSTON PROPER	48	FORT POINT CHANNEL
23L195	MAJOR	NORTHERN AVE	SOUTH BOSTON	36	BOSTON INNER HARBOR
23L196	MAJOR	NEW NORTHERN AVE BRIDGE	SOUTH BOSTON	36	FORT POINT CHANNEL
23L202	MAJOR	NORTHERN AVE	SOUTH BOSTON	36	BOSTON INNER HARBOR
24C039	NON MAJOR	NEWTON ST	ALLSTON/BRIGHTON	21	CHARLES RIVER
24C174	NON MAJOR	EASEMENT/NEWTON STREET	ALLSTON/BRIGHTON	24	CHARLES RIVER
24D032	MAJOR	N OF BEACON ST, ABOUT 800' E OF PARSONS ST	ALLSTON/BRIGHTON	119X130	CHARLES RIVER
24D150	MAJOR	SOLDIERS FIELD PLACE	ALLSTON/BRIGHTON	36	CHARLES RIVER
24G034	MAJOR	SOLDIERS FIELD ROAD, S OF CAMBRDIGE ST	ALLSTON/BRIGHTON	36	CHARLES RIVER
24G035	MAJOR	SOLDIERS FIELD ROAD/BABCOCK ST	ALLSTON/BRIGHTON	90X84	CHARLES RIVER
24L022	MAJOR	COURTHOUSE WAY	SOUTH BOSTON	48	BOSTON HARBOR
24L233	MAJOR	ROWE'S WHARF/ATLANTIC AVE	BOSTON PROPER	42	BOSTON HARBOR
25D040	MAJOR	ABOUT 390' N OF INTERSECTION OF SOLDIERS FIELD & WESTERN AVE	ALLSTON/BRIGHTON	36	CHARLES RIVER
25E037	MAJOR	EASEMENT/TELFORD ST	ALLSTON/BRIGHTON	66	CHARLES RIVER
25G041	NON MAJOR	SOLDIERS FIELD RD/NORTH OF WESTERN AVE BRIDGE	ALLSTON/BRIGHTON	24	CHARLES RIVER
25L058	MAJOR	CHRISTOPHER COLUMBUS PARK-WATERFRONT	BOSTON PROPER	84	BOSTON INNER HARBOR
25L144	NON MAJOR	CLARK STREET	BOSTON PROPER	12	BOSTON INNER HARBOR
25M006	MAJOR	MARGINAL ST EXT	EAST BOSTON	36	BOSTON INNER HARBOR
25M007	MAJOR	MARGINAL ST EXT (NEAR ORLEANS ST)	EAST BOSTON	42	BOSTON INNER HARBOR
26F038	MAJOR	HARVARD ST EXT	ALLSTON/BRIGHTON	36	CHARLES RIVER
26G001	MAJOR	SOLDIERS FIELD ROAD/EAST OF HARVARD UNIVERSITY	ALLSTON/BRIGHTON	36	CHARLES RIVER
26J049	MAJOR	NASHUA STREET	BOSTON PROPER	60	CHARLES RIVER
26J052	NON MAJOR	MONSIGNOR O'BRIEN HWY	BOSTON PROPER	12	CHARLES RIVER
26J101 (replaced 26J055)	MAJOR	LEVERETT CIRCLE	BOSTON PROPER	36	BOSTON INNER HARBOR
26K035	MAJOR	BEVERLY STREET NEAR WARREN BRIDGE	BOSTON PROPER	48x72	CHARLES RIVER
26K050	MAJOR	NASHUA STREET	BOSTON PROPER	36	CHARLES RIVER
26K052	NON MAJOR	COMMERCIAL STREET AT CHARTER ST.	BOSTON PROPER	16x24	CHARLES RIVER
26K099	MAJOR	WARREN ST EXT (FORMERLY CHELSEA ST/JOINER EXT)	CHARLESTOWN	84	CHARLES RIVER
26K254	MAJOR	NORTH WASHINGTON ST BRIDGE	CHARLESTOWN	36	BOSTON HARBOR
26L106	MAJOR	NEAR BATTERY WHARF	BOSTON PROPER	24X24	BOSTON INNER HARBOR
26L070	MAJOR	HANOVER ST EXT	BOSTON PROPER	36	BOSTON INNER HARBOR
26L084	MAJOR	LEWIS STREET	EAST BOSTON	18	BOSTON INNER HARBOR
27J001	MAJOR	EASEMENT/INTERSTATE 93	CHARLESTOWN	72	MILLERS RIVER
27J044	MAJOR	PRISON POINT BRIDGE	CHARLESTOWN	15	MILLERS RIVER
27J096	MAJOR	EASEMENT/INTERSTATE 93	CHARLESTOWN	54	MILLERS RIVER
27L020/22	MAJOR	PIER 4 EASEMENT - NAVY YARD	CHARLESTOWN	2-20&24	BOSTON INNER HARBOR
28K010	MAJOR	OLD LANDING WAY EXT	CHARLESTOWN	42	LITTLE MYSTIC CHANNEL
28K061	MAJOR	EASEMENT/MEDFORD ST/OLD IRONSIDE	CHARLESTOWN	42	LITTLE MYSTIC CHANNEL
28K386	MAJOR	EASEMENT/TERMINAL ST	CHARLESTOWN	30	LITTLE MYSTIC CHANNEL
28L073	NON MAJOR	EASEMENT/5TH AVE - NAVY YARD	CHARLESTOWN	6	LITTLE MYSTIC CHANNEL
28L074/075/076	MAJOR	16TH ST/5TH AVE - NAVY YARD	CHARLESTOWN	3-30	LITTLE MYSTIC CHANNEL
28L077	NON MAJOR	EASEMENT/16TH ST - NAVY YARD	CHARLESTOWN	10	LITTLE MYSTIC CHANNEL
28N156	NON MAJOR	COLERIDGE ST EXT	EAST BOSTON	12	BOSTON HARBOR
28N207	MAJOR	MOORE ST	EAST BOSTON	54X57	BOSTON HARBOR
28O025	NON MAJOR	COLERIDGE/WADSWORTH ST. EXT	EAST BOSTON	30	BOSTON HARBOR
28P001	NON MAJOR	EASEMENT/NANCIA STREET	EAST BOSTON	12	BOSTON HARBOR
29J029	NON MAJOR	ALFORD STREET/RYAN PLGD	CHARLESTOWN	15	MYSTIC RIVER
29J129	MAJOR	ALFORD STREET SOUTH	CHARLESTOWN	15	MYSTIC RIVER
29J212	MAJOR	EASEMENT/MEDFORD ST(NEXT TO CSO 017)	CHARLESTOWN	72	MYSTIC RIVER
29M049	MAJOR	CONDOR STREET	EAST BOSTON	48	CHELSEA RIVER
29N015	MAJOR	CHELSEA STREET	EAST BOSTON	42X44.5	CHELSEA RIVER
29N135	MAJOR	ADDISON ST	EAST BOSTON	30X30	CHELSEA RIVER
29O001	MAJOR	BENNINGTON ST (CONSTITUTION BEACH)	EAST BOSTON	66	BOSTON HARBOR NEAR CONSTITUTION BEACH
29P005	NON MAJOR	SARATOGA STREET	EAST BOSTON	12	BOSTON HARBOR
29P044	NON MAJOR	SHAWSHEEN ST	EAST BOSTON	12	BOSTON HARBOR
30J006	MAJOR	EASEMENT/ALFORD ST/EVERETT	CHARLESTOWN	18	MYSTIC RIVER
30J019	MAJOR	ALFORD ST/NORTH	CHARLESTOWN	15	MYSTIC RIVER
30J030	MAJOR	EASEMENT/ARLINGTON AVE	CHARLESTOWN	42	MYSTIC RIVER
30P062	NON MAJOR	PALERMO AVE EXT	EAST BOSTON	12	WETLANDS
30P107	NON MAJOR	WALDEMAR AVENUE	EAST BOSTON	15	WETLANDS
31O004	NON MAJOR	EASEMENT/WALDEMAR AVE	EAST BOSTON	15	CHELSEA RIVER
31P084	NON MAJOR	EASEMENT/BENNINGTON ST	EAST BOSTON	30	BELLE ISLE INLET, REVERE

Table 2-1. 2017 DRY WEATHER OUTFALL SCREENING RESULTS

Facility ID	Street Location	Receiving Water	Location Type	Inspection Date	Outfall Sign	Tidal Impact	Outfall Located	Outfall Accessible	Sampling Location	Flow	Flow Velocity	Percent Submerged	Sediment Depth	Water Depth
29N5D0135	ADDISON ST	Chelsea River	SDO	5/30/2017	No	Yes	Yes	Yes	Outfall	Flow	Slow	0	0	0

APPENDIX F

FEDERAL CORRESPONDENCE

Meghan Reisenauer

From: Christine Vaccaro - NOAA Federal <christine.vaccaro@noaa.gov>
Sent: Friday, February 14, 2020 2:01 PM
To: Meghan Reisenauer
Cc: Patrick Malone; Stan Sadkowski
Subject: Re: Information for RGP

We do not expect any listed species to be exposed to any effects of this action.

-Chris

Chris Vaccaro
Fisheries Biologist
Protected Resources Division
NOAA Fisheries, Greater Atlantic Region
Gloucester, MA
Phone: 978-281-9167
Email: christine.vaccaro@noaa.gov

For additional ESA Section 7 information and Critical Habitat guidance, please see:
www.greateratlantic.fisheries.noaa.gov/protected/section7

On Fri, Feb 14, 2020 at 1:59 PM Meghan Reisenauer <mreisenauer@sanbornhead.com> wrote:

> Good afternoon,
>
> I am writing to request information to be included as part of a Notice of Intent (NOI) for a Remediation General Permit (RGP). The NOI is for construction dewatering during excavation activities at 144 Addison St in East Boston, MA 02128. Effluent will be discharged to the Chelsea Creek/River in East Boston, MA by means of the existing storm drain on site. The Outfall through which the storm drain flows is #29N135 (29NSDO135).
>
> **Approximate Location of Discharge:**
>
> Lat: 42.387453, Long: -71.018718
>
> As part of the application to the USEPA for the RGP, we need to determine if this proposed temporary discharge has the potential to adversely affect any federally listed species in the reach of the Chelsea River downstream of the discharge point.
>
> Attached is the species list requested from the USFWS, which identified no threatened/endangered/candidate species or critical habitats in the area.

Please let me know if you require any further information.

Thank you,

Meghan Reisenauer
Engineer

SANBORN | HEAD & ASSOCIATES, INC.

D 857.327.9743 | M 208.596.1279 | 98 N. Washington Street, Suite 101, Boston, MA 02114

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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: February 14, 2020
Consultation Code: 05E1NE00-2020-SLI-1415
Event Code: 05E1NE00-2020-E-04058
Project Name: 144 Addison

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2020-SLI-1415

Event Code: 05E1NE00-2020-E-04058

Project Name: 144 Addison

Project Type: DEVELOPMENT

Project Description: The location is 144 Addison St, East Boston, MA 02128. Only the eastern portion of the address, the vacant parking lot bounded by the alley behind houses on Saratoga St and Brandywyne Dr, an area of about 3 acres, will be part of this project. Lat: 42.385721, Long: -71.014321. The proposed construction is 2 residential buildings of 4-5 levels of timber frame; first floor parking podiums for each building (including cutting the south garage to El. 10 ft); landscaped areas, retaining walls, multiple stormwater management systems, and utilities. The finished floor elevation of the ground level is proposed to be at El. 21 ft.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.38567361313279N71.01436703292424W

Counties: Suffolk, MA

Endangered Species Act Species

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

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

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

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

---

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

Critical habitats

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

APPENDIX G

NATIONAL REGISTER OF HISTORICAL PLACES, BOSTON AND CHELSEA, MASSACHUSETTS

Appendix G
National Register of Historic Places
Research Documentation
Boston, Massachusetts

Ref#	Property Name	Listed Date	State	County	City	Street & Number
02000548	Bennington Street Burying Ground	5/22/2002	MASSACHUSETTS	Suffolk	Boston	Bennington St., bet. Swift and harmony Sts.
08000795	Ohabei Shalom Cemetery	8/19/2008	MASSACHUSETTS	Suffolk	Boston	147 Wordsworth St.
98001381	Baker Congregational Church	11/19/1998	MASSACHUSETTS	Suffolk	Boston	760 Saratoga St.
00000160	Fulton-Commercial Streets Historic District (Boundary Increase)	3/3/2000	MASSACHUSETTS	Suffolk	Boston	81-95 Richmond St.
00000415	Harvard Avenue Historic District	4/28/2000	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Linden St., Commonwealth AVe., Harvard Ave., and Park Vale Ave.
00000871	Dearborn School	8/2/2000	MASSACHUSETTS	Suffolk	Boston	25 Ambrose St.
01000088	Brighton Center Historic District	2/20/2001	MASSACHUSETTS	Suffolk	Boston	Academy Hill R., Chestnut Hill Ave., Dighton, Elko, Henshaw, Leicester, Market, Washington, and Winship Sts.
01000304	Dorchester--Milton Lower Mills Industrial District (Boundary Increase)	4/6/2001	MASSACHUSETTS	Suffolk	Boston	Roughly: Adams, River, Medway Sts., Millers Lane, Eliot and Adams Sts.
01000872	Peabody, The	8/8/2001	MASSACHUSETTS	Suffolk	Boston	195-197 Ashmont St.
01001048	Gibson House	8/7/2001	MASSACHUSETTS	Suffolk	Boston	137 Beacon St.
01001557	Boston Consumptives Hospital	2/7/2002	MASSACHUSETTS	Suffolk	Boston	249 River St.
02000081	Frances and Isabella Apartments	2/22/2002	MASSACHUSETTS	Suffolk	Boston	430-432 and 434-436 Dudley St.
02000154	Greenwood Memorial United Methodist Church	3/8/2002	MASSACHUSETTS	Suffolk	Boston	378A-380 Washington St.
02001039	Paine Furniture Building	9/12/2002	MASSACHUSETTS	Suffolk	Boston	75-81 Arlington St.
02001190	Harrison Square Historic District	10/22/2002	MASSACHUSETTS	Suffolk	Boston	Bounded by MBTA Braintree line embankment, Park, Everett, Freeport, Mill, Asland, Blanche Sts., Victory Rd.
03000385	Savin Hill Historic District	5/9/2003	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Savin Hill Ave., Morrissey Blvd., Dorchester Bay, and I-93
03000645	Union Oyster House	5/27/2003	MASSACHUSETTS	Suffolk	Boston	41-43 Union Street
03000781	Publicity Building	8/20/2003	MASSACHUSETTS	Suffolk	Boston	40-44 Bromfield St.
04000023	Benedict Fenwick School	2/11/2004	MASSACHUSETTS	Suffolk	Boston	150 Magnolia St.
04000085	Haskell, Edward H., Home for Nurses	2/26/2004	MASSACHUSETTS	Suffolk	Boston	220 Fisther Ave., 63 Parker Hill Ave.
04000119	YWCA Boston	3/3/2004	MASSACHUSETTS	Suffolk	Boston	140 Clarendon St.,
04000189	Nix's Mate Daybeacon	3/18/2004	MASSACHUSETTS	Suffolk	Boston	Nubble Channel, The Narrows, Boston Harbor
04000426	Nazing Court Apartments	5/12/2004	MASSACHUSETTS	Suffolk	Boston	224-236 Seaver St. and 1-8 Nazing Court
04000534	Hibernian Hall	6/2/2004	MASSACHUSETTS	Suffolk	Boston	182-186 Dudley St.
04000959	Fort Point Channel Historic District	9/10/2004	MASSACHUSETTS	Suffolk	Boston	Necco Court, Thomson Place, A, Binford, Congress, Farnsworth, Melcher, Midway, Sleeper, Stillings, Summer Sts.
04001219	Forest Hills Cemetery	11/17/2004	MASSACHUSETTS	Suffolk	Boston	95 Forest Hills Ave.
04001430	Truman Parkway--Metropolitan Park System of Greater Boston	1/5/2005	MASSACHUSETTS	Suffolk	Boston	Truman Parkway
04001432	VFW Parkway, Metropolitan Park System of Greater Boston	1/5/2005	MASSACHUSETTS	Suffolk	Boston	VFW Parkway, bet. Spring And Centre Sts.,
04001572	Morton Street, Metropolitan Park System of Greater Boston	1/24/2005	MASSACHUSETTS	Suffolk	Boston	Morton St.,
04001573	Neponset Valley Parkway, Metorpolitan Park System of Greater Boston	1/24/2005	MASSACHUSETTS	Suffolk	Boston	Neponset Valley Parkway
05000459	Ayer, Frederick, Mansion	4/5/2005	MASSACHUSETTS	Suffolk	Boston	395 Commonwealth Avenue
05000559	Collins Building	6/8/2005	MASSACHUSETTS	Suffolk	Boston	213-217 Washington St.
05000879	Home for Aged Couples	8/11/2005	MASSACHUSETTS	Suffolk	Boston	409, 419 Walnut Ave. and 2055 Columbus Ave.
05000936	South Boston Boat Clubs Historic District	9/1/2005	MASSACHUSETTS	Suffolk	Boston	1793-1849 William J. Day Blvd.
05001509	Stony Brook Reservation Parkways, Metropolitan Park System of Great Boston MPS	1/3/2006	MASSACHUSETTS	Suffolk	Boston	Dedham, Enneking, Turtle Pond Parkways, Smith Field, Reservation, W. Border Rds.
05001530	Charles River Reservation Parkways	1/18/2006	MASSACHUSETTS	Middlesex	Boston	Soldiers Field, Nonantum, Leo Birmingham, Arsenal, Greenough, N. Beacon, Charles River, Norumbega, Recreation,
06000127	East Boston High School, Old	3/15/2006	MASSACHUSETTS	Suffolk	Boston	127 Marion St.,
07000510	Goldsmith Block	6/5/2007	MASSACHUSETTS	Suffolk	Boston	41 Ruggles St., 746-750 Shawmut Ave.
07000861	Boston Transit Commission Building	8/31/2007	MASSACHUSETTS	Suffolk	Boston	15 Beacon St.
08000089	Dorchester Park	2/20/2008	MASSACHUSETTS	Suffolk	Boston	Bounded by Dorchester Ave., Richmond, Adams & Richview Sts,
08000693	Old Harbor Reservation Parkways, Metropolitan Park System of Greater Boston	7/24/2008	MASSACHUSETTS	Suffolk	Boston	William J. Day Blvd., Columbia Rd, between Farragut Rd and Kosciuszko Cir., Old Colony Ave, between Pacuska Ave.
08000793	Joshua Bates School	8/22/2008	MASSACHUSETTS	Suffolk	Boston	731 Harrison Ave.
08001284	Compton Building	12/31/2008	MASSACHUSETTS	Suffolk	Boston	159, 161-175 Devonshire St., 18-20 Arch St.
09000612	Evergreen Cemetery	8/14/2009	MASSACHUSETTS	Suffolk	Boston	2060 Commonwealth Ave.
09000717	Fairview Cemetery	9/16/2009	MASSACHUSETTS	Suffolk	Boston	45 Fairview Ave.
09000767	Mount Hope Cemetery	9/24/2009	MASSACHUSETTS	Suffolk	Boston	355 Walk Hill St.
09000936	Middlesex Canal Historic and Archeological District	11/19/2009	MASSACHUSETTS	Middlesex	Boston	Address Restricted
10000039	EDNA G. shipwreck (Eastern Rig dragger)	11/22/2010	MASSACHUSETTS	Suffolk	Boston	Address Restricted
100001314	Boston Fish Pier Historic District	7/13/2017	MASSACHUSETTS	Suffolk	Boston	212-234 Northern Ave.
100001315	Columbia Road--Devon Street Historic District	7/17/2017	MASSACHUSETTS	Suffolk	Boston	193-231 (odd) & 200-204 (even) Columbia Rd.
100001458	Quincy Grammar School	8/1/2017	MASSACHUSETTS	Suffolk	Boston	88-90 Tyler St.
100001582	Columbia Road--Bellevue Street Historic District	9/8/2017	MASSACHUSETTS	Suffolk	Boston	400-500 blk. of Columbia Rd., portions of Bellevue St,
100002734	Columbia Road--Strathcona Road Historic District	8/3/2018	MASSACHUSETTS	Suffolk	Boston	90-94,102-108, 105-111, 129-135, 137, 143-147, 150-156 Columbia & 16 Strathcona Rds., 114-126 Washington St.
100002790	Benjamin Silverman Apartments	8/24/2018	MASSACHUSETTS	Suffolk	Boston	50-52 Lorne & 4 Wilson Sts.
10000300	Highland Spring Brewery Bottling and Storage Buildings	5/28/2010	MASSACHUSETTS	Suffolk	Boston	154-166 Terrace St
100003070	Esmond Street Historic District	11/5/2018	MASSACHUSETTS	Suffolk	Boston	Bicknell, Bradshaw, Esmond, & Harvard Sts.
100003470	Intervale Street-Columbia Road Historic District	2/28/2019	MASSACHUSETTS	Suffolk	Boston	117-121, 123-127, 129-135, 137-143, 145-159, 161, 162 Intervale St. & 282-284, 286-288 Columbia Rd.
100003471	Samuel Edelman Apartments	3/5/2019	MASSACHUSETTS	Suffolk	Boston	97-103 Norfolk St.
10000391	Second Church in Boston	6/24/2010	MASSACHUSETTS	Suffolk	Boston	874, 876, 880 Beacon St
100003942	Nathan Warnick Apartments	12/23/2019	MASSACHUSETTS	Suffolk	Boston	57 Bicknell St.
100004335	Ascension-Caproni Historic District	12/23/2019	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Washington St, Newcomb St, Thorndike St, & Reed St.
10000506	Charles River Reservation (Speedway)--Upper Basin Headquarters	7/19/2010	MASSACHUSETTS	Suffolk	Boston	1420-1440 Soldiers Field Rd
10001066	Egleston Substation	12/27/2010	MASSACHUSETTS	Suffolk	Boston	3025 Washington St
11000160	United State Post Office, Courthouse, and Federal Building	4/8/2011	MASSACHUSETTS	Suffolk	Boston	5 Post Office Square
12000069	Fenway Park	3/7/2012	MASSACHUSETTS	Suffolk	Boston	24, & 2-4 Yawkey Wy., 64-76 Brookline Ave., & 70-80 Lansdowne St.
12000099	Terminal Storage Warehouse District	3/12/2012	MASSACHUSETTS	Suffolk	Boston	267-281 Medford St., 40 & 50 Terminal St.
12000783	Saint Mark's Episcopal Church	7/3/2014	MASSACHUSETTS	Suffolk	Boston	73 Columbia Rd.
12000978	Sherman Apartments Historic District	11/28/2012	MASSACHUSETTS	Suffolk	Boston	544-546 Washington, 4-6, 12-14, 18 Lyndhurst Sts.
12001012	Central Congregational Church	10/16/2012	MASSACHUSETTS	Suffolk	Boston	67 Newbury St.
12001162	Commonwealth Pier Five	10/10/1979	MASSACHUSETTS	Suffolk	Boston	165 Northern Ave.
13000621	Roslindale Substation	8/27/2013	MASSACHUSETTS	Suffolk	Boston	4228 Washington St.
13000928	Davidson, Sarah, Apartment Block	12/18/2013	MASSACHUSETTS	Suffolk	Boston	3 Gaylord St.
13000929	Pilgrim Congregational Church	12/18/2013	MASSACHUSETTS	Suffolk	Boston	540-544 Columbia Rd.
13000930	Walton and Rosita Halls	12/18/2013	MASSACHUSETTS	Suffolk	Boston	702-708 & 718-726 Washington St., 3-5 Walton St.
14000272	Blake and Amory Building	6/2/2014	MASSACHUSETTS	Suffolk	Boston	59 Temple Pl.
14000365	Dorchester South Burying Ground	6/27/2014	MASSACHUSETTS	Suffolk	Boston	2095 Dorchester Ave.
14000561	Buildings at 825--829 Blue Hill Avenue	9/10/2014	MASSACHUSETTS	Suffolk	Boston	825-829 Blue Hill Ave.
14000698	Almont Apartments	9/22/2014	MASSACHUSETTS	Suffolk	Boston	Address Restricted
14000840	Home for Destitute Jewish Children	10/8/2014	MASSACHUSETTS	Suffolk	Boston	Address Restricted
14000974	Gridley Street Historic District	12/3/2014	MASSACHUSETTS	Suffolk	Boston	Bounded by Congress, High, Pearl & Purchase Sts.
14000975	Lyman, Theodore, School	12/2/2014	MASSACHUSETTS	Suffolk	Boston	30 Gove St.
14001095	South End District (Boundary Increase)	12/29/2014	MASSACHUSETTS	Suffolk	Boston	200-224 Northampton St.
15000048	Boston Police Station Number One--Traffic Tunnel Administration Building	3/3/2015	MASSACHUSETTS	Suffolk	Boston	128, 150 North & 130 -140 Richmond St.
15000195	Boston National Historical Park	5/5/2015	MASSACHUSETTS	Suffolk	Boston	Charlestown Navy Yard
15000942	Fox, LJ., Building	12/29/2015	MASSACHUSETTS	Suffolk	Boston	407 Washington St.
16000409	Francis Street--Fenwood Road Historic District	6/23/2016	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Huntington Ave., Francis, Vining & Fenwood Sts., St. Albans Rd.
16000454	Governor Shirley Square Historic District	7/18/2016	MASSACHUSETTS	Suffolk	Boston	Dudley, Hampden, Dunmore & Magazine Sts., Blue Hill & Mt. Pleasant Ave.
66000050	Dorchester Heights National Historic Site	10/15/1966	MASSACHUSETTS	Suffolk	Boston	South Boston
66000127	Arnold Arboretum	10/15/1966	MASSACHUSETTS	Suffolk	Boston	22 Divinity Ave.
66000130	Beacon Hill Historic District	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Bounded by Beacon St., the Charles River Embankment, and Pinckney, Revere, and Hancock Sts.
66000132	Boston Athenaeum	10/15/1966	MASSACHUSETTS	Suffolk	Boston	10 1/2 Beacon St.
66000133	Boston Light	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Little Brewster Island, Boston Harbor
66000134	Boston Naval Shipyard	11/15/1966	MASSACHUSETTS	Suffolk	Boston	E of Chelsea St., Charlestown
66000138	Bunker Hill Monument	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Breed's Hill
66000141	Brook Farm	10/15/1966	MASSACHUSETTS	Suffolk	Boston	670 Baker St.
66000366	Ether Dome, Massachusetts General Hospital	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Fruit St.
66000368	Faneuil Hall	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Dock Sq.,
66000653	Garrison, William Lloyd, House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	125 Highland St.
66000764	Harding, Chester, House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	16 Beacon St.
66000765	Headquarters House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	55 Beacon St.
66000768	Long Wharf and Customhouse Block	11/13/1966	MASSACHUSETTS	Suffolk	Boston	Foot of State St.
66000770	Massachusetts Historical Society Building	10/15/1966	MASSACHUSETTS	Suffolk	Boston	1154 Boylston St.
66000771	Massachusetts Statehouse	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Beacon Hill
66000776	Old North Church	10/15/1966	MASSACHUSETTS	Suffolk	Boston	193 Salem St.
66000778	Old South Meetinghouse	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Milk and Washington Sts.
66000779	Old State House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Washington and State Sts.
66000782	Parkman, Francis, House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	50 Chestnut St.
66000784	Quincy Market	11/13/1966	MASSACHUSETTS	Suffolk	Boston	S. Market St.
66000785	Revere, Paul, House	10/15/1966	MASSACHUSETTS	Suffolk	Boston	19 North Sq.
66000788	Tremont Street Subway	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Beneath Tremont, Boylston, and Washington Sts.
66000789	U.S.S. CONSTITUTION	10/15/1966	MASSACHUSETTS	Suffolk	Boston	Boston Naval Shipyard
68000042	Pierce-Hichborn House	11/24/1968	MASSACHUSETTS	Suffolk	Boston	29 North Sq.,
70000539	Otis, (First) Harrison Gray, House	12/30/1970	MASSACHUSETTS	Suffolk	Boston	141 Cambridge St.
70000540	Fort Warren	8/29/1970	MASSACHUSETTS	Suffolk	Boston	Georges Island, Boston Harbor
70000682	Massachusetts General Hospital	12/30/1970	MASSACHUSETTS	Suffolk	Boston	Fruit Street
70000687	Old City Hall	12/30/1970	MASSACHUSETTS	Suffolk	Boston	School and Providence Sts.
70000690	Old South Church in Boston	12/30/1970	MASSACHUSETTS	Suffolk	Boston	645 Boylston St.
70000691	Old West Church	12/30/1970	MASSACHUSETTS	Suffolk	Boston	131 Cambridge St.
70000730	St. Paul's Church	12/30/1970	MASSACHUSETTS	Suffolk	Boston	136 Tremont St.
70000731	Sears, David, House	12/30/1970	MASSACHUSETTS	Suffolk	Boston	42 Beacon St.
70000733	Trinity Church	7/1/1970	MASSACHUSETTS	Suffolk	Boston	Copley Sq.
70000921	Fort Independence	10/15/1970	MASSACHUSETTS	Suffolk	Boston	Castle Island
71000087	African Meetinghouse	10/7/1971	MASSACHUSETTS	Suffolk	Boston	8 Smith St.
72000144	Boston Common and Public Garden	7/12/1972	MASSACHUSETTS	Suffolk	Boston	Beacon, Park, Tremont, Boylston, and Arlington Sts.
72000145	Crowninshield House	2/23/1972	MASSACHUSETTS	Suffolk	Boston	164 Marlborough St.
72000146	First Baptist Church	2/23/1972	MASSACHUSETTS	Suffolk	Boston	Commonwealth Ave. and Clarendon St.
72000150	Trinity Rectory	2/23/1972	MASSACHUSETTS	Suffolk	Boston	Clarendon and Newbury Sts.
72000544	Loring-Greenough House	4/26/1972	MASSACHUSETTS	Suffolk	Boston	12 South St.
73000313	Arlington Street Church	5/4/1973	MASSACHUSETTS	Suffolk	Boston	Arlington and Boylston Sts.
73000314	Armory of the First Corps of Cadets	5/22/1973	MASSACHUSETTS	Suffolk	Boston	97-105 Arlington St. and 130 Columbus Ave.
73000315	Blackstone Block Historic District	5/26/1973	MASSACHUSETTS	Suffolk	Boston	Area bound by Union, Hanover, Blackstone, and North Sts.
73000317	Boston Public Library	5/6/1973	MASSACHUSETTS	Suffolk	Boston	Copley Sq.
73000318	Cyclorama Building	4/13/1973	MASSACHUSETTS	Suffolk	Boston	543-547 Tremont St.
73000319	Fulton-Commercial Streets District	3/21/1973	MASSACHUSETTS	Suffolk	Boston	Fulton, Commercial, Mercantile, Lewis, and Richmond Sts.
73000321	Custom House District	5/11/1973	MASSACHUSETTS	Suffolk	Boston	Between I.F.K. Expwy. and Kirby St. and S. Market and High and Batterymarch Sts.
73000322	Old Corner Bookstore	4/11/1973	MASSACHUSETTS	Suffolk	Boston	NW corner of Washington and School Sts.
73000324	South End District	5/8/1973	MASSACHUSETTS	Suffolk	Boston	South Bay area between Huntington and Harrison Aves.
73000325	Hale, Edward Everett, House	3/21/1979	MASSACHUSETTS	Suffolk	Boston	12 Morley St.
73000850	Town Hill District	5/11/1973	MASSACHUSETTS	Suffolk	Boston	Bounded roughly by Rutherford Ave. and Main and Warren Sts.
73000854	John Eliot Square District	4/23/1973	MASSACHUSETTS	Suffolk	Boston	John Eliot Sq.
73000855	Kittredge, Alvah, House	5/8/1973	MASSACHUSETTS	Suffolk	Boston	12 Linwood St.
73000856	Roxbury High Fort	4/23/1973	MASSACHUSETTS	Suffolk	Boston	Beech Glen St. at Fort Ave.
73001948	Back Bay Historic District	8/14/1973	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by the Charles River, Arlington, Providence, Boylston and Newbury Sts., and Charlesgate East
73001953	Sumner, Charles, House	11/7/1973	MASSACHUSETTS	Suffolk	Boston	20 Hancock St.
73001955	Otis, (Second) Harrison Gray, House	7/27/1973	MASSACHUSETTS	Suffolk	Boston	85 Mt. Vernon St.
74000382	Ames Building	4/26/1974	MASSACHUSETTS	Suffolk	Boston	1 Court St.
74000385	Copp's Hill Burial Ground	4/18/1974	MASSACHUSETTS	Suffolk	Boston	Charter, Snowhill, and Hull Sts.
74000388	Eliot Burying Ground	6/25/1974	MASSACHUSETTS	Suffolk	Boston	Eustis and Washington Sts.
74000390	Park Street District	5/1/1974	MASSACHUSETTS	Suffolk	Boston	Tremont, Park, and Beacon Sts.
74000391	John Adams Courthouse	5/8/1974	MASSACHUSETTS	Suffolk	Boston	Pemberton Sq.
74000392	Winthrop Building	4/18/1974	MASSACHUSETTS	Suffolk	Boston	7 Water St.
74000393	Youth's Companion Building	5/2/1974	MASSACHUSETTS	Suffolk	Boston	209 Columbus Ave.
74000907	Phipps Street Burying Ground	5/14/1974	MASSACHUSETTS	Suffolk	Boston	Phipps St.
74000911	Clapp Houses	5/2/1974	MASSACHUSETTS	Suffolk	Boston	199 and 195 Boston St.

Appendix G
National Register of Historic Places
Research Documentation
Boston, Massachusetts

74000915	Dorchester North Burying Ground	4/18/1974	MASSACHUSETTS	Suffolk	Boston	Stroughton St. and Columbia Rd.
74000917	Pierce House	4/26/1974	MASSACHUSETTS	Suffolk	Boston	24 Oakton Ave.
74002044	Howe, Samuel Gridley and Julia Ward, House	9/13/1974	MASSACHUSETTS	Suffolk	Boston	13 Chestnut St.
74002045	King's Chapel	5/2/1974	MASSACHUSETTS	Suffolk	Boston	Tremont and School Sts.
74002222	Boston National Historical Park	10/26/1974	MASSACHUSETTS	Suffolk	Boston	Inner harbor at mouth of Charles River
74002350	Blake, James, House	5/1/1974	MASSACHUSETTS	Suffolk	Boston	735 Columbia Rd.
75000299	South Station Headhouse	2/13/1975	MASSACHUSETTS	Suffolk	Boston	Atlantic Ave. and Summer St.
75000300	St. Stephen's Church	4/14/1975	MASSACHUSETTS	Suffolk	Boston	Hanover St. between Clark and Harris Sts.
75000301	Symphony and Horticultural Halls	5/30/1975	MASSACHUSETTS	Suffolk	Boston	Massachusetts and Huntington Aves.
76001979	Nell, William C., House	5/11/1976	MASSACHUSETTS	Suffolk	Boston	3 Smith Ct.
77001541	Appleton, Nathan, Residence	12/22/1977	MASSACHUSETTS	Suffolk	Boston	39-40 Beacon St.
78000473	Fenway Studios	9/13/1978	MASSACHUSETTS	Suffolk	Boston	30 Ipswich St.
79000368	Bedford Building	8/21/1979	MASSACHUSETTS	Suffolk	Boston	89-103 Bedford St.
79000369	International Trust Company Building	9/10/1979	MASSACHUSETTS	Suffolk	Boston	39-47 Milk St.
79000370	Washington Street Theatre District	3/19/1979	MASSACHUSETTS	Suffolk	Boston	511-559 Washington St.
80000442	Wirth, Jacob, Buildings	12/9/1980	MASSACHUSETTS	Suffolk	Boston	31-39 Stuart St.
80000443	Wilbur Theatre	12/9/1980	MASSACHUSETTS	Suffolk	Boston	244-250 Tremont St.
80000444	Shubert, Sam S., Theatre	12/9/1980	MASSACHUSETTS	Suffolk	Boston	263-265 Tremont St.
80000445	Metropolitan Theatre	12/9/1980	MASSACHUSETTS	Suffolk	Boston	252-272 Tremont St.
80000446	Hayden Building	12/9/1980	MASSACHUSETTS	Suffolk	Boston	681-683 Washington St.
80000448	Dill Building	12/9/1980	MASSACHUSETTS	Suffolk	Boston	11-25 Stuart St.
80000450	Boylston Building	12/9/1980	MASSACHUSETTS	Suffolk	Boston	2-22 Boylston St.
80000451	Boston Young Men's Christian Union	12/9/1980	MASSACHUSETTS	Suffolk	Boston	48 Boylston St.
80000453	Boston Edison Electric Illuminating Company	12/9/1980	MASSACHUSETTS	Suffolk	Boston	25-39 Boylston St.
80000455	West Street District	12/9/1980	MASSACHUSETTS	Suffolk	Boston	West St.
80000458	Piano Row District	12/9/1980	MASSACHUSETTS	Suffolk	Boston	Boston Common, Park Sq., Boylston Pl, and Tremont St.
80000460	Liberty Tree District	12/9/1980	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Harrison Ave., Washington, Essex and Beach Sts.
80000462	Beach-Knapp District	12/9/1980	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Harrison Ave., Washington, Kneeland, and Beach Sts.
80000463	Russia Wharf Buildings	12/2/1980	MASSACHUSETTS	Suffolk	Boston	518-540 Atlantic Ave. 270 Congress St. and 276-290 Congress St.
80000465	Oak Square School	11/10/1980	MASSACHUSETTS	Suffolk	Boston	35 Nonantum St.
80000468	United Shoe Machinery Corporation Building	8/19/1980	MASSACHUSETTS	Suffolk	Boston	138-164 Federal St.
80000469	Union Wharf	6/22/1980	MASSACHUSETTS	Suffolk	Boston	295-353 Commercial St.
80000670	Suffolk County Jail	4/23/1980	MASSACHUSETTS	Suffolk	Boston	215 Charles St.
80000671	Stearns, R. H., House	6/16/1980	MASSACHUSETTS	Suffolk	Boston	140 Tremont St.
80000672	New England Conservatory of Music	5/14/1980	MASSACHUSETTS	Suffolk	Boston	290 Huntington Ave.
80000674	Garrison, William Lloyd, School	4/16/1980	MASSACHUSETTS	Suffolk	Boston	20 Hutchings St.
80000675	Dorchester-Milton Lower Mills Industrial District	4/2/1980	MASSACHUSETTS	Suffolk	Boston	Both sides of Neponset River
80000676	Charles Playhouse	6/16/1980	MASSACHUSETTS	Suffolk	Boston	74-78 Warenton St.
80000677	Berger Factory	4/9/1980	MASSACHUSETTS	Suffolk	Boston	37 Williams St.
80000678	All Saints' Church	6/16/1980	MASSACHUSETTS	Suffolk	Boston	211 Ashmont St.
80001683	Dillaway School	4/9/1980	MASSACHUSETTS	Suffolk	Boston	16-20 Kenilworth St.
80004396	Boston African American National Historic Site	10/10/1980	MASSACHUSETTS	Suffolk	Boston	Museum of Afro American History, Dudley Station, Box 5
81000620	Fields Corner Municipal Building	11/12/1981	MASSACHUSETTS	Suffolk	Boston	1 Arcadia St., 195 Adams St.
82000486	Wigglesworth Building	10/21/1982	MASSACHUSETTS	Suffolk	Boston	89-83 Franklin St.
82004448	Roughan Hall	4/15/1982	MASSACHUSETTS	Suffolk	Boston	15-18 City Sq.
82004450	McKay, Donald, House	6/2/1982	MASSACHUSETTS	Suffolk	Boston	78-80 White St.
82004453	Haffenreffer Brewery	5/2/1982	MASSACHUSETTS	Suffolk	Boston	Germania St.
82004456	Adams-Nervine Asylum	6/1/1982	MASSACHUSETTS	Suffolk	Boston	990-1020 Centre St.
83000601	Charles Street African Methodist Episcopal Church	9/1/1983	MASSACHUSETTS	Suffolk	Boston	551 Warren St.
83000602	Codman Square District	6/23/1983	MASSACHUSETTS	Suffolk	Boston	Norfolk, Talbot, Epping, Lithgow, Centre, and Moultrie Sts.
83000603	Gardner, Isabella Stewart, Museum	1/27/1983	MASSACHUSETTS	Suffolk	Boston	280 The Fenway
83000604	Loring, Harrison, House	9/1/1983	MASSACHUSETTS	Suffolk	Boston	789 E. Broadway St.
83000605	Harvard Avenue Fire Station	3/31/1983	MASSACHUSETTS	Suffolk	Boston	16 Harvard Ave.
83000606	Lawrence Model Lodging Houses	9/22/1983	MASSACHUSETTS	Suffolk	Boston	79, 89, 99 and 109 E. Canton St.
83000607	Newspaper Row	7/7/1983	MASSACHUSETTS	Suffolk	Boston	322-328 Washington St. 5-23 Milk St., and 11 Hawley St.
83004097	Codman Building	10/19/1983	MASSACHUSETTS	Suffolk	Boston	55 Kilby St.
83004098	Leather District	12/21/1983	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Atlantic Ave., Kneeland, Lincoln, and Essex Sts.
83004099	LUNA (tugboat)	10/6/1983	MASSACHUSETTS	Suffolk	Boston	NDC Pier, Charles River
83004285	Baker, Sarah J., School	7/7/1983	MASSACHUSETTS	Suffolk	Boston	33 Perrin St.
84000421	Vermont Building	11/13/1984	MASSACHUSETTS	Suffolk	Boston	6-12 Thacher St.
84002875	Fenway-Boylston Street District	9/4/1984	MASSACHUSETTS	Suffolk	Boston	Fenway, Boylston, Westland, and Hemenway Sts.
84002890	Moreland Street Historic District	3/29/1984	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Kearsarge, Blue Hill Aves., Warren, Waverly, and Winthrop Sts.
85000316	Bigelow School	2/21/1985	MASSACHUSETTS	Suffolk	Boston	350 W. 4th St.
85000317	Dimock Community Health Center Complex	2/21/1985	MASSACHUSETTS	Suffolk	Boston	41 and 55 Dimock St.
85000318	Dorchester Pottery Works	2/21/1985	MASSACHUSETTS	Suffolk	Boston	101-105 Victory Rd.
85002015	Building at 138--142 Portland Street	9/5/1985	MASSACHUSETTS	Suffolk	Boston	138-142 Portland St.
85003074	Dudley Station Historic District	12/5/1985	MASSACHUSETTS	Suffolk	Boston	Washington, Warren, and Dudley Sts.
85003323	Boston Harbor Islands Archeological District	12/21/1985	MASSACHUSETTS	Suffolk	Boston	Address Restricted
85003375	Engine House No. 34	10/24/1985	MASSACHUSETTS	Suffolk	Boston	444 Western Ave.
86000084	USS CASSIN YOUNG (destroyer)	1/14/1986	MASSACHUSETTS	Suffolk	Boston	Charlestown Navy Yard
86000140	Christ Church	1/30/1986	MASSACHUSETTS	Suffolk	Boston	1220 River Rd.
86000274	Bulfinch Triangle Historic District	2/27/1986	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Canal, Market, Merrimac, and Causeway Sts.
86000375	Harriswood Crescent	3/13/1986	MASSACHUSETTS	Suffolk	Boston	60--88 Harold St.
86001486	Sears' Crescent and Sears' Block	8/9/1986	MASSACHUSETTS	Suffolk	Boston	38--68 and 70--72 Cornhill
86001504	Richardson Block	8/9/1986	MASSACHUSETTS	Suffolk	Boston	113--151 Pearl and 109--119 High Sts.
86001909	Filene's Department Store	7/24/1986	MASSACHUSETTS	Suffolk	Boston	426 Washington St.
86001911	Locke--Ober Restaurant	7/24/1986	MASSACHUSETTS	Suffolk	Boston	3--4 Winter Pl.
86001913	Second Brazer Building	7/24/1986	MASSACHUSETTS	Suffolk	Boston	25--29 State St.
87000757	Harvard Stadium	2/27/1987	MASSACHUSETTS	Suffolk	Boston	60 N. Harvard St.
87000760	Boston Common	2/27/1987	MASSACHUSETTS	Suffolk	Boston	Beacon, Park, Tremont, Boylston, and Charles St.
87000761	Boston Public Garden	2/27/1987	MASSACHUSETTS	Suffolk	Boston	Beacon, Charles, Boylston, and Arlington Sts.
87000885	Abbotsford	9/16/1987	MASSACHUSETTS	Suffolk	Boston	300 Walnut Ave.
87001128	Monument Square Historic District	6/2/1987	MASSACHUSETTS	Suffolk	Boston	Monument Sq.
87001394	New Riding Club	8/20/1987	MASSACHUSETTS	Suffolk	Boston	52 Hemenway St.
87001396	Congress Street Fire Station	9/3/1987	MASSACHUSETTS	Suffolk	Boston	344 Congress St.
87001398	House at 17 Cranston Street	11/20/1987	MASSACHUSETTS	Suffolk	Boston	17 Cranston St.
87001399	Hoxie, Timothy, House	11/20/1987	MASSACHUSETTS	Suffolk	Boston	135 Hillside St.
87001478	Austin, Francis B., House	10/21/1988	MASSACHUSETTS	Suffolk	Boston	58 High St.
87001481	Long Island Head Light	6/15/1987	MASSACHUSETTS	Suffolk	Boston	Long Island
87001495	Saint Augustine Chapel and Cemetery	9/18/1987	MASSACHUSETTS	Suffolk	Boston	Dorchester St. between W. Sixth and Tudor Sts.
87001771	Bunker Hill School	10/15/1987	MASSACHUSETTS	Suffolk	Boston	65 Baldwin St.
87001889	Sumner Hill Historic District	10/22/1987	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Seaverns Ave., Everett St., Carolina Ave., & Newbern St.
87002549	District 13 Police Station	2/10/1988	MASSACHUSETTS	Suffolk	Boston	28 Seaverns Ave.
88000427	Temple Place Historic District	7/26/1988	MASSACHUSETTS	Suffolk	Boston	11--55, 26--58 Temple Pl.
88000908	Goodwin, Ozias, House	6/23/1988	MASSACHUSETTS	Suffolk	Boston	7 Jackson Ave.
88000955	First Church of Jamaica Plain	7/15/1988	MASSACHUSETTS	Suffolk	Boston	6 Eliot St.
88000957	Greek Orthodox Cathedral of New England	6/30/1988	MASSACHUSETTS	Suffolk	Boston	520 Parker St.
88000959	Eliot Hall	7/15/1988	MASSACHUSETTS	Suffolk	Boston	7A Eliot St.
89000004	Mount Pleasant Historic District	2/9/1989	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Forest St. and Mount Pleasant Ave.
89000147	Roxbury Highlands Historic District	2/22/1989	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Dudley St., Washington St., and Columbus Ave.
89000974	Massachusetts School of Art	8/3/1989	MASSACHUSETTS	Suffolk	Boston	364 Brookline Ave.
89001747	Mission Hill Triangle Historic District	11/6/1989	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Smith St., Worthington St., Tremont St., and Huntington Ave.
89002125	Roxbury Presbyterian Church	3/15/1991	MASSACHUSETTS	Suffolk	Boston	328 Warren St.
89002169	St. Joseph's Roman Catholic Church Complex	12/28/1989	MASSACHUSETTS	Suffolk	Boston	Bounded by Circuit, Regent, Hulbert, and Fenwick Sts.
89002251	Bellevue Standpipe	1/18/1990	MASSACHUSETTS	Suffolk	Boston	On Bellevue Hill at Washington St. and Roxbury Pkwy.
89002271	Chestnut Hill Reservoir Historic District	1/18/1990	MASSACHUSETTS	Suffolk	Boston	Beacon St. and Commonwealth Ave.
90000631	Copp's Hill Terrace	4/19/1990	MASSACHUSETTS	Suffolk	Boston	Between Commercial and Charter Sts. W of Jackson Place
90001095	Calf Pasture Pumping Station Complex	8/2/1990	MASSACHUSETTS	Suffolk	Boston	435 Mount Vernon St.
90001145	Bowditch School	8/3/1990	MASSACHUSETTS	Suffolk	Boston	80--82 Greene St.
90001536	Monument Square Historic District	10/11/1990	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Jamaicaway, Pond, Centre and Eliot Sts.
90001537	Upham's Corner Market	10/11/1990	MASSACHUSETTS	Suffolk	Boston	600 Columbia Rd.
90001757	Textile District	11/29/1990	MASSACHUSETTS	Suffolk	Boston	Roughly, Essex St. from Phillips Sq. to Columbia St. and Chauncy St. from Phillips Sq. to Rowe Pl.
90001992	Sears Roebuck and Company Mail Order Store	1/15/1991	MASSACHUSETTS	Suffolk	Boston	309 Park Dr. and 201 Brookline Ave.
92000356	Trinity Neighborhood House	4/14/1992	MASSACHUSETTS	Suffolk	Boston	406 Meridian St.
93001489	Massachusetts Mental Health Center	1/21/1994	MASSACHUSETTS	Suffolk	Boston	74 Fenwood Rd.
93001573	House at 1 Bay Street	2/9/1994	MASSACHUSETTS	Suffolk	Boston	1 Bay St.
93001587	Eliot Congregational Church	2/9/1994	MASSACHUSETTS	Suffolk	Boston	56 Dale St. corner 118--120 Walnut St.
94001492	Faneuil, Peter, School	12/16/1994	MASSACHUSETTS	Suffolk	Boston	60 Joy St.
94001494	Lower Roxbury Historic District	12/9/1994	MASSACHUSETTS	Suffolk	Boston	Roughly, area surrounding Coventry, Cunard, and Walpole Sts.
95001450	Riviera, The	12/7/1995	MASSACHUSETTS	Suffolk	Boston	270 Huntington Ave.
96001063	Douglass, Frederick, Square Historic District	10/3/1996	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Hammond St., Cobat St., Windsor St., and Westminister St., Lower Roxbury
97000920	Brighton Evangelical Congregational Church	8/21/1997	MASSACHUSETTS	Suffolk	Boston	404-410 Washington St.
97000969	Charlestown Heights	1/8/1998	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by St. Martin, Bunker Hill, Medford, and Sackville Sts.
97000970	Students House	9/11/1997	MASSACHUSETTS	Suffolk	Boston	96 The Fenway
97000971	North Terminal Garage	9/11/1997	MASSACHUSETTS	Suffolk	Boston	600 Commercial St.
97001239	Dorchester Temple Baptist Church	1/16/1998	MASSACHUSETTS	Suffolk	Boston	670 Washington St.
97001278	ROSEWAY (schooner)	9/25/1997	MASSACHUSETTS	Suffolk	Boston	Boston Harbor
97001377	Allston Congregational Church	11/7/1997	MASSACHUSETTS	Suffolk	Boston	31-41 Quint Ave.
97001472	St. Luke's and St. Margaret's Church	11/12/1997	MASSACHUSETTS	Suffolk	Boston	5-7 St. Luke's Rd.
98000149	Eagle Hill Historic District	2/26/1998	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Border, Lexington, Trenton, and Falcon Sts.
98001082	Boston Young Men's Christian Association	8/20/1998	MASSACHUSETTS	Suffolk	Boston	312-320 Huntington Ave.
98001292	St. Mary's Episcopal Church	10/30/1998	MASSACHUSETTS	Suffolk	Boston	14-16 Cushing Ave.
98001330	Roslindale Baptist Church	11/5/1998	MASSACHUSETTS	Suffolk	Boston	52 Cummins Hwy.
98001361	Cathedral of St. George Historic District	11/25/1998	MASSACHUSETTS	Suffolk	Boston	517-523-525 E. Broadway
99000593	Woodbourne Historic District	6/4/1999	MASSACHUSETTS	Suffolk	Boston	Roughly bounded by Walk Hill, Goodway, and Wachusett Sts.
99000633	Symphony Hall	1/20/1999	MASSACHUSETTS	Suffolk	Boston	301 Massachusetts Avenue
99001302	Mariner's House	11/12/1999	MASSACHUSETTS	Suffolk	Boston	11 North Square
99001304	Congregation Adath Jeshurun	11/12/1999	MASSACHUSETTS	Suffolk	Boston	397 Blue Hill Ave.
99001308	First Congregational Church of Hyde Park	11/12/1999	MASSACHUSETTS	Suffolk	Boston	6 Webster St.
99001614	Church Green Buildings Historic District	12/30/1999	MASSACHUSETTS	Suffolk	Boston	101-113 Summer St.
01000089	Chelsea Garden Cemetery	2/9/2001	MASSACHUSETTS	Suffolk	Chelsea	70 Central Ave. (formerly Shawmut St.)
07001241	Revere Beach Parkway--Metropolitan Park System of Greater Boston	12/6/2007	MASSACHUSETTS	Middlesex	Chelsea	Revere Beach Pkwy
09000144	Chelsea Square Historic District	4/8/1982	MASSACHUSETTS	Suffolk	Chelsea	Roughly area around Broadway, Medford. Tremont, Park, Cross and Winnisimmet Sts.
73000851	Naval Hospital Boston Historic District	8/14/1973	MASSACHUSETTS	Suffolk	Chelsea	1 Broadway
74000908	Bellingham-Cary House	9/6/1974	MASSACHUSETTS	Suffolk	Chelsea	34 Parker St.
82004464	Kimball, C. Henry, House	4/15/1982	MASSACHUSETTS	Suffolk	Chelsea	295 Washington St.
85000030	Bellingham Square Historic District	1/3/1985	MASSACHUSETTS	Suffolk	Chelsea	Roughly bounded by Broadway, Shawmut, Chestnut, and Shurtleff Sts.
88000718	Downtown Chelsea Residential Historic District	6/22/1988	MASSACHUSETTS	Suffolk	Chelsea	Roughly bounded by Shurtleff, Marginal, and Division Sts. and Bellingham Sq.
93000283	Congregation Agudath Shalom	4/16/1993	MASSACHUSETTS	Suffolk	Chelsea	145 Walnut St.

Notes:
1. Sanborn, Head & Associates, Inc. (Sanborn Head) conducted a review of the National Register of Historic Places within Boston and Chelsea, Massachusetts. The search returned the results listed above. The Site is not listed on the National Register of Historic Places.
2. Shaded results are located within 0.5 mile of the Site.

March 11, 2020
U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square - Suite 100 (OEP06-01)
Boston, MA 02109-3912

Re:

Deficiency Response for Notice of Intent (NOI) for Remediation General Permit
144 Addison Street Project
Construction Dewatering
Discharge of Treated Groundwater to Chelsea River
East Boston, Massachusetts,

Flocculants

All information required in Part 2.5.2.g.iii
1) Product name, chemical formula, and manufacturer of the chemical or additive; Provided in the Safety Data Sheet included as Attachment 1. Products used are either the combination of DBS-2100 and Gel-Floc OR the BHR-P50 Hybrid Flocculant. A determination of which flocculant system should be used, will be conducted with field test kits prior to start-up of the treatment system.

2) Purpose or use of the chemical or additive; To achieve effluent limitations, set for the TSS, flocculant tubes, as part of the HaloKlear Dual Polymer System (DPS) are a required part of the treatment system design. The DPS uses a sequence of coagulation (DBS-2100) and flocculation (Gel-Floc) treatment reactions to remove particles from the influent. The same result is achieved with the liquid BHR-P50 Hybrid Flocculant when it is injected with a metering pump. A determination of which flocculant system should be used, will be conducted with field test kits prior to start-up of the treatment system.

The coagulant will neutralize the electrical charges which make particles suspended in solution, and the flocculant will collect the particles, so they can agglomerate. Agglomerates will then settle out of solution in the fractionation tanks or be removed as influent passes through the bag and media filters, prior to discharge. Additionally, some metals in the influent are suspected to be adsorbed to soil particles. Through the removal of soil particles via flocculant tubes OR dosed liquid flocculant, it is expected that the metal concentrations in the effluent will decrease.

3) Safety Data Sheet (SDS) and Chemical Abstract Service (CAS) Registry number for each chemical or additive; Provided in Attachment 2.

4) The frequency (e.g. hourly, daily), duration (e.g., hours, days), magnitude (i.e. frequency as maximum and average concentration), and method of application for the chemical or additive; The DPS uses a sequence of polymers that perform coagulation and flocculation reactions. Both the coagulant (DBP-2100) and flocculant (Gel-Floc) are dry powders integrated in the treatment system as socks, placed within the flocculant tube. The socks continuously dose as the influent flows through the tube; therefore, the method of application for the coagulants/flocculants would be in-line discharge prior to water entering the fractionation tanks. Each sock doses at 100 ppm for a flow of 150 gallons per minute (GPM). The pump rate through the flocculant tube at the Site is approximately 300 GPM; therefore, the maximum concentration would be 200 ppm per minute. When water stops flowing through the system, dosing will also cease. Since the dosing is dependent on the flow through the treatment system, the frequency and duration at which the influent is exposed to the coagulant/flocculant is continuous flow, whenever dewatering is occurring. The coagulation and flocculant will be added at a constant dosage rate of 200 ppm per minute per sock. The treatment system will be operated for a maximum of 8 hours per day for a maximum daily concentration of 96,000 ppm per day per sock. The same frequency calcs apply for the liquid flocculant, BHR-P50.

5) Any material compatibility risks for storage of the chemical or additive; Provided in the SDS in Attachment 1.

6) If available, the vendor's reported aquatic toxicity; Provided in the SDS in Attachment 1.

***7) A description of the material management control measures employed*;** The operational description of the DPS is provided as Attachement 2. IF the liquid flocculant, BHR-P50 is the chosen flocculant for the project, it will arrive on-site in 275-gallon totes and be stored in a secondary containment berm. A metering pump will draw from the tote and dose small amounts of BHR-P50 through an injection spool, installed on the influent hose, in-line after the NaOH dosing system and prior to the second 21K frac tank. The dosing will be adjusted based on influent flowrates. The containment berm will be capable of containing the full 275-

gallon tote of BHR-P50 in the event of a catastrophic failure of the tote. Proper PPE and decontamination procedures will be utilized if and when a tote change out is required.

An explanation which demonstrates that the addition of such chemicals:

1) ***Will not add any pollutants in concentrations which exceed permit effluent limitations;*** The addition of the flocculants will not add any pollutants in concentrations which exceed permit effluent limitations. Chemicals included in the DPS are naturally derived and 100% biodegradable. The coagulant (DBP-2100) is a dry powder formulated from a plant-based protein, and the flocculant (GEL-Floc) is made from chitosan lactate, which is made from crustacean exoskeletons. The chemical combinations in the proposed HaloKlear DPS have additionally passed fish kill studies.

2) ***Will not exceed any applicable water quality standard;*** The addition of the flocculants will not exceed any applicable water quality standard due to the proposed flocculant being derived from plant-based proteins and crustacean exoskeletons.

3) ***Will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit;*** The addition of flocculants will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit. There is no concern for the addition of pollutants from the addition of flocculants; therefore, there is no concern for the application of permit conditions that are different or absent from this permit.

pH adjustment

All information required in Part 2.5.2.g.iii
1) Product name, chemical formula, and manufacturer of the chemical or additive; Sodium Hydroxide (NaOH). Additional Information are provided in the Safety Data Sheet included as Attachment 3.

2) Purpose or use of the chemical or additive; Based on review of the groundwater analytical data for the site where dewatering activities will occur, significant dissolved metals (mainly iron) are present. In order to decrease the dissolved concentrations of iron the pH adjustment system will dose sodium hydroxide at the required rate to achieve an optimal pH of 8.2 to minimize the solubility of iron in the groundwater. This adjustment will maximize the application of the flocculants and effectiveness of the bag filter and ion exchange elements of the treatment system.

3) Safety Data Sheet (SDS) and Chemical Abstract Service (CAS) Registry number for each chemical or additive; Provided in Attachment 3.

4) The frequency (e.g. hourly, daily), duration (e.g., hours, days), magnitude (i.e. frequency as maximum and average concentration), and method of application for the chemical or additive; The treatment system will be operated for a maximum of eight hours per day. The pH control system will continuously monitor the influent as it passes through the system. If the pH is below the optimal pH of 8.2, the control system will add sodium hydroxide to the influent to increase the pH prior to passing through the in-line flocculant system. The sodium hydroxide will dose at a maximum of 15-25% solution by weight into the influent when the system registers a pH less than 8.2. The method of application for the sodium hydroxide will be in-line application to the stream of water as it passes through the pH control system.

5) Any material compatibility risks for storage of the chemical or additive; Provided in the SDS in Attachment 3.

6) If available, the vendor's reported aquatic toxicity; Provided in the SDS in Attachment 3.

***7) A description of the material management control measures employed*;** Sodium Hydroxide will arrive on-site in 55-gallon drums and be stored on a secondary containment pallet. A pH adjustment system with pH probes and metering pumps will draw from the drum and dose small amounts of NaOH through an injection spool, installed on the influent hose, in-line prior to storage in a 21K frac tank. The dosing will be automatically adjusted based on influent pH measurements of the water and effluent pH measurements of the water in the 21K frac tank. The containment pallet will be capable of containing the full 55-gallon drum of NaOH in the event of a catastrophic failure of the drum. Proper PPE and decontamination procedures will be utilized if and when a drum change out is required.

An explanation which demonstrates that the addition of such chemicals:

1) ***Will not add any pollutants in concentrations which exceed permit effluent limitations;*** The addition of sodium hydroxide will not add any pollutants in concentrations which exceed permit effluent limitations.

2) ***Will not exceed any applicable water quality standard;*** The addition of the Sodium Hydroxide will not exceed any applicable water quality standard due to the proposed concentration of hydroxide to be added and the immediate dissolution of sodium hydroxide into less harmful chemical compounds, sodium and hydroxyl ions.

3) ***Will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit;*** The addition of the Sodium Hydroxide will not add any pollutants that would justify the application of permit conditions that are different or absent in this permit. The sodium hydroxide is only being added and diluted in solution for pH adjustments, which will be monitored with a pH meter in the field prior to discharge.

HaloKlear®

PRODUCT FACTS

BHR-P50
HYBRID FLOCCULANT

Description

HaloKlear's unique hybrid flocculant, **BHR-P50**, offers a greener alternative to commodity chemicals. Our blend is free of acrylamide monomers and is part of our continued efforts to innovate towards more eco-friendly water treatment solutions. From industrial wastewater clarification to nutrient control in ponds and lakes, **BHR-P50** offers a wide range of performance benefits without increasing costs.

Industry Applications

- Stormwater management
- Construction
- Environmental Water remediation

Deployment Method

The liquid **BHR-P50** is deployed similar to commodity polyaluminum chloride. Typical application uses metering pumps. **BHR-P50** can be applied using several delivery methods, including semi-passive and active systems.

Packaging

Lot Number must be legible on each container. Container types: 275-gallon IBC tote with camlock or threaded outlet or 55-gallon drum.

Handling and Storage

All containers must be free of leaks, damage, and gross contamination. Product should be maintained between 40˚F and 90˚F. Keep from freezing.

Product Benefits

- **High Shear Strength & Filterability**
- **Dense Floc That is Easily Dewaterable**
- **Low Bioaccumulation of Inorganic Salts**
- **Low Ecotoxicity Profile**
- **Effective Across a Wide Spectrum of pH and Salinity.**

Product Properties

Appearance	Homogenous white-to-yellow opaque liquid
Viscosity	500 – 1,300 cP
Specific Gravity	0.95 – 1.15
pH	2.3 – 3.7
LC50 fish 1	3222 ppm Rainbow Trout; 96 hour

Field Handling Recommendations

Keep out of direct sunlight. Some separation may occur but will not affect performance. For more information, contact your Dober representative.

Safety Data

BHR-P50 is a corrosive substance. Before handling this material read the corresponding Material Safety Data Sheet for safety and health data.

For additional information contact Dober at:
(800) 323-4983
info@dober.com
www.dober.com/water_treatment

DOBER

HaloKlear BHR-P50

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/02/2016 Revision date: 09/16/2019 Supersedes: 05/24/2017 Version: 2.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixtures

Product name : HaloKlear BHR-P50

Product code : 301420

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Flocculates solids

1.3. Details of the supplier of the safety data sheet

Dober Chemical Corp.
543 Forest Road
Hazle Township, PA 18202 - USA
T 630-410-7300 - F 630-410-7444
regulatory@dober.com - www.dober.com

1.4. Emergency telephone number

Emergency number : 1-800-255-3924 / 1-813-248-0585
ChemTel

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS US classification

Met. Corr. 1 H290
Eye Dam. 1 H318

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :

GHS05

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H290 - May be corrosive to metals
H318 - Causes serious eye damage

Precautionary statements (GHS US) : P234 - Keep only in original container.
P280 - Wear eye protection, protective clothing, protective gloves.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center or doctor
P390 - Absorb spillage to prevent material-damage.
P406 - Store in corrosive resistant container with a resistant inner liner.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

16% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
16% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Aluminum chloride hydroxide sulfate	(CAS-No.) 39290-78-3	10 - 30	Met. Corr. 1, H290 Eye Dam. 1, H318

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after eye contact : Serious damage to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store in a well-ventilated place. Keep cool.

Incompatible materials : Metals.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

HaloKlear BHR-P50	
ACGIH	Not applicable
OSHA	Not applicable

Aluminum chloride hydroxide sulfate (39290-78-3)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Hand protection : Protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Yellow to amber

Odor : odorless

Odor threshold : No data available

pH : 3 - 3.5

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : Not applicable

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : No data available

Relative vapor density at 20 °C : No data available

Relative density : No data available

Solubility : Water: 100%

Log Pow : No data available

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

Explosion limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

metals.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Aluminum chloride hydroxide sulfate (39290-78-3)	
LD50 oral rat	> 5000 mg/kg

Skin corrosion/irritation : Not classified
pH: 3 - 3.5

Serious eye damage/irritation : Causes serious eye damage.
pH: 3 - 3.5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects after eye contact : Serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

HaloKlear BHR-P50	
LC50 fish 1	3222 ppm Rainbow Trout; 96 hour

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Aluminum chloride hydroxide sulfate (39290-78-3)	
Log Pow	< 3

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on global warming : No known effects from this product.

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.

Ecology - waste materials : None known.

SOUND ENVIRONMENTAL CONCEPTS

Safety Data Sheet

acc. to OSHA HCS

1 IDENTIFICATION

· **Product identifier**

· **Trade name:** HaloKlear: Gel-Floc

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
Sound Environmental Concepts
22726 102nd Ave SE, Woodinville, WA 98077
1 (206) 730 - 5376
ray@soundenvirocon.com

· **Information department:** Product safety department

· **Telephone number:**
+ 1 (206) 730 – 5376

· Information department: Product safety department

· Emergency telephone number: +1 (800) 424-9300 (24 Hours)
During normal opening times: +1 (425) 881-6464
CHEMTREC (Domestic, North America) +1-703-527-3887 CHEMTREC (International, collect calls accepted)

2 HAZARD(S) IDENTIFICATION

· **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** *Not applicable.*
Information concerning particular hazards for human and environment:
The product does not have to be labeled due to the calculation procedure of international guidelines
Classification system:
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

2 HAZARD(S) IDENTIFICATION CONTD.

· **Label elements**
· **Labelling according to EU guidelines:**
Observe the general safety regulations when handling chemicals. The product is not subject to identification regulations according to directives on hazardous materials.

· **Classification System**
· **NFPA ratings (scale 0 - 4)**
· *Health = 0*
· *Fire = 0*
· *Reactivity = 0*

· **HMIS-ratings (scale 0 - 4)**
· *Health = 0*
· *Fire = 0*
· *Reactivity = 0*

· *Other hazards*
· *Results of PBT and vPvB assessment*
· *PBT: Not applicable*
· *vPvB: Not applicable*

3 COMPOSITION/INFORMATION ON INGREDIENTS

· **Chemical characterization:** *Mixtures*
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*
· **Dangerous components:** *Void*

4 FIRST-AID MEASURES

· **Description of first aid measures**
· **General information:** *No special measures required.*
· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
· **After skin contact:** *Generally the product does not irritate the skin.*
· **After eye contact:** *Rinse opened eye for several minutes under running water.*
· **After swallowing:** *If symptoms persist consult doctor.*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

4 FIRST AID MEASURES CONTD.

· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available

5 FIRE-FIGHTING MEASURES

· **Extinguishing media**
· **Suitable extinguishing agents:** *CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
· **Special hazards arising from the substance or mixture** *No further relevant information available.*
· **Advice for firefighters**
· **Protective equipment:** *No special measures required.*

6 ACCIDENTAL RELEASE MEASURES

· **Personal precautions, protective equipment and emergency procedures** *Not required.*
· **Environmental precautions:** *Do not allow to enter sewers/ surface or ground*
· **Methods and material for containment and cleaning up:** *Pick up mechanically*
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 HANDLING AND STORAGE

· **Handling:**
· **Precautions for safe handling** *No special measures required.*
· **Information about protection against explosions and fires:** *No special measures required.*
· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** *No special requirements.*
· **Information about storage in one common storage facility:** *Not required.*
· **Further information about storage conditions:** *None.*
· **Specific end use(s)** *Water flocculent*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

8 EXPOSURE CONTROLS/PERSONAL PROTECTION CONTD.

· **Additional information about design of technical systems:** *No further data; see item 7.*
· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** *The lists that were valid during the creation were used a basis.*
· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** *Not required.*
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can't be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** *Not required.*

9 PHYSICAL AND CHEMICAL PROPERTIES

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**
· **Form:** *Powder*
· **Color:** *Whitish*
· **Odor:** *Product specific*
· **Odour threshold:** *Not determined*

---

pH-value at 20 °C (68 °F): *Not applicable*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

9 PHYSICAL AND CHEMICAL PROPERTIES CONTD.

· **Change in condition**	
· **Melting point/Melting range:**	*Undetermined*
· **Boiling point/Boiling range:**	*> 999 °C (> 1830 °F)*
· **Flash point:**	*Not applicable*
· **Flammability (solid, gaseous):**	*Not determined*
· **Ignition temperature:**	
· **Decomposition temperature:**	*Not determined*
· **Auto igniting:**	*Product is not selfigniting*
· **Danger of explosion:**	*Product does not present an explosion hazard.*
· **Explosion limits:**	
Lower:	*Not determined*
Upper:	*Not determined*
· **Vapor pressure at 20 °C (68 °F):**	*Not applicable*
· **Density at 20 °C (68 °F):**	*Not determined*
· **Relative density**	*Not determined*
· **Vapour density**	*Not applicable*
· **Evaporation rate**	*Not applicable*
· **Solubility in / Miscibility with**	
Water:	*Insoluble*
· **Partition coefficient (n-octanol/water):**	*Not determined*
· **Viscosity:**	
Dynamic:	*Not applicable*
Kinematic:	*Not applicable*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

9 PHYSICAL AND CHEMICAL PROPERTIES CONTD.

· **Solvent content:**
Organic solvents: *0.0 %*
Solids content: 100.0%
· **Other information** *No further relevant information available.*

10 STABILITY AND REACTIVITY

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
· **Possibility of hazardous reactions** *No dangerous reactions known.*
· **Conditions to avoid** *No further relevant information available.*
· **Incompatible materials:** *No further relevant information available.*
· **Hazardous decomposition products:** *No dangerous decomposition products known.*

11 TOXICOLOGICAL INFORMATION

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** *No irritant effect.*
· **on the eye:** *No irritating effect.*
· **Sensitization:** *No sensitizing effects known.*
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

11 TOXICOLOGICAL INFORMATION CONTD.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 ECOLOGICAL INFORMATION

· **Toxicity**
· **Aquatic toxicity:** *No further relevant information available.*
· **Persistence and degradability** *No further relevant information available.*
· **Behavior in environmental systems:**
· **Bioaccumulative potential** *No further relevant information available.*
· **Mobility in soil** *No further relevant information available.*
· **Additional ecological information:**
· **General notes:** *Water hazard class 1 (self-assessment): Slightly hazardous for water.*
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*
· **Other adverse effects** *No further relevant information available.*

13 DISPOSAL CONSIDERATIONS

· **Waste treatment methods**
· **Recommendation:** *Smaller quantities can be disposed of with household waste.*
· **Uncleaned packaging:**
· **Recommendation:** *Disposal must be made according to official regulations.*

14 TRANSPORT INFORMATION

· **UN-Number**
· **DOT, IMDG, IATA** *Not regulated*

· **UN proper shipping name**
· **DOT, IMDG, IATA** *Not regulated*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

14 TRANSPORT INFORMATION CONTD.

· **Transport hazard class(es)**
· **DOT, IMDG, IATA**
· **Class** *Not regulated*

· **Packing group**
· **DOT, IMDG, IATA** *Not regulated*

· **Special precautions for user** *Not applicable*

· **Transport in bulk according to Annex II of**
· **MARPOL73/78 and the IBC Code** *Not applicable*

· **UN "Model Regulation":** -

15 REGULATORY INFORMATION

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients are listed.

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

15 REGULATORY INFORMATION CONTD.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients are listed.

· **Product related hazard informations:**
Observe the general safety regulations when handling chemicals. The product is not subject to identification regulations according to directives on hazardous materials.
· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** *Environment protection department.*
· **Contact: Mrs. Jackson**
Date of preparation / last revision 02/09/2015 / - Present
· **Abbreviations and acronyms:**
ADR: *Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International*
Carriage of Dangerous Goods by Road)
IMDG: *International Maritime Code for Dangerous Goods*
DOT: US Department of Transportation
IATA: *International Air Transport Association*
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: *European List of Notified Chemical Substances*

Safety Data Sheet

Trade Name: HaloKlear: Gel-Floc

16 OTHER INFORMATION CONTD.

CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: *National Fire Protection Association (USA)*
HMIS: *Hazardous Materials Identification System (USA)*

SOUND ENVIRONMENTAL CONCEPTS

Safety Data Sheet

acc. to OSHA HCS

1 IDENTIFICATION

· **Product identifier**

Product form	: Substance
Product name	: HaloKlear DBP-2100 Socks
Chemical name	: Xanthan Gum
CAS No	: 11138-66-2
Product code	: 210014

· **Relevant identified uses of the substance or mixture and uses advised against**

Uses of the substance/mixture : Flocculant

· **Manufacturer/Supplier:**

Sound Environmental Concepts
22726 102nd Ave SE, Woodinville, WA 98077
1 (206) 730 - 5376
ray@soundenvirocon.com

· **Information department:** Product safety department

· **Telephone number:**
+ 1 (206) 730 – 5376

· Information department: Product safety department

· Emergency telephone number: +1 (800) 424-9300 (24 Hours)
During normal opening times: +1 (425) 881-6464
CHEMTREC (Domestic, North America) +1-703-527-3887 CHEMTREC (International, collect calls accepted)

2 HAZARD(S) IDENTIFICATION

· **Classification of the substance or mixture**
GHS-US Classification
Not classified

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

2 HAZARD(S) IDENTIFICATION CONTD.

· **Label Elements**
GHS-US Labelling
No labeling applicable
· **Other hazards**
Other hazards not contributing to the classification : *May form combustible dust concentrations in air. May cause eye irritation.*
· **Unknown acute toxicity (GHS-US)**
Not applicable

3 COMPOSITION/INFORMATION ON INGREDIENTS

· **Substance**
Substance type : *Mono-constituent*
Name : *HaloKlear DBP-2100 Socks*
CAS No : *11138-66-2*
Fulltext of H-statements: see section 16
· **Mixture**
Not applicable

4 FIRST AID MEASURES

· **Description of first aid measures**
First-aid measures general : *Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).*
First-aid measures after inhalation : *Allow breathing of fresh air. Allow the victim to rest.*
First-aid measures after skin contact : *Removed affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.*
First-aid measures after eye contact : *Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.*
First-aid measures after ingestion : *Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.*

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

4 FIRST AID MEASURES

· **Most important symptoms and effects, both acute and delayed**
Symptoms/Injuries after eye contact : Not expected to present a significant hazard under anticipated conditions of normal use.

· **Indication of any immediate medical attention and special treatment needed**
No additional information available

5 FIRE-FIGHTING MEASURES

· **Extinguishing media**
Suitable extinguished media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

· **Special hazards arising from the substance or mixture**
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

· **Advice for firefighters**
Firefighting instructions : Exercise caution when fighting any chemical fire. Eliminate all ignition sources if safe to do so. Use water spray of fog for cooling exposed containers.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
Other information : Spills produce extremely slippery surfaces. Avoid dust formation.

6 ACCIDENTAL RELEASE MEASURES

· **Personal precautions, protective equipment and emergency procedures**

· **For non-emergency personnel**
Emergency procedures : Evacuate unnecessary personnel.

· **For emergency responders**
Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area

· **Environmental precautions**
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

6 ACCIDENTAL RELEASE MEASURES

· **Personal precautions, protective equipment and emergency procedures**
General measures : *Use special care to avoid static electric charges.*
· **For non-emergency personnel**
Emergency procedures : *Evacuate unnecessary personnel.*
· **For emergency responders**
Protective equipment : *Equip cleanup crew with proper protection.*
Emergency procedures : *Ventilate area.*
· **Environmental precautions**
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
· **Methods and material for containment and cleaning up**
Methods of cleaning up : *On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.*
· **Reference to other sections**
See Section 8. Exposure controls and personal protection.

7 HANDLING AND STORAGE

· **Precautions for safe handling**
Precautions for safe handling : *Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and leaving work. Provide good ventilation in process area to prevent formation of vapor. No smoking.*
· **Conditions for safe storage, including and incompatibles**
Storage conditions : *Keep only in the original container in a cool, well-ventilated place. Keep container closed when not in use.*
Incompatible products : *Oxidizing agent.*
Incompatible materials : *Sources of ignition.*
· **Specific end use(s)**
No additional information available

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

· **Control parameters**
HaloKlear DBP-2100 Socks
ACGIH : *Not applicable*
OSHA : *Not applicable*

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

· **Exposure controls**

Personal protective equipment	*: Avoid all unnecessary exposure.*
Hand protection	*: Wear protective gloves/protective clothing/eye protection/face protection protective gloves.*
Eye protection	*: Chemical goggles or safety glasses.*
Respiratory protection	*: Use a property fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.*
Other information	*: Do not eat, drink or smoke during use.*

9 PHYSICAL AND CHEMICAL PROPERTIES

· **Information on basic physical and chemical properties**

Physical state	*: Solid*
Color	*: White to tan*
Odor	*: odorless*
Odour threshold	*: No data available*
pH	*: approximately neutral (1% solution)*
Relative evaporation rate	*: No data available*
Melting point	*: No data available*
Freezing point	*: No data available*
Boiling point	*: No data available*
Flash point	*: No data available*
Auto-ignition temperature	*: No data available*
Decomposition temperature	*: No data available*
Flammability (solid, gas)	*: No data available*
Vapor pressure	*: No data available*
Relative vapor density	*: No data available*
Relative density	*: No data available*
Solubility	*: Water: 100 %*
Log Pow	*: No data available*
Log Kow	*: No data available*
Viscosity, kinematic	*: No data available*

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

9 PHYSICAL AND CHEMICAL PROPERTIES

Viscosity, dynamic	*: No data available*
Explosive properties	*: No data available*
Oxidizing properties	*: No data available*
Explosive limits	*: No data available*

· **Other Information**

No additional information available

10 STABILITY AND REACTIVITY

· **Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

· **Chemical stability**

Stable under normal conditions.

· **Possibility of hazardous reactions**

No dangerous reactions known under normal conditions of use.

· **Conditions to avoid**

Avoid dust formation.

· **Incompatible materials**

Oxidizing agent.

· **Hazardous decomposition products**

Thermal decomposition generates: Carbon dioxide. Carbon monoxide. Fume.

11 TOXICOLOGICAL INFORMATION

· **Information on toxicological effects**

Acute toxicity	*: Not classified*
Skin corrosion/irritation	*: Not classified* *pH: approximately neutral (1% solution)*
Serious eye damage/irritation	*: Not classified* *pH: approximately neutral (1% solution)*
Respiratory or skin sensitization	*: Not classified*
Germ cell mutagenicity	*: Not classified*
Carcinogenicity	*: Not classified*
Reproductive toxicity	*: Not classified*
Specific target organ toxicity (single exposure)	*: Not classified*

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

11 TOXICOLOGICAL INFORMATION

Specific target organ toxicity (repeated exposure)	*: Not classified*
Aspiration hazard	*: Not classified*
Potential adverse human health effects and symptoms	*: Based on available data, the classification criteria are not met.*

12 ECOLOGICAL INFORMATION

· **Toxicity**
HaloKlear DBP-2100 Socks (11138-66-2)

LC50 fish 1	*491 mg/l Rainbow Trout; 96 hour*

· **Persistence and degradability**
HaloKlear DBP-2100 Socks (11138-66-2)

Persistence and degradability	*The product is biodegradable*

· **Bioaccumulative potential**
HaloKlear DBP-2100 Socks (11138-66-2)

Bioaccumulative potential	*Inherently biodegradable*

· **Mobility in soil**
HaloKlear DBP-2100 Socks (11138-66-2)

Mobility in soil	*Not available*

· **Other adverse effects**

Effect on Global warming	*: No known ecological damaged caused by this product.*
Other information	*: No other effects known.*

13 DISPOSAL CONSIDERATIONS

· **Waste treatment methods**

Waste disposal recommendations	*: Dispose of contents/container in accordance with Licensed collector's sorting instructions.*
Ecology – waste materials	*: None known.*

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

14 TRANSPORT INFORMATION

UN-No.(DOT): *: Non Regulated*
UN-No. (IMDG): *: Non Regulated*
UN-No. (IATA): *: Non Regulated*

· **UN proper shipping name**
Proper Shipping Name (DOT): *: Not applicable*
Proper Shipping Name (IMDG): *: Not applicable*
Proper Shipping Name (IATA): *: Not applicable*

· **Transport hazard class(es)**
Transport hazard class(es) (DOT): *: Not applicable*
Transport hazard class(es) (IMDG): *: Not applicable*
Transport hazard class(es) (IATA): *: Not applicable*

· **Packing group**
Packing group (DOT): *: Not applicable*
Packing group (IMDG): *: Not applicable*
Packing group (IATA): *: Not applicable*

· **Environmental hazards**
Marine pollutant(IMDG): *: No*
Marine pollutant(IATA): *: No*

15 REGULATORY INFORMATION

· **US Federal regulations**
All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency ToxicSubstances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

· **International Regulations**
Canada
Aluminum chloride hydroxide sulfate (39290-78-3)
No additional information available

Safety Data Sheet

Trade Name: HaloKlear DBP-2100 Socks

15 REGULATORY INFORMATION

· **US State regulations**
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

16 OTHER INFORMATION

Other information:	*: None*
NFPA health hazard	*: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.*
NFPA fire hazard	*: 0 - Materials that will not burn.*
NFPA reactivity	*: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.*
NFPA specific hazard	*: NA - Not Applicable*
HMIS III Rating	
Health	*: 0 - No significant risk to health*
Flammability	*: 0*
Physical	*: 0*
Personal Protection	*: B*

SECTION 14: Transport information

UN-No.(DOT)	:	Non Regulated when transported in packaging constructed of materials that will not react dangerously with or be degraded by the material.
UN-No. (IMDG)	:	3264
UN-No. (IATA)	:	3264

14.2. UN proper shipping name

Proper Shipping Name (DOT)	:	Not applicable.
Proper Shipping Name (IMDG)	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum Chloride Hydroxide Sulfate)
Proper Shipping Name (IATA)	:	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Chloride Hydroxide Sulfate)

14.3. Transport hazard class(es)

Class (DOT)	:	Not applicable.
	:	
Transport hazard class(es) (IMDG)	:	8
Hazard labels (IMDG)	:	8
	:	
Transport hazard class(es) (IATA)	:	8
Hazard labels (IATA)	:	8
	:	

14.4. Packing group

Packing group (DOT)	:	Not applicable.
Packing group (IMDG)	:	III
Packing group (IATA)	:	III

14.5. Environmental hazards

Marine pollutant(IMDG)	:	No
Marine pollutant(IATA)	:	No

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Aluminum chloride hydroxide sulfate (39290-78-3)	
EPA TSCA Regulatory Flag	PMN

Guar Gum (9000-30-0)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

15.2. International regulations

CANADA

Aluminum chloride hydroxide sulfate (39290-78-3)
Listed on the Canadian DSL (Domestic Substances List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 09/16/2019

Abbreviations and acronyms : Acute Toxicity Estimate. Bioconcentration factor. Median effective concentration. International Air Transport Association. International Maritime Dangerous Goods. Median lethal concentration. Median lethal dose.

Other information : None.

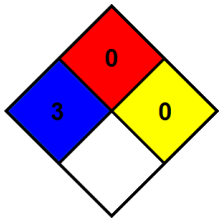
Full text of H-phrases:

H290	May be corrosive to metals
H318	Causes serious eye damage

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

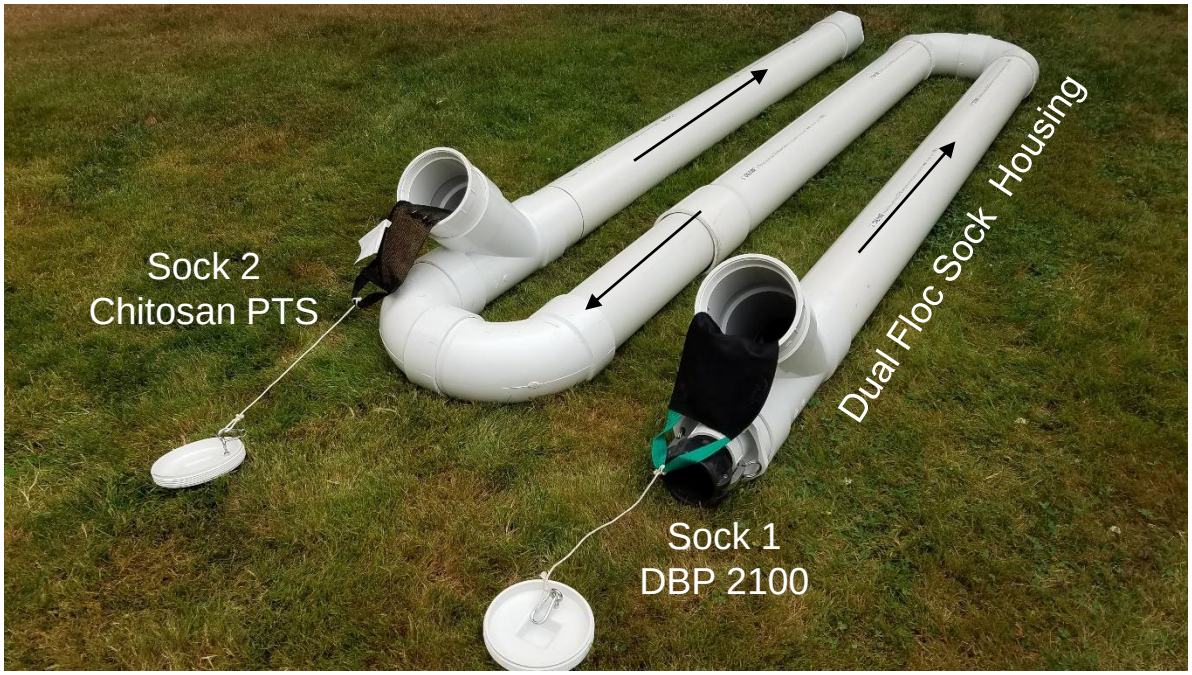
Personal protection : C

Dober SDS US

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

United Rentals
FLUID SOLUTIONS

How to Use the Dual Floc Water Treatment System



DBP-2100 Floc Sock 2 lbs.

Specifications:

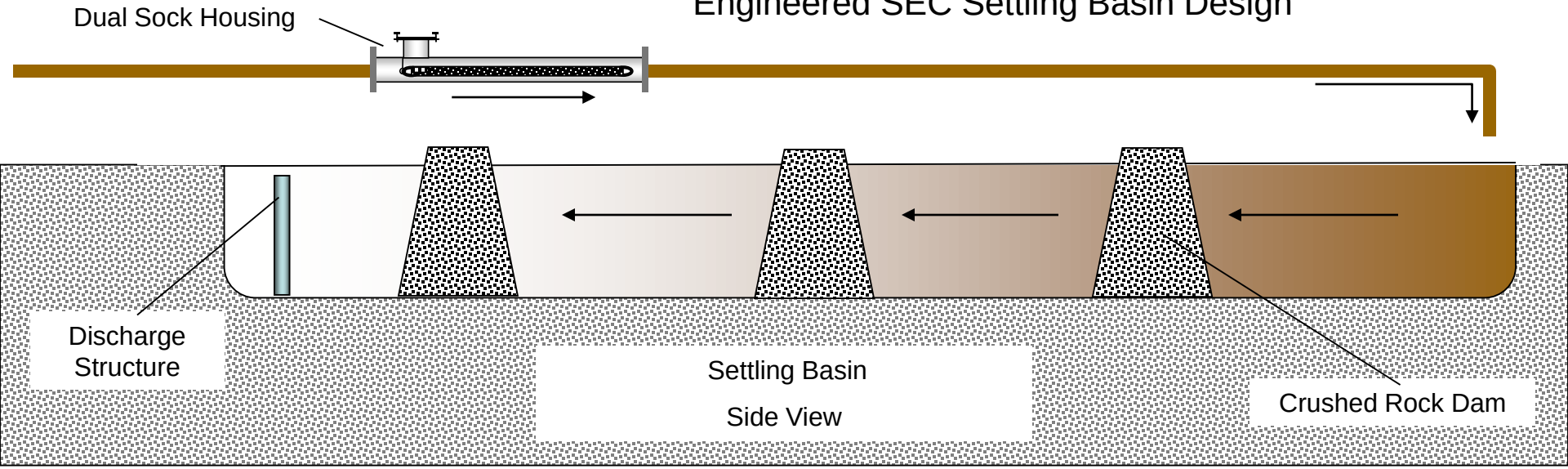
Length:	72 Inches
Width:	6 in. diameter
Fabric:	Knit fabric
Natural Polymer:	2.0 lbs. (dry weight)
Treatment:	200,000 gal. @ 1 mg/L

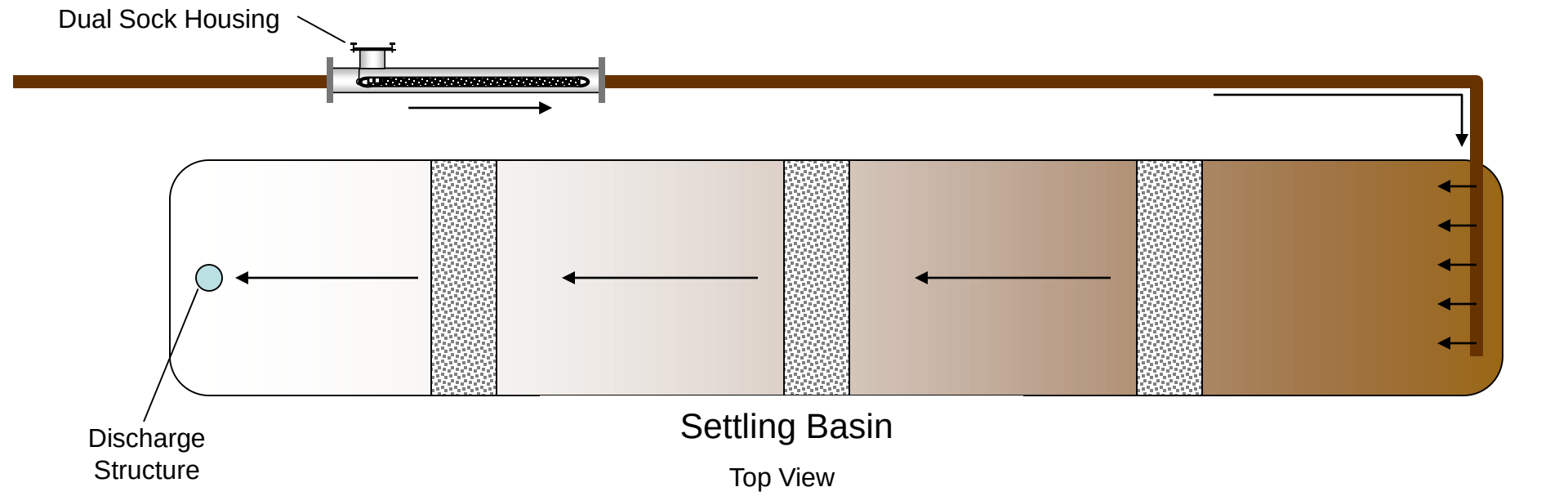
Passive Treatment Sock 2-lb.

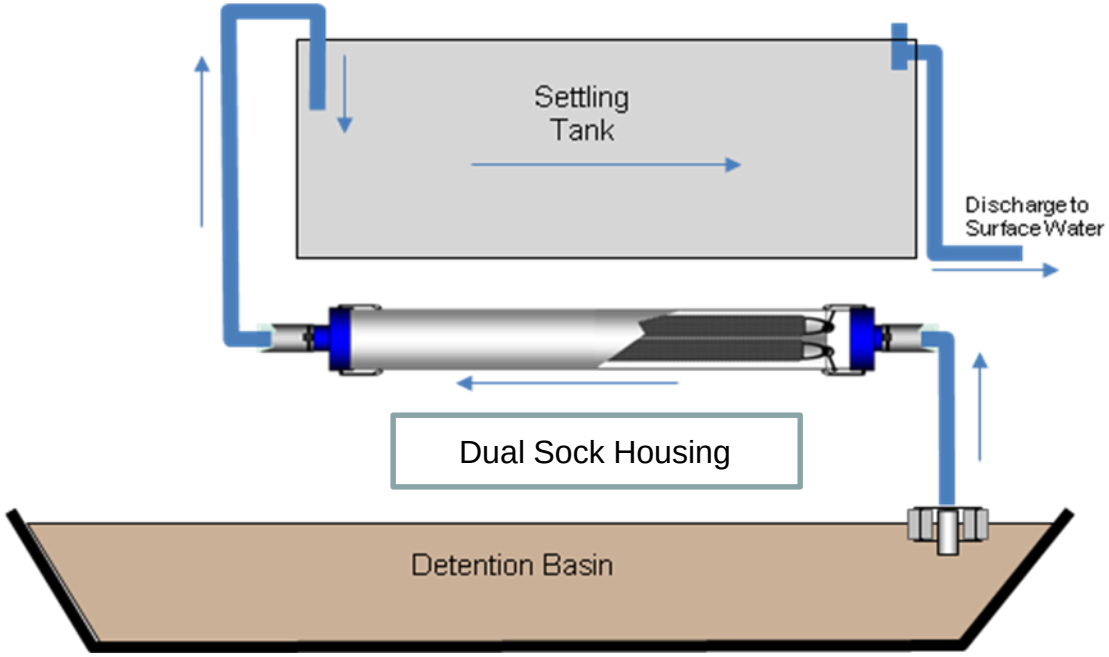
Specifications:

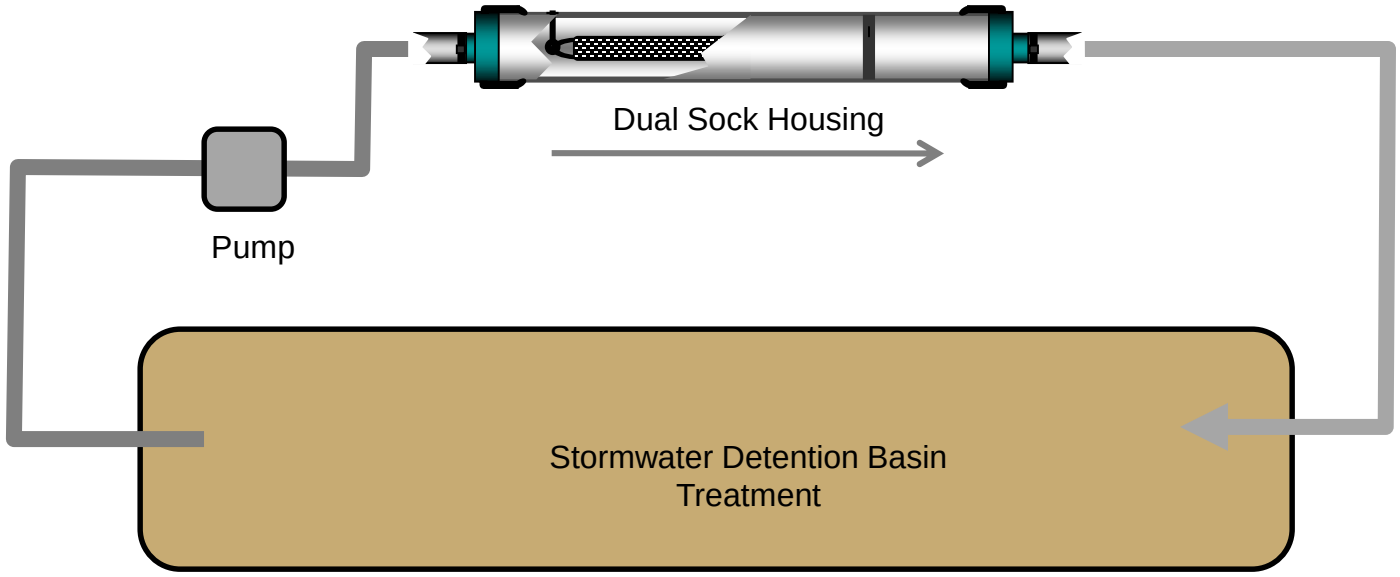
Length	72 Inches
Width:	5 in. diameter
Fabric:	Woven polypropylene
Chitosan:	2.0 lbs. (dry weight)
Treatment:	200,000 gal. @ 1 mg/L

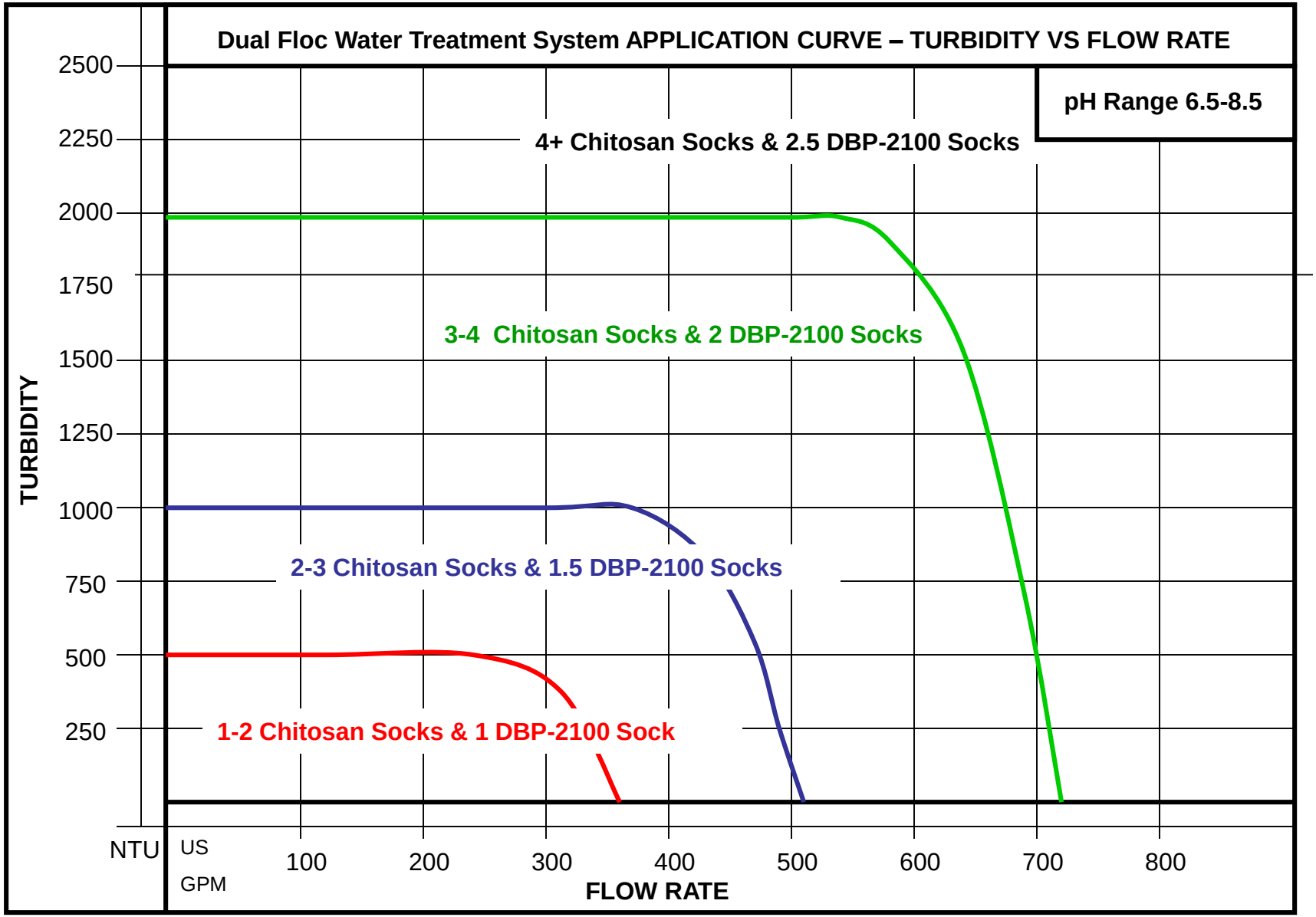
Engineered SEC Settling Basin Design






Settling
Tank
Discharge to
Surface Water
Dual Sock Housing
Detention Basin


Dual Sock Housing
Pump
Stormwater Detention Basin
Treatment


Dual Floc Water Treatment System APPLICATION CURVE – TURBIDITY VS FLOW RATE
pH Range 6.5-8.5
4+ Chitosan Socks & 2.5 DBP-2100 Socks
3-4 Chitosan Socks & 2 DBP-2100 Socks
2-3 Chitosan Socks & 1.5 DBP-2100 Socks
1-2 Chitosan Socks & 1 DBP-2100 Sock
TURBIDITY
NTU
2500
2250
2000
1750
1500
1250
1000
750
500
250
US GPM
100
200
300
400
500
600
700
800
FLOW RATE

SAFETY DATA SHEET

Creation Date 22-Sep-2009 **Revision Date** 18-Jan-2018 **Revision Number** 5

1. Identification

Product Name **Sodium hydroxide**

Cat No. : **SS4141; SS256500; SS263500; SS2641; SS264-1LC; SS414-200**

Synonyms Caustic soda; Lye.

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)

Corrosive to metals	Category 1
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
May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary Statements
Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
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)
None identified

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Water	7732-18-5	75 - 85
Sodium hydroxide	1310-73-2	15 - 25

4. First-aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

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. Immediate medical attention is required.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms and 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 CO_2, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point	Not applicable
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Oxidizing Properties	Not oxidising
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
Thermal decomposition can lead to release of irritating gases and vapors
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	Flammability	Instability	Physical hazards
3	0	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Sodium hydroxide	Ceiling: 2 mg/m^3	Ceiling: 2 mg/m^3 TWA: 2 mg/m^3	IDLH: 10 mg/m^3 Ceiling: 2 mg/m^3	Ceiling: 2 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 that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

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	Wear appropriate protective gloves and clothing to prevent skin exposure.
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
Odor	Odorless
Odor Threshold	No information available
pH	14 @ 20°C Alkaline
Melting Point/Range	< 0 °C / 32 °F
Boiling Point/Range	approx 120 °C / 248 °F
Flash Point	Not applicable
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	14 mmHg
Vapor Density	> 1.0
Specific Gravity	1.182
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat.
Incompatible Materials	Metals, Acids, halocarbons
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing. Contact with metals may evolve flammable hydrogen gas. Corrosive to metals.

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.
Mist LC50 Based on ATE data, the classification criteria are not met. ATE > 5 mg/l.
Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	Not listed	Not listed
Sodium hydroxide	Not listed	LD50 = 1350 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium hydroxide	1310-73-2	Not listed	Not listed	Not listed	Not listed	Not listed

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
Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium hydroxide	Not listed	LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss)	Not listed	Not listed

Persistence and Degradability Soluble in water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

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	UN1824
Proper Shipping Name	SODIUM HYDROXIDE SOLUTION
Hazard Class	8
Packing Group	II

TDG

UN-No	UN1824
Proper Shipping Name	SODIUM HYDROXIDE SOLUTION
Hazard Class	8
Packing Group	II

IATA

UN-No	UN1824
Proper Shipping Name	SODIUM HYDROXIDE SOLUTION
Hazard Class	8
Packing Group	II

IMDG/IMO

UN-No	UN1824
Proper Shipping Name	SODIUM HYDROXIDE SOLUTION
Hazard Class	8
Packing Group	II

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Sodium hydroxide	X	X	-	215-185-5	-		X	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 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium hydroxide	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sodium hydroxide	1000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-
Sodium hydroxide	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
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 22-Sep-2009
Revision Date 18-Jan-2018
Print Date 18-Jan-2018
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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

COLUMBUS CHEMICAL INDUSTRIES

Safety Data Sheet

Citric Acid 50% (w/w)

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Citric Acid 50% (w/w)

Synonyms/Generic Names: 3-carboxy-3-hydroxy pentanedioic acid, 2-hydroxypropane- 1,2,3-tricarboxylic acid, 3-hydroxypentanedioic acid-3-carboxylic acid, hydrogen citrate

Product Number: 8481

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC – 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Irritant

Target Organs: None

Signal Words: Warning

Pictograms: None

GHS Classification:

Eye Irritant	Category 2B

GHS Label Elements, including precautionary statements:

Hazard Statements:

H320	Causes eye irritation.

Precautionary Statements:

P264	Wash hands thoroughly after handling.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

Potential Health Effects

Eyes	Causes eye irritation.
Inhalation	May cause respiratory tract irritation.
Skin	May cause skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	1
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	1
Fire	0
Reactivity	0
Personal	B

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Citric Acid	49-51	77-92-2	201-069-1	$C_6H_8O_7$	210.14 g/mol
Water	Balance	7732-18-5	231-791-2	H_2O	18.00 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention if necessary.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
Skin	Flush with plenty of water and wash using soap. Get medical attention if necessary.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Use water spray, dry chemical, or carbon dioxide to extinguish supporting fire. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (carbon oxides) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Do not let product enter drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Absorb neutralized spill with vermiculite or other inert absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. Containers, even when empty, will retain residue and vapors.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Protect against moisture and light. Maintain adequate ventilation. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Controls:

Component	Exposure Limits	Basis	Entity
Citric Acid	5 mg/m^3	PEL	OSHA

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses with a face shield for splash protection.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear neoprene or rubber gloves, apron and other protective clothing appropriate to the risk of exposure.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless solution. Liquid
Odor	Odorless
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available
Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Specific gravity	1.2410
Solubility (ies)	Soluble in water
Partition coefficient: n-octanol/water	Not Available

Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Oxidizers, alkalis
Hazardous Decomposition Products	Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Citric Acid

Skin	Skin – rabbit – Mild skin irritation 24 hours
Eyes	Eyes – rabbit – Severe eye irritation 24 hours
Respiratory	Not Available
Ingestion	LD50 Oral – rat – 3,000 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, itching, swelling, redness and pain.
Eyes	Irritation.
Respiratory	Irritation to the mucous membranes and upper respiratory tract.
Ingestion	Gastrointestinal discomfort and possible pain upon ingestion.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Citric Acid

Aquatic Vertebrate	LC50 – Leuciscus idus melanotus – 440 mg/l – 48 h
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Does not accumulate
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class E: Corrosive material

16. OTHER INFORMATION

Revision	Date
Revision 1	08/27/2013
Revision 2	10/21/2015